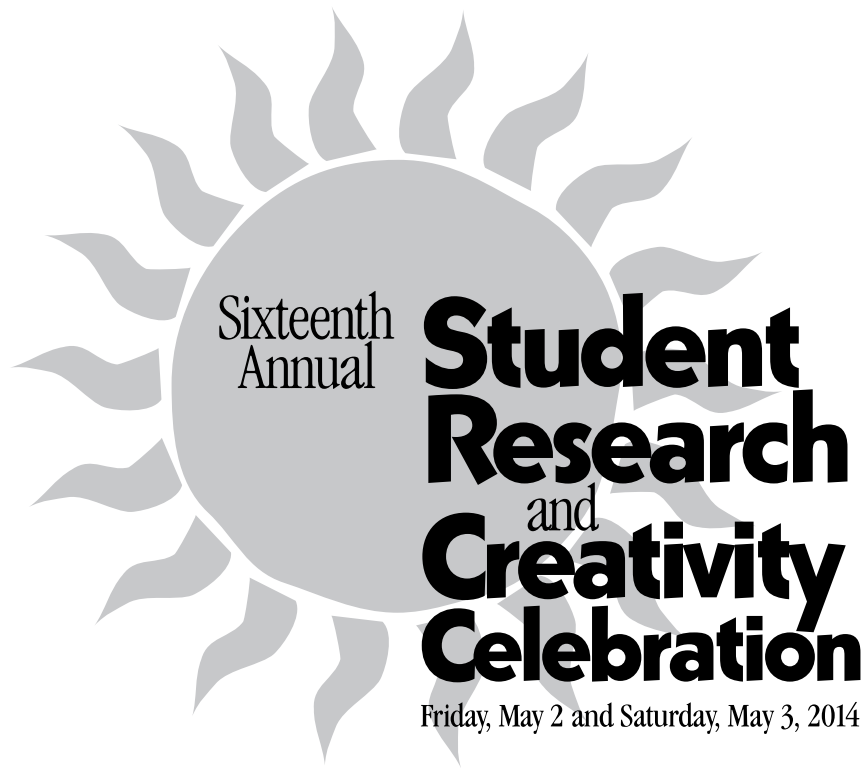




**BUFFALO STATE**  
The State University of New York



# Program & Abstracts

## **Editor**

Jill K. Singer, Ph.D.  
Director, Office of Undergraduate Research

## **Sponsored by**

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**Department and Program Coordinators for the Sixteenth Annual  
Student Research and Creativity Celebration**

Lisa Anselmi, Anthropology  
Kyeonghi Baek, Political Science  
Saziye Bayram, Mathematics  
Carol Beckley, Theater  
Lisa Berglund, English  
Lynn Boorady, Fashion and Textile Technology  
Louis Colca, Social Work  
Michael Cretacci, Criminal Justice  
Carol DeNysschen, Dietetics and Nutrition  
Eric Dolph, Interior Design  
Reva Fish, Social & Psychological Foundations  
Kelly Frothingham, Geography and Planning  
Jason Grinnell, Philosophy and Humanities  
Andrea Guiati, All College Honors Program  
Carolyn Guzski, Music  
David Henry, Elementary Education and Reading  
Gerri Hura, Adult Education  
Deborah Insalaco, Speech Language Pathology  
Lin Xia Jiang, Fine Arts  
Michael Johnson, Modern and Classical Languages  
Jamie Kim, Chemistry

Luke Krieg, Sociology  
Joelle Leclaire, Economics  
Bill Lin, Computer Information Systems  
Dan MacIsaac, Physics  
Candace Masters, Art Education  
Carmen McCallum, Higher Education Administration  
Amy McMillan, Biology  
Michaelene Meger, Exceptional Education  
Michael Niman, Communication  
Jill Norvilitis, Psychology  
Kathleen O'Brien, Hospitality and Tourism  
Barbara Olivieri, Health and Wellness  
Patrick Ravines, Art Conservation  
Misty Rodeheaver, History and Social Studies Education  
Stephen Saracino, Design  
Lynne Scalia, Business  
Jim Shea, Engineering Technology  
Gary Solar, Earth Sciences and Science Education  
Sandra Washington-Copeland, McNair Scholars Program  
Jo Yudess, Center for Studies in Creativity

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I am very pleased to welcome you to the 16<sup>th</sup> Annual Student Research and Creativity Celebration at SUNY Buffalo State. Once again, Buffalo State students have the opportunity to exercise their creativity and originality as they demonstrate their understanding of how knowledge is constructed and shared in a community of learners. There is, perhaps, no greater skill for 21<sup>st</sup> Century learners than knowing how to frame a question and answer it in a methodologically rigorous way. Student researchers learn the importance digging beneath the surface and assessing the credibility of new information. In effect, guided student research takes a student “out of the dining room and into the kitchen.” Consuming new information is an enjoyable experience; but producing it creates a truly satisfying sense of accomplishment.

Congratulations to all of the students who have made the commitment to participate in this year’s Celebration, and a special thanks to both of the faculty mentors and the former teachers who have helped advance their learning. In this “Year of the Teacher” it is well worth taking the time to acknowledge how much we owe to those who have guided our learning.

We admire the results of your hard work, and I am personally looking forward to consuming the fruits of your labors.



Howard Cohen, Ph.D.  
*Interim President*



A hallmark of Academic Year 2013-14 for Buffalo State is the 16<sup>th</sup> Annual Student Research and Creativity Celebration. The entire campus looks forward to this spring event in celebration of the intellectual, artistic, and creative accomplishments of our students. With the celebration, Buffalo State affirms again the institutional commitment to the joy of discovery.

The Student Research Program at Buffalo State is a shining example of incorporating high-impact learning practices in student’s educational experiences. The design and delivery of such experiences requires thoughtful planning, supervision, and mentoring by faculty. The student is likewise obligated to dedicate attention and meaningful time on task to the experience.

With the 16<sup>th</sup> Student Research and Creativity Celebration, we acknowledge and commend all who make this possible – students, faculty, Sponsored Programs office, Dean Mark Severson, and all others involved with the event. Dr. Jill Singer continues to provide leadership to advance Buffalo State’s programming and national prominence in undergraduate research. Thanks to Dr. Singer on behalf of the Buffalo State community.



Dennis Ponton, Ph.D.  
*Provost*



Welcome to the Student Research and Creativity Celebration!

This weekend marks the 16<sup>th</sup> annual Student Research and Creativity Celebration. As in previous years, preparing this 'Welcome' serves to remind me how this event has grown over the years. This growth would not be possible without the sustained commitment by administrators, faculty, and staff, as well as the value the institution places on supporting and engaging students both within and beyond the classroom. The level of enthusiastic support for this celebration of research, scholarship, and creativity grows stronger each year and it has become embedded in the culture of Buffalo State.

The Student Research and Creativity Celebration is the culmination of many months of planning and required the support and expertise from individuals and offices across the campus. There are 41 coordinators that helped promote the event at the department and program levels, and a number of faculty that play an important role by serving as moderators for oral sessions and monitors in the poster sessions. Students also play an important role in running the event, from showcasing their scholarly and creative works during the opening reception to helping presenters register and find their way to the correct location for their presentation. I gratefully acknowledge all these individual efforts.



Some of the activities presented are ongoing and the results are preliminary. Other presenters already have shared their work at national and international professional meetings, conferences, juried art shows and recitals. But whether the work is in its earliest stages or near completion, our students are learning about the value and importance of communicating and sharing the knowledge gained or exhibiting a new work of art. The inclusion of students across all academic disciplines places Buffalo State among those institutions that value the teacher-scholar model and consider undergraduate research as a transformative and high impact educational practice and one of the best ways to engage all students.

I hope you enjoy listening to and meeting the student presenters and their dedicated faculty mentors. I am certain you will be impressed by the diversity and quality of their presentations.

Enjoy the exciting and inspiring program!

Sincerely,

A handwritten signature in cursive script that reads "Jill Singer".

Jill Singer, Ph.D.

*Professor of Earth Sciences*

*Director, Office of Undergraduate Research*

*Our Research and Creativity Celebration showcases the engaged learning that characterizes SUNY Buffalo State. The work we all enjoy during this two-day event highlights our faculty's commitment to mentoring and our students' commitment to excellence. As research and scholarship are the hallmarks of a graduate education, the Graduate School is proud to support this work. I warmly congratulate all the students participating in this great weekend of intellectual and artistic expression—especially the graduate students—and sincerely thank all the faculty mentors for their contributions to student achievement. As always, we extend a special thanks to Dr. Jill Singer for her passionate leadership and for organizing the Research and Creativity Celebration, now in its 16<sup>th</sup> year!*

Kevin Railey, Ph.D. Associate Provost and Dean, The Graduate School



*"Tell me and I forget. Teach me and I remember. Involve me and I learn." This principle represents a deeply held value at Buffalo State and undergirds the work of undergraduate research. Mastering knowledge and skills by having students make discoveries and create original work can be a daunting challenge for an institution. Buffalo State takes great pride in being a leader in the area of undergraduate research. The work featured here represents some of the finest achievements of our community of learners. It is with great pleasure that I welcome the students, faculty, staff, and friends of Buffalo State to our Student Research and Creativity Celebration.*

Scott L. Johnson, Ph.D., Dean, University College and Associate Vice President for Undergraduate and International Education

*I am delighted you are joining our students for Buffalo State's 16<sup>th</sup> Annual Student Research and Creativity Celebration! The faculty and I are proud of the scholarly and creative accomplishments Arts and Humanities undergraduate and graduate students will share with you today. We invite you to interact with these exemplary students to learn how these research experiences enrich their studies. I congratulate our faculty, who mentor students by continually pursuing excellence in their own scholarship, and I thank Dr. Singer and those who so generously organized this celebration for their contributions to making student research a hallmark of Buffalo State.*

Benjamin C. Christy, A.Mus.D., Dean, School of Arts and Humanities





*I am delighted to welcome students, faculty, staff, and friends of Buffalo State to the 16<sup>th</sup> Anniversary of the Annual Student Research and Creativity Celebration. Each year this event renews my excitement about the positive impact our graduates will have on the world. I am energized by your enthusiasm as I marvel at your innovative research and creative work, inspired, encouraged and supported by your mentor. As Dean of the School of Education, I see the caliber of your work as concrete evidence of what can be accomplished when excellent teaching and attentive learning harmonize. In this Year of the Teacher, I find inspiration in the evidence of what can be accomplished when teachers and learners work together to solve problems, invent new ways of approaching old concepts and co-construct the future. Bravo!*

Wendy A. Paterson, Ph.D., Dean, School of Education

*Congratulations to the students and their faculty mentors taking part in the 16<sup>th</sup> annual Student Research and Creativity Celebration! I am sure that you will find your participation in this event, and the work leading up to it, is one of the very best parts of your academic career and an extremely valuable educational experience. I am very pleased to welcome students, guests, and faculty to this showcase of the outstanding research and creative work of Buffalo State undergraduate and graduate students.*

Mark W. Severson, Ph.D., Dean, School of Natural and Social Sciences



*On behalf of The School of The Professions, congratulations to all the student presenters participating in the 16<sup>th</sup> annual Student Research and Creativity Celebration! This wonderful event highlights the outstanding work done across our many different academic programs, and we are proud of the research you have done this year. We applaud you on achieving this significant academic accomplishment, and your work is inspiring to us all. Thanks also to the faculty mentors that encouraged and supported these students.*

Rita M. Zientek, Ph.D., Interim Dean, School of the Professions



# Saturday, May 3, 2014 E.H. Butler Library

## Oral Papers

**Rooms 208, 210 and 210B**

## Science, Mathematics, and Health: I

### Room 208

8:30 a.m. – 12:30 p.m.

*Presenting:*

8:30 a.m. – 9:30 a.m. (*each paper 15 minutes*)

Fueling the Dancer

Emily Frack and Donna Rossbach, DAN 495: Project

Borreliosis: An Infectious Trigger in Chronic Disease Processes

Phil Lockhart, HON 400: Muriel A. Howard Honors  
Colloquium

Preparation of Speech-Language Pathologists for Working with  
Older Adults

Heather Hoffmann, Speech-Language Pathology

On the Order of an Element in a Group

Courtney Greenway, MAT 491: Research in Mathematics

9:30 a.m. – 10:30 a.m. (*each paper 15 minutes*)

Properties of Cx31, a Human Gap Junction Protein Expressed in  
Xenopus Oocytes

Shelby Rarick, Biology

Mathematical Analysis of Heartbeat Oscillations

Antonio Galbier and Steven Tarasek, AMT 495: Applied  
Mathematics

Using Ground Penetrating Radar to Assist in Archaeological  
Excavations: Part 1

Trevor Jennings, Earth Science and Brandon Luther, Earth  
Science

Using Ground Penetrating Radar to Assist in Archaeological  
Excavations: Part 2

Brandon Luther, Earth Science and Trevor Jennings, Earth  
Science

10:30 a.m. – 11:30 a.m. (*each paper 15 minutes*)

Managing Blood Inventory: A Study of Forecasting Models

Amy Hoffman, AMT 495: Applied Mathematics

Half a Channel Makes a Whole: Investigating the Role of  
Hemichannels in Lens Physiology

John Lang, Biology

Research in Scorpionate Ligands: Chiral Tris(pyrazolyl)methanes

Margo Weber, Chemistry

Uniformly Continuous Functions and Cauchy Sequences

Hongmei Lin, MAT 491: Research in Mathematics

11:30 a.m. – 12:30 p.m. (*each paper 15 minutes*)

The Maximum of Two Continuous Functions is Continuous

Robert Buyea, MAT 491: Research in Mathematics

The Mean Value Theorem and the Limit of a Derivative

Michael Filipski, MAT 491: Research in Mathematics

The Uniform Continuity of Composite Functions

Xin Dong, MAT 491: Research in Mathematics

Hormone Replacement Therapy and Postmenopausal Breast  
Cancer

Kayla Morrell, AMT 495: Applied Mathematics

## Humanities and Social Sciences: I

### Room 210

8:30 a.m. – 12:45 p.m.

*Presenting:*

8:30 a.m. – 9:30 a.m. (*each paper 15 minutes*)

Signing Away Self-Esteem

Angelina Messina, COM 450: Communication and Society

REAL Women Please

Nikki Styliades, COM 450: Communication and Society

Homogenization versus Cultural Adaptation: Effectiveness in  
Global Advertising and World Media and Consumer Culture  
Impacts

Bethany Nalezynski, COM 450: Communication and Society

The Crack Cocaine Epidemic: The Medias Perceptions and the  
War on Blacks from 1986-1989

Fabiola Castro, HIS 400: Senior Seminar

9:30 a.m. – 10:30 a.m. (*each paper 15 minutes*)

Globalization of Hip-Hop: How America's Most Controversial  
Musical Genre Has Evolved and Influenced the World

Joshua Beck-Jones, COM 450: Communication and Society

Globalization and Branding of American Sports

Thomas Kaufman, COM 450: Communication and Society

Decolonizing Hip Hop

Taven Gibson, COM 450: Communication and Society

Unmasking the Horizons of Literary Criticism in Ralph Waldo  
Emerson and Ezra Pound

Tamara Burross, ENG 499: Senior Honors Thesis

10:30 a.m. – 11:30 a.m. (*each paper 15 minutes*)

The Cartesian Bête-Machine Reconsidered: La Mettrie's (1709-  
1751) Solution

Troy Caruana, PHI 499: Philosophy Honors

Chocolate: A Sweet Delight with 500 Years of Slavery and  
Exploitation

Adza Beda, Communication

African American Athletes on the Auction Block

Oliver Colbert, COM 450: Communication and Society

Service-Learning on a National and Global Level

Michael Canfield, COM 450: Communication and Society

11:30 a.m. – 12:45 p.m. (*each paper 15 minutes*)

Chocolate: Why We Just Can't Have Enough Despite the Horror of Production

Adza Beda, COM 450: Communication and Society

The Good Fight: Comparing the Coverage of Hockey Violence in the U.S. and Canadian Media

Kyle Bukolt, COM 450: Communication and Society

Underground Urban Culture and the Socio-Economic Effects of Prohibition in New York City During the 1920s

Jontia Jackson, HIS 400: Senior Seminar

Cross the Invisible Barrier to Grant Street: Increasing Student, Faculty, and Staff Awareness and Engagement

Allison Hyman, Dietetics and Nutrition

The Global Fight for the Internet: Social Movements in a World of Mass Surveillance

William Watkins, COM 495: Social Movements & Internet 3.0

## Business, Computer Information Systems, Education, and Engineering Technology Room 210B

8:30 a.m. – 11:45 a.m.

*Presenting:*

8:30 a.m. – 9:30 a.m. (*each paper 15 minutes*)

What's Good About Computer Viruses?

Jasoswinee Behera, INT 689: Research Methods

3-D Imaging with Division III Athletes

Shawn Pitcher, Dietetics

Title IX: Then and Now

Cassandra Ball, Sociology

Teacher Efficacy: Influences from Gender and School Climate

Lasasha Oyo, English

9:30 a.m. – 10:30 a.m. (*each paper 15 minutes*)

Hunter's Curve in the 21st Century

Anthony DiMascio, INT 689: Research Design and Methodology

Learning Styles: Which One Are You?

Carolyn Alston, Early Childhood Education

How Are College Students Entering the Job Market Preparing Their Facebook Profile?

Sade McKenzie, Communications and Journalism

The Economic Value Added from a Baccalaureate Degree in Business Administration

Gibran Johnson, Connor Stachecki, and Matthew Wetzel, BUS 325: Human Resource Management

10:30 a.m. – 11:45 a.m. (*each paper 15 minutes*)

ISO 9000 Certification: Overcoming Challenges to Adoption and Implementation in the Small Organization

Arlin Venters, INT 689: Research Methods

The Viability of Having a Masters of Arts in Management Graduate Program

Britney Moore and Shaun Winter, BUS 430: Strategic Management

Is Accounting a Viable Concentration at Buffalo State?

Kelsey McArthur and Kevin Wagner, BUS 430: Strategic Management

Pipe Flange Assembly and Gasket Standards for a Persulfate Manufacturing Plant

Matthew Kalinowski, INT 689: Research Methods

Enterprise Resource Planning in a Manufacturing Setting: How Companies Succeed and Fail

Cristy Guay, INT 689: Research Methods

## Science, Mathematics, and Health: II

### Room 208

1:00 p.m. – 4:15 p.m.

*Presenting:*

1:00 p.m. – 2:00 p.m. (*each paper 15 minutes*)

Automorphic Equivalences: Or, How I Learned to Stop Worrying and Love Group Centers

Benjamin Briskey, MAT 491: Research in Mathematics

Global Population and Accelerated Climate Change

Rebecca Reczek, AMT 495: Applied Mathematics

Examining Integrals of Continuous Functions

James Burns, MAT 491: Research in Mathematics

A Curious Integral Equation

Emily Cloud, MAT 491: Research in Mathematics

2:00 p.m. – 3:00 p.m. (*each paper 15 minutes*)

A Curious Limit Equation

Joseph Will, MAT 491: Research in Mathematics

How Does the Rate of Unemployment and Active Police Enforcement Affect the Crime Rates in Buffalo, NY?

Lonisa Sledge, AMT 495: Applied Mathematics

Differentiable Functions Whose Zero Sets Have No Accumulation Points

Michael Ciraolo, MAT 491: Research in Mathematics

One Step, Two Step: A Two Step Power Ranking of the NBA

Kevin Esposito, AMT 495: Applied Mathematics

3:00 p.m. – 4:15 p.m. (*each paper 15 minutes*)

An Application of the Intermediate and Mean Value Theorems

Bethany Beckwith, MAT 491: Research in Mathematics

An Application of the Mean Value Theorem

John Driscoll, MAT 491: Research in Mathematics

Bounded Derivatives and Uniform Continuity  
Molly Reedy, MAT 491: Research in Mathematics

Cell Tower Placement and the Four Color Theorem  
Kayla Henry, AMT 495: Applied Mathematics

Computer Simulation Survey: A Hands-Off Approach to Solving  
Life's Problems  
Andrew Henning, AMT 495: Applied Mathematics

## **Humanities and Social Sciences: II**

### **Room 210**

1:00 p.m. – 4:45 p.m.

*Presenting:*

1:00 p.m. – 2:00 p.m. (*each talk 15 minutes*)  
South American Oil and American Capitalism  
Russell Luke, PSC 330: American Foreign Policy

Through the Looking Glass: Visitor Influences on the Welfare of  
Captive Western Lowland Gorillas  
Sarah Twardowski, ANT 322: Research Methods in Primatology

The Expansion of the American Presidency  
Daniel Darnley, Music Education and History

Engaging with the History of Comics and Reworking Frameworks  
Through Michael DeForge's Work  
Nyemh Ghareb, ENG 499: Independent Study

2:00 p.m. – 3:00 p.m. (*each talk 15 minutes*)  
From Tip Toes to Graceland: Isicathamiya Music in South Africa  
Kristen Smigielski, MUS 440: Ethnomusicology

Exploring the Creative Processes in Constructing a Recital Program  
Aaron Masters, Music

Music of the Rubik's Cube: A Mathematically Generated  
Composition  
James Cole, Music

The Invisible Woman: Exploring the Juárez Femicides within Desert  
Blood  
Sabrina Santos, English

3:00 p.m. – 4:00 p.m. (*each talk 15 minutes*)  
If I Had a Hammer I'd Hammer Out a Warning: A Look at Pete  
Seeger and American Political Folk Song  
Dyllan Wloch, MUS 440: Ethnomusicology

The Publishing Paradigm  
Jeffrey Pawlak, COM 450: Communication and Society

Joining the Black Parade: Shedding Light on a Dark Romance  
Brianna Webster, HON 400: Muriel A. Howard Honors  
Colloquium

The Effect of the Media's Eurocentric Figureheads on the Mental  
Health of Diverse Populations  
Brittney Singletary, COM 450: Communication and Society

4:00 p.m. – 4:45 p.m. (*each talk 15 minutes*)  
The Effects of Pornography and Sexual Objectification on Intimate  
Heterosexual Relationships between African Americans  
Sade McKenzie, COM 450: Communication and Society

Communicating with Kemet: A Study in Ancient Egyptian  
Expression Through Religion, Language and Dress  
Ariel Llewellyn, COM 499: Ancient Egyptian Communication

Escape from Within: The Conflict between Buddhism and  
Consumerism  
Amanda Matthews, COM 450: Communication and Society

## **Humanities and Social Sciences: III**

### **Room 210B**

1:00 p.m. – 4:45 p.m.

*Presenting:*

1:00 p.m. – 2:00 p.m. (*each talk 15 minutes*)  
A Disparity Problem: A Comparison between Developed and  
Developing Nations  
Amanda Darcangelo, PSC 204: Political Statistics

The Impact of Tourism on Developing Tourist Destinations:  
Consumer Culture Visits Paradise  
Shannon Polvino, COM 450: Communication and Society

During the 17th Century How Tobacco Cultivation Settled the  
Chesapeake Bay  
Ryan Samuels, HIS 400: Senior Seminar

Fear of Infanticide Among Captive Western Lowland Gorillas in the  
Buffalo Zoo  
Chelsea Dashnaw, ANT 322: Research Methods in Primatology

2:00 p.m. – 3:00 p.m. (*each talk 15 minutes*)  
Social Interaction Among a Captive Western Lowland Gorilla Group  
Zakiyyah Simmon, ANT 322: Research Methods in Primatology

From Family Men to Ferocious Beasts: The Transformative Power of  
the "Green Fairy" on Frenchmen in the Late Nineteenth Century  
Daniel Flynn, HIS 400: Senior Seminar

Gay Marriage Covered Under Due Process and Equal Protection?  
Leonel Parada, PSC 470: Senior Seminar

Hey! Take a Look in the Mirror: The Magnitude of Intrapersonal  
Skills in College  
Naomi Skarupinski, Individualized Studies

3:00 p.m. – 4:00 p.m. (*each talk 15 minutes*)  
Lesbian-Identity and the Male Gaze: A Study of Exotic Dancers  
Aileen McCluskey, Sociology

The Impact of Regulations on Cannabis Consumption  
Ohanes Kalayjian, Political Science

Motherly Love: Social Interactions between Mother and Infant in  
Western Lowland Gorillas and Saki Monkeys  
Erin Baccari, ANT 322: Research Methods in Primatology



Origins of the Muslim Brotherhood  
**Hakeem Jackson**, HON 400: Muriel A. Howard Honors  
Colloquium

4:00 p.m. – 4:45 p.m. (*each talk 15 minutes*)

Recidivism: Playing Detective  
**Seth Friedlander**, PSC 470: Senior Seminar

Population, Population Density, Access to Medical Care, and  
Suicide Rates: A Test of Durkheim's Theory with the County Data  
of New York State  
**Adonis Kernen**, Sociology

Mathematicalizing a "Mathematical" Definition of Creativity  
**Michael Filipski**, Mathematics

## Art Exhibits and Theater Flexible Theatre, Donald Savage Building

Why I Wear This Sweatshirt: Healing Sexual Abuse Through  
Theater

**Allison Monaco**, Theater Arts, **Deonna Dolac**, Theater Arts,  
**Julia Smith**, Theater Arts, **Kara Ashby**, Theater Arts, **Chelsea  
Correa**, Theater Arts, **Christna Metauro**, Theater Arts,  
**Brittany Wysocki**, Theater Arts, **Frances Hughes**, Theater Arts,  
**Shabar Rouse**, Theater Arts, **Molly Bader**, Theater Arts,  
**Rachel Wach**, Theater Arts, **Emma Siddon**, Theater Arts,  
**Trevor Dugan**, Advertising, and **Samantha Crystal**, Theater  
Arts  
11:00 a.m. – 12:15 p.m.

A Family Story  
**Samantha Roche**, HON 400: Muriel A. Howard Honors  
Colloquium  
12:15 p.m. – 1:15 p.m.

Revolve  
**Brittany Wysocki**, HON 400: Muriel A. Howard Honors  
Colloquium  
1:15 p.m. – 2:15 p.m.

In Sickness and in Health  
**Christina Metauro**, THA 340: Playwriting  
2:15 p.m. – 3:15 p.m.

## Mezzanine Level, E.H. Butler Library

*Presenters will be available Friday, May 2 from 5:00 p.m. –  
6:30 p.m. and Saturday, May 3 from 11:30 a.m. – 1:00 p.m.*

Painting Series: Journey of My Life as an Immigrant  
**Patricia O'Donnell**, Painting

Painting with Light  
**Nicholas Butler**, Photography

Photomicrography Cyanotypes  
**Katelyn Weidner**, Art Therapy and Speech-Language  
Pathology

Social Commentary: Anthropomorphic Illustration  
**Juliana Conidi**, HON 400: Muriel A. Howard Honors  
Colloquium

## Poster Sessions and Displays Butler Library Lobby

8:30 a.m. – 4:30 p.m.

**Session I: 8:30 a.m. – 9:30 a.m.**

*Presenting:*

The ABC's of RDA  
**Melyssa Peplowski**, HEW 411: Critical Issues in Health and  
Wellness

An Arpeggio a Day: Does it Keep the Doctor Away or Invite Him to  
Stay?  
**Kaitlin Reynolds**, HON 400: Muriel A. Howard Honors  
Colloquium

Back to the Roots: Traditional Influences in the Pop Music of  
Papua New Guinea  
**Erin Hoffman**, MUS 440: Ethnomusicology

Be Cool Go To Afterschool  
**Julian Cepeda**, HEW 411: Critical Issues in Health and Wellness

Blast-Related TBI and its Effects on Psychological States and  
Cognitive-Communicative Functions  
**Danyel Matthews**, SLP 497: Research

Career and Technical Education for Social Economic Justice  
**Akin Wilson**, SOC 389: Community Perspectives and  
Experiences

Collaboration between Buffalo State and PDS Partner Schools to  
Implement DASA Antibullying Curriculum  
**Katherine Knauf**, Childhood Education

Color Me America: One Nation Under Diversity  
**Jade Mills**, Sociology

Creating a Smile  
**Pamdora Drumgoole**, HEW 411: Critical Issues in Health and  
Wellness

Does the Media Influence Poor Body Image in Women?  
**Kaitlin Russo**, FTT 450: Issues in Apparel and Textile Industry

Driving Under the Influence of the Sandman  
**Kaitlyn Schena**, HEW 411: Critical Issues in Health and  
Wellness

The Effects of Grape Seed Extract on Alzheimer's Disease in Mice  
**Rachel Neilans** and **Leah Koepfel**, NFS 330: Seminar on  
Complementary and Alternative Nutrition

Environmental Racism and Its Impacts on the Refugee  
Population in Buffalo, New York  
**Sophie Herrman**, GEG 430: Senior Thesis





Fixing the Addiction

**Jonathan Forde**, HEW 411: Critical Issues in Health and Wellness

Getting 'Luded' at the Disco: Quaalude Domination of the 1960s and 1970s

**Sarah-Kay Sweetland**, HIS 400: Senior Seminar

Good Not Great: Scant Support for Glucosamine Supplementation in Knee Osteoarthritis

**Holly Layer** and **Stephanie Trifunovic**, NFS 330: Seminar on Complementary and Alternative Nutrition

The Handbook for Decreasing Children's Misconceptions when Learning to Tell Time

**Colisha Smith**, EDU 690: Master's Project

HIV/AIDS Beat the Odds: Be the Difference

**Brian Greene**, HEW 411: Critical Issues in Health and Wellness

How Does Instruction Take Place in a Dominican Republic Preschool?

**Sara Honsberger**, INE 390: International Education

How PDS Prepares Teachers for Urban Schools

**Madeline Otero**, Childhood Education and Mathematics 7-9

Management Strategies Advancing Preventive Health Engagement in the Collegiate Population

**Karley Austin**, **Christine Dunwoodie**, and **Juana Ramos**, INS 495: Research Project

Methods to Increase Parent Participation in Education

**Kaitlyn Gardner**, Childhood and Early Childhood Education

Scientific Inquiry: A New Approach to Teaching Science in Elementary School

**Nicole Pilarz**, EDU 312: The Teaching of Mathematics and Science in the Elementary School

Shibori with a Purpose

**Vanessa Williams**, Fashion Textile Design

Sketch and Stretch Strategy in Santiago, Chile

**Anna Morton**, Early Childhood and Childhood Education

Songs of Resistance: Palestine's Protest Music

**Sameerah Jabrhamdan**, MUS 440: Ethnomusicology

Teacher Candidate Growth Through Global Book Hour: From Student to Mentor

**Jasmine Davis**, Early Childhood and Childhood Education

Using the Social Studies and Reading Standards to Teach About Individual Development and Cultural Identity

**Natalia Kim**, EDU 690: Master's Project

Why Nursing is the Mother and Baby's Breast Choice

**Sarah Jacobs-Ferderbar**, HEW 411: Critical Issues in Health and Wellness

## Session II: 9:30 a.m. – 10:30 a.m.

*Presenting:*

Addressing the Epidemic of Unhealthy Kids

**Katelyn Sullivan**, HEW 411: Critical Issues in Health and Wellness

Clean Up Your Sleep

**Devon Mussachio**, HEW 411: Critical Issues in Health and Wellness

Does Music Therapy Have an Effect on Children in the Autism Spectrum?

**Marissa O'Connor**, Music and Psychology

Does Phrase-Formatted Text Improve Reading Comprehension in College Students?

**Solina Krickovich**, Speech-Language Pathology

Early Literacy in Two Montessori Schools

**Leah White**, INE 390: International Education

Encouraging Men to Become Elementary School Teachers

**Richard Hoey**, Childhood Education

Essiac Tea for Cancer Treatment

**Sarah Boyer** and **Jennifer Carland**, NFS 330: Seminar on Complementary and Alternative Nutrition

Fashion with Me

**Ching Sum Tang**, FTT 451: Senior Project

Fat or Fit

**Michael Kiripolsky**, HEW 411: Critical Issues in Health and Wellness

Female Genital Mutliation

**Katherine Lee**, ANT 305: Peoples of Africa

Get Sleep: A Healthy Sweep!

**Michael Burgard**, HEW 411: Critical Issues in Health and Wellness

Global Freedom Fighters: Using Multicultural Biographies to Teach About Global Human Rights

**Erin Cappello**, EDU 690: Master's Project

Glycerol Hyperhydration and Endurance Exercise

**Stephanie Busse**, NFS 330: Seminar on Complementary and Alternative Nutrition

How Music Impacts Communication Development

**Michelle Valevich**, HON 400: Muriel A. Howard Honors Colloquium

Hungary for Music? Exploring Hungarian Folksong

**Sarah Tripi**, MUS 440: Ethnomusicology

Integrating Technology into Writer's Workshops

**Nichole Stefanski**, EDU 690: Master's Project

Keeping Teacher Candidates Connected Through Technology

**Danielle Jarosz**, Childhood and Early Childhood Education

Lackawanna: A Yemeni American Suburb

**Kaitlyn Parrino**, Social Studies Education

Large But Not in Charge

**Roy Vandemortel**, HEW 411: Critical Issues in Health and Wellness

The Link between Work and Play in the Classroom Setting:

Comparing Classrooms in Chile and the United States

**Micaila Herd**, Early Childhood and Childhood Education



Potential Use of Probiotics in the Treatment of Irritable Bowel Syndrome

**Katie Shapiro**, NFS 330: Seminar on Complementary and Alternative Nutrition

Propaganda, Metal and Glass: Disseminating Ideas via Enameled Jewelry

**Robin Connell**, Metals/Jewelry

The Role of Herbs in Anti-Aging

**Alaina Hoschke**, NFS 330: Seminar on Complementary and Alternative Nutrition

Teaching Idioms to English Language Learners: Is There a Single Best Strategy?

**Jaimie Harris**, Speech-Language Pathology

Telomeres, Telomerase and Anti-Aging Therapy

**Kimberly Chwojdak**, NFS 330: Seminar on Complementary and Alternative Nutrition

Tobacco: The New Influence

**Michael Smith**, HEW 411: Critical Issues in Health and Wellness

Waking Up on the Wrong Side of the Bed

**Paige Foley**, HEW 411: Critical Issues in Health and Wellness

Woosah (Stress-Less)

**Kathryn Smith**, HEW 411: Critical Issues in Health and Wellness

Working Memory in Typically Developing Adolescents

**Hayley Payne**, SLP 497: Research

Youth Participatory Action Research in Elementary and Middle School Education

**Phylicia Brown**, EDU 690: Master's Project

### **Session III: 10:30 a.m. – 11:30 a.m.**

#### *Presenting:*

The Apple Does Not Fall Far from the Tree

**Melissa Resetarits**, HEW 411: Critical Issues in Health and Wellness

Armor or Cage? Mythology Inspired Sculpture

**Rachel Krzyzanowski**, FAR 343: Advanced Sculpture

Breast Cancer Mortality: The Fear, the Hope, and the Resolution

**Coumba Sy**, HEW 411: Critical Issues in Health and Wellness

Chelation Therapy and Heart Health

**Lauren Turkovitz** and **Kaitlyn Brodzinski**, NFS 330: Seminar on Complementary and Alternative Nutrition

Classical and Multicultural Approaches to Education

**Rachael Saathoff**, English Education

Critical Mathematics Education + Digital Social Media = Engaged Adolescents

**Cathy Amdur**, Mathematics Education

Do Students Benefit from Having Recess Every Ninety Minutes?

**Ellen Erman**, INE 390: International Education

Dramatic Play Areas

**Courtney Hartman**, EDU 690: Master's Project

Effect of Red Wine and Resveratrol on Aging And Longevity

**Marla Guarino** and **Paola Zambrano**, NFS 330: Seminar on Complementary and Alternative Nutrition

Explored and Re-imagined: Fire Puppets

**Stephanie Giordano**, FAR 342: Intermediate Sculpture II

The Gender Gap Stops Here! Promoting Women in Philosophy on Campus

**Sarah Caputi**, Philosophy

Greater Than Me, Globally!

**Anna Morton**, Early Childhood and Childhood Education

The History of the Blues: Tracing the Roots of the Blues Singer

**Lindsey Holland**, MUS 440: Ethnomusicology

Lackawanna's Yemeni Community: Bound Together by Culture, by Religion, by Interdependence - and by Soccer

**Leif Reigstad**, HON 400: Muriel A. Howard Honors Colloquium

Living Young, Wild, and Free

**Ryan Weber**, HEW 411: Critical Issues in Health and Wellness

Muscle Miracle or Dangerous Myth? Steroids and Body Building in Men in the 1960s -1970s

**Bianca Roberts**, HIS 400: Senior Seminar

Music is Moving: And That's the Gospel Truth

**Kelly Bourque**, MUS 440: Ethnomusicology

The Needs for Vitamin D: Beyond Calcium Absorption

**Courtney Bonvissuto**, NFS 330: Seminar on Complementary and Alternative Nutrition

Nico-Teen

**William Lekki**, HEW 411: Critical Issues in Health and Wellness

Olympic Hockey and the Media

**Brayton Wilson**, HON 400: Muriel A. Howard Honors Colloquium

Shedding the Light on the Silent Killer

**Babatunde Ajisafe**, HEW 411: Critical Issues in Health and Wellness

Skip the Antidepressants: Yoga and Massage Therapy Can Reduce Prenatal Depression And Prematurity

**Maggie Hartig**, NFS 330: Seminar on Complementary and Alternative Nutrition

Slightly Out of Tune: The Birth of the Bossa Nova

**Jared Tinkham**, MUS 440: Ethnomusicology

Snow Spotting in the Polar Vortex and I Survived

**Justin Blicharski**, GEG 495: Campus Snow Spotter

So You Think You Catalan Dance: Catalan Folk Music in Classical Repertoire

**Brian Geary**, MUS 440: Ethnomusicology

Spatial and Temporal Changes of Parking Lot Land Use at Buffalo State Applying Unmanned Helicopter Remote Sensing

**Jiazhen Zhang**, Geography



The Success of Office Workers Depends on Office Design  
**Brittany Schirmer**, PSC 470: Senior Seminar

Tobacco is Wacko  
**Shawn Ford**, HEW 411: Critical Issues in Health and Wellness

The Weight of the Obsession  
**Matthew DiPalma**, HEW 411: Critical Issues in Health and Wellness

Why Would I Drink That?  
**Myia Cheatom** and **Brandon Quintanilla-Hernandez**, UNC 189: Information & Engineering Technology

Working Hard or Hardly Working?  
**Jeffrey Rodrigue**, HEW 411: Critical Issues in Health and Wellness

Writing Our HEA Story  
**Joanna Stein**, Higher Education Administration and **Anthony Nicosia**, Higher Education Administration

## **Session IV: 11:30 a.m. – 12:30 p.m.**

### *Presenting:*

Are You Lying on Your Death Bed?  
**Miranda Moore**, HEW 411: Critical Issues in Health and Wellness

Anxiety and Avoidance Behavior in Rats as a Result of Exposure to Cat Dander  
**Kathryn Przybysz**, Psychology and **Jennifer Hacker**, Psychology

Behavioral Aggression: Sending a Healthy Message  
**Charles Pacholski**, HON 400: Muriel A. Howard Honors Colloquium

Bengal Space Launch: Ballooning to 100,000' Above the Earth  
**Edward Bryant** and **Mike Zoubi**, PHY 111: University Physics I

A Biotelemetric Study of Habitat Use and Behavior of Map Turtles in the Upper Niagara River  
**Brian Haas**, Biology and **Jeremy Henderson**, Biology

Bloom: An Exhibition of Work in Sculpture  
**Kyrstin Wojda**, FAR 440: Senior Studio in Sculpture

Buffalo State's Baja Vehicle  
**Anthony Bruno**, **Duane Lewis**, **Mike DiRisio**, **Todd Owen**, **Thomas Rudz**, **Bobby Stone**, **Jason Curry**, **Mike Daigler**, and **Chris Holzmman**, ENT 422: Machine Design II

Characteristics and Behavior of a Two-Hour Oscillation in the Buffalo River  
**Ashley Perez**, Earth Sciences

Chrysalis: The Merging of Creative Directions  
**Rachel Hamerski**, FTT 451: Senior Project

Climate Change Prompts Upward Migration of Ant Hybrid Zone  
**Victoria DeStefano**, Biology

Codon Bias in Ginger Plants: Why Are Ginger Cysteine Proteases Different From Other Plant Proteases?  
**Rasheed Bailey**, BIO 303: Genetics

The Culture within a Child Care Facility: Daily Life Inside a Day-Care Center  
**Lindsey Bryant**, ANT 498: Honors Research

Daphnia's Nutrient Allocation in Soft Water-High Food Conditions  
**Hulgrid Gourgue**, Biology

Evaluation of Materials for Use in a Shell and Tube Heat Exchanger  
**Joshua Juryniec**, **Ahmed Nagaya**, and **Gorden Schubert**, ENT 422: Machine Design II

Exploration into Casting  
**Patrick Anhalt**, Sculpture

Garlic on Dutch Copper Plate Paintings from the 16th to 17th Centuries  
**Nicole Schmidt**, Art History

Gender is the Most Influential Determinant of Food Choice Among College and University Adults  
**Bianca Cornelius**, PSC 470: Senior Seminar

Genetically Modified Organisms and Possible Health Risks  
**Lisa Pasnik** and **Melissa Kopf**, NFS 330: Seminar on Complementary and Alternative Nutrition

Inevitable  
**Monica Nickles**, FAR 342: Intermediate Sculpture II

Maximal Cliques in Intersection Graphs of Quasi-Homothetic Trapezoids  
**Joshua Terhaar**, Mathematics

Measuring Photosynthetic Light Responses of Mosses  
**John Lang**, Biology

On Computing Distance in the Curve Complex  
**Kayla Morrell**, Applied Mathematics

Resin in a Ceramic World  
**Rachelyn Noworyta**, Ceramics

Saving the Lives of Our Youth!  
**Kireshia Breland**, HEW 411: Critical Issues in Health and Wellness

S-Adenosyl Methionine Dietary Supplementation  
**Christine Sprehe**, NFS 330: Seminar on Complementary and Alternative Nutrition

The Secret Ingredient: Riding Your Bicycle  
**Andrea Hurley**, HEW 411: Critical Issues in Health and Wellness

Sulfated Polysaccharides as Dietary Supplement  
**Monica Tedesco**, NFS 330: Seminar on Complementary and Alternative Nutrition

Tea: Drink to Good Health  
**Stephanie Kahn**, NFS 330: Seminar on Complementary and Alternative Nutrition

Tracking Health: Impact of Substance Abuse Prevention Activities  
**Joelle Del Monte**, Higher Education and Student Affairs  
Administration, **Bianca Cornelius**, Dietetics, **Jenna Del Bove**,  
Sociology, **Jenny Nunn-Stanley**, Sociology, **Racquel Praino**,  
Health and Wellness, and **April Benitez**, Health and Wellness

Undergraduate Learning Assistants in a Hybrid Economics  
Course

**Kayla Pyc**, **Siobhan Johnson**, **Heather Dennis**, **Noor Aref**,  
**Joseph Mantione**, **Eric Sauerzopf**, **Amanda Nassar**,  
**Charlene Moultrup**, and **Michelle Meer**, ECO 101: The  
Economic System

Want a Beer? Let's Ask the Women!

**Raquel Tavares de Lima**, SOC 312: Women in Society

## **Session V: 12:30 p.m. – 1:30 p.m.**

*Presenting:*

The Acculturation of Burmese Refugees to Buffalo Society  
**Brittney Singletary**, Journalism

Amputation and Subsequent Change in Bone Tissue  
**Erin Baccari**, Anthropology and Psychology

Blood Coffee: The Socio-Economic Struggle of the Indigenous  
Coffee Farmers of Guatemala, 1970-1985  
**Gabriel Maldonado**, HIS 400: Senior Seminar

Bridging the Gap: Role of Extracellular Loop Cysteine Residues in  
Gap Junctions  
**Brandon Kelly**, Biotechnology and **Dave Carstensen**,  
Biotechnology

Centrifugal Compressors: Inlet Throttle Valve  
**Mason Roalsvig**, **Chris Dacey**, **Brian Skibicki**, **Anna Alfonso**,  
and **Ron Roma**, ENT 422: Machine Design II

Change in Antibiotic Resistance and Plasmid Content in  
*Escherichia coli* in a Waste Water Treatment Facility Before and  
After Chlorination  
**Nicole Ashman**, BIO 498: Honors Research

Civic Engagement: Partisanship versus Altruism in the Context of  
Rational Choice  
**Dan Benson**, PSC 470: Senior Seminar

College Students and ADHD Medication  
**Tessa Bechtold**, PSY 499: Independent Study

Constructing Fantasies  
**Megan Cavanaugh**, FAR 440: Senior Studio in Sculpture

Development of an RT-qPCR Assay for ER Chaperone GRP170  
Gene Expression in *Caenorhabditis elegans*  
**Anthony D'Auria**, Biology

The Disaster at Love Canal: The Rise in Female Activism During  
the Late-Twentieth Century  
**Danielle Smerda**, HIS 300: Methods of Research and Writing

Do Quagga Mussels (*Dreissena rostriformis bugensis*) Found  
in Shallow and Deep Environments Differ in Their Wet to Dry  
Weight Ratios?  
**Keith Pawlowski**, Great Lakes Ecosystem Science

Drum Trainer

**Marc Gschwend**, **Ryan Palmer**, **Kais Omar**, and **Abid**  
**Sarvantov**, ENT 465: Senior Design

The Economics of Education: The Management of Learning  
**Heather Dennis**, ECO 101: The Economics System

Eye Tracker and Art Perception: Do Art Students See Better?  
**Kathryn Przybysz**, Psychology and **Sonille Liburd**, Psychology

A Green Industrial Thumb: How Plant Design Inspires Modern  
Day Factories  
**Joshua Kelly** and **Tasha Wright**, UNC 189: Information &  
Engineering Technology

Helicopter Parenting and Adjustment to College  
**Veronica Darlow**, PSY 499: Independent Study

Hirth Attachment Coupling  
**Justin Thompson**, **Chris McClellan**, **Austin Dibble**, and **Dan**  
**Unkrich**, ENT 422: Machine Design II

How and Why do Ethnic Minorities Vote  
**Milagros Bonifacio**, PSC 470: Senior Seminar

Hybrid Principles of Macroeconomics Course  
**Samantha Stauch**, **Anthony Appiani**, **Maya Foose**,  
**Esther Ekong**, and **Ryan Winegarde**, ECO 201: Principles of  
Macroeconomics

KRAFTWERK: A Study in Fiber Optics Fabric  
**Carrisa Welch**, Media Production

Line: The Distance between Form and Space  
**Christopher Walsh**, FAR 342: Intermediate Sculpture II

Living Situation and Academic Success  
**Hannah Bronstein** and **Sarah Lippert**, PSY 499: Independent  
Study

Personality Predictors of Driver Personal Space Preference  
**Abby Criswell**, Psychology

Raman Microscope Detection of Drug and Drug Metabolites from  
Fingerprints  
**Megan Niesyty**, HON 400: Muriel A. Howard Honors  
Colloquium

Survival Sterilization System  
**Vincent Macaione**, **Franco Tallarico**, **Michael Marvin**, and  
**Michael Rudik**, ENT 465: Senior Design

Take Me Away: The Illustrated Books  
**David Fox**, DES 499: Independent Study

Tea: Traveling Plant from 1848 to 1862  
**Constance Fimbel**, HIS 400: Senior Seminar

Theater and Children: His Design, Her Design, Our Design  
**Brittany Randall**, THA 495: Theater and Children

The Things "Little Guy" Can Do  
**Christopher Jordonne**, UNC 189: Information & Engineering  
Technology

Working Methods: The Howard D. Beach Photography Studio of  
Gelatin Dry Plate Negatives  
**Noelle Wiedemer**, Museum Studies



## Session VI: 1:30 p.m. – 2:30 p.m.

### Presenting:

Acoustic Doppler Current Profilers in the Buffalo River:  
Processing the Data to Support the Study of River  
Hydrodynamics

**Matthew Kraft**, Geology

Analysis of Detox Pills Composition: Effects on the Human  
Body

**Carl Desir** and **Nalyja Wolfe**, CHE 406: Analytical  
Toxicology

Ancient Artisans: Totem Poles of the Northwest Coast

**Nicollette Winiewicz**, ANT 400: Ancient Materials

Artistic Ingredients: Exploring Mixed Media and Ceramic  
Sculpture

**Suzanne Molnar Goad**, Ceramics

The Aztec Empire and Their Post-Contact Legacy

**Joseph Reed**, ANT 498: Honors Research

Can NATO Survive?

**Christopher Garozzo**, PSC 330: American Foreign Policy

Chase and Repoussé

**Destiny Perez**, Fiber/Weaving and Metals/Jewelry

Chemical Illumination: Exploring the Inclusion of Glow  
Pigments in Vitreous Enamel

**Robin Connell**, Metals/Jewelry

Consociation, Federation, and the Prevention of Ethnic  
Conflict

**Megan Connelly**, PSC 204: Political Statistics

Does Second-Home Building with Canopy Intact Mitigate the  
Deleterious Effects of Forest Fragmentation?

**Michael Olejniczak**, Biology

Dyeing for a Cleaner Environment

**Mary Ann Tran**, FTT 450: Issues in Apparel and Textile  
Industry

Drug Use on College Campuses

**Leslie Kamara**, UNC 189: Information & Engineering  
Technology

Effects of Conjugated Linoleic Acid on Body Fat Reduction

**Stephanie Lomas** and **Tea Gavran**, NFS 330: Seminar on  
Complementary and Alternative Nutrition

Expression of the Chaperones GRP170a and GRP170b  
During the Unfolded Protein Response of *Caenorhabditis*  
*elegans*

**Antonio Louis Rockwell**, Biology

External Factors that Contribute to Low Body Self-Esteem in  
Female Adolescent College Students

**Riannon Banas**, **Christine Obringer**, and **Kayla**  
**Lanzalaco**, Psychology Club Research Team

If These Gardens Could Talk: Evidence from Jerusalem  
Gardens That Point Us Toward Jesus Christ

**Leah Daily**, HON 400: Muriel A. Howard Honors  
Colloquium

An Investigation of Causes and Characteristics of Water  
Elevation Changes in the Buffalo River, Buffalo NY

**Kari Clayton**, Earth Sciences

The Man with the Flaming Table

**Adam Ianni**, DES 351: Wood—Junior Studio

Making the Connection between Research and Application

**Christopher Miller**, **Amanda Schiedel**, **Adam Milton**,  
and members of PSY 367: Organizational Behavior

Materials and Techniques in the Painting Traditions of Italy  
from Antiquity through the Renaissance

**Shawn O'Rourke**, Painting

Media Exposure, Cynicism and Political Participation: Does  
Knowing More Suggest You Do Less

**Sean O'Connor**, PSC 470: Senior Seminar

Object Relations

**Megan Cavanaugh**, FAR 343: Advanced Sculpture

The Perception of an Epidemic: The Effect of the Perceived  
Crack Epidemic on Los Angeles Crime and Violence between  
1982-1992

**Zachery Hyland**, HIS 400: Senior Seminar

The Physiological Role of ER Chaperone GRP170 in  
*Caenorhabditis elegans*

**Yuan Yuan Li**, Biology

A Phylogenetic and Evolutionary Analysis of the TAS2R38  
Gene

**Dominic Scarpine**, BIO 495: Research

The Relationship between Student Loans and Loan Attitudes  
and Locus of Control

**Meghan Batt**, PSY 488: Internship

Social Media and Academic Outcomes

**Emma Marioles**, PSY 499: Independent Study

Study of Mineral Patterns in Wildcat "Granite," Northern  
New Hampshire: Meta-sedimentary Rock or Igneous  
Intrusive?

**Sherman Wisor IV**, Geology

Textural and 3-D Mapping of Melt Structures in Pinkham  
Notch Migmatite, New Hampshire

**Alexandra Fletch**, Geology

What Does the Fox Say? An Investigation of the Behavior of  
the Lower Fox River

**Brandon Franks**, Physics

Who's Your Daddy? A Parentage Analysis of Buffalo Zoo  
Eastern Hellbenders

**John Lang**, Biology

## Session VII: 2:30 p.m. – 3:30 p.m.

### Presenting:

American-Russian Relations: Warming Interaction Amidst  
Lingering Cold War Dogma

**Graeme Eagles**, PSC 330: American Foreign Policy

ArcGIS-Based Accessibility Study to Define Ash Deposit Sampling Locations for Ash Distribution Mapping

**Chelsea Tavormina**, Geology

Big Data, Bigger Solutions

**Terrence Wilson**, Computer Information Systems

Cheers! Prohibition in Buffalo New York: 1920 - 1933

**Troy Climenhaga**, HIS 400: Senior Seminar

Consumer Level Mobile RFID Inventory Manager

**Brandon Kapral, David Melonson, Brandon Simoncelli,**  
and **Kyle Pilecki**, ENT 465: Senior Design

Cosa Italia ha da Offrire: What Italy has to Offer

**Ivena Ford, Britton Buczkowski, and Tarrah DeVito**, HTR 318: Cultural Tourism

The Differences between Honors and Non-Honors Students

**Emily Marshall**, PSY 499: Independent Study

Do You Know Your Energy Drink?

**Owen Ruppert and Cody Lippincott**, CHE 406: Analytical Toxicology

Dynamic Stability Testing for Childrens' Electric Powered Vehicles

**Tom O'Connor, Ryan Wilkins, and Joe Edel**, ENT 422: Machine Design II

The Effect of Gene Flow on the Rates of Evolution of Drosophila

**Lauren Grunzweig**, Biology

Energy is the New Foreign Policy

**Kyle Newman**, PSC 470: Senior Seminar

Green for Green: Lucrative Careers in Sustainability

**Maxy Copeland**, BUS 378: Business Professional Practice

How to Clean Dirty Data

**Jeff Oyo**, Economics

Investigating the Essential Oils in Shampoo

**Colleen Martin, Laura Stone, and Margo Weber**, CHE 406: Analytical Toxicology

Kayaking in Chemicals?

**Samantha Stone, Kelly Whelan, and Alex Crumlish**, GES 460: Environmental Field Methods and Analysis

Memory and Multitasking

**Jennifer Hacker**, Psychology

Nicotine: Chemical Delivery from Cigarettes versus Electronic Cigarette

**Osayomwonbor Algbedo, Anthony Luta, and Rebecca Piskor**, CHE 406: Analytical Toxicology

Olin-Dupont: Contamination into Gill Creek and the Niagara River

**Zach Adams and Andrew Migliazzo**, GES 460: Environmental Field Methods and Analysis

Personality and Facebook: What Motivates Social Media Use

**Taylor Chavanne**, HON 400: Muriel A. Howard Honors Colloquium

Protect the Dojo

**Myles Gordon**, UNC 189: Information & Engineering Technology

Raising a Criminal: Patterns in the Early Life of Serial Killers

**Avairy Menze**, FOR 122: Scientific Criminal Evidence Analysis

A Robot That Plays at Last: Robot P.A.L.

**Tanya Campbell and Susan Lin**, UNC 189: Information & Engineering Technology

Sigmund Freud: Personal Cocaine Use 1884-1896

**Holly Schenk**, HIS 400: Senior Seminar

A Taste of Italy

**Samantha Wik, Amanda Furlani, Danielle Kane, Jacklyn Kertzie, and Alexandra Esmond**, HTR 318: Cultural Tourism

Tobacco and Slavery: The Evolution of the Chesapeake Bay Region, 1600-1750

**Tracy Callahan**, HIS 400: Senior Seminar

Tonawanda Creek Surface Water: Genesee County

**Jenni Maurer and Jessalyn Payne**, GES 460: Environmental Field Methods and Analysis

Traditional Dyes and Weaving Techniques of the Nasca

**Kristin Hatch**, ANT 400: Ancient Materials

Using App Inventor to Create 2D Video Games

**Jeffrey Lau and Danso Frimpong**, UNC 189: Information & Engineering Technology

What are the Factors that Predict the Effectiveness of a Governmental Agency?

**Kalina Vaneva**, PSC 470: Senior Seminar

Work and Family Orientation and its Influence on Perceived Success

**Christopher Miller**, Industrial/ Organizational Psychology

## **Session VIII: 3:30 p.m. – 4:30 p.m.**

*Presenting:*

Applied Engineering Challenge

**Andrew Sabey, Brandon Favicchia, Scott Blais, and Aliou Jeng**, ENT 422: Machine Design II

Application of Sediment Trend Analysis in the Examination of Sediment Transport Dynamics of Missisquoi Bay

**Matthew Kraft**, Geology

Characterization of Failing Pens

**James Martin**, HON 400: Muriel A. Howard Honors Colloquium

Chemistry in the Classroom: An Experimental Approach to Chemical Education

**Nathan Busch**, HON 400: Muriel A. Howard Honors Colloquium

Does the Legalization of Medical Marijuana Affect Society?

**Michael Murphy**, PSC 470: Senior Seminar

Dual Power Source

**Tanya Campbell, Edgerton Hinds, and Marcus Samerson,** ENT 465: Senior Design

Eating with Your Eyes: A Photographic Essay of Italian Cuisine  
**Amanda Matthews,** HTR 318: Cultural Tourism

Educational Outcomes and Institutional Arrangements: Public, Private, Home and Charter Schools Battle for Supremacy  
**Suzanne Jacobs,** PSC 470: Senior Seminar

European Influence on the Culture of Plains Indian Tribes and Their Lasting Effects  
**Joseph Reed,** ANT 499: Spanish-Indigenous Contact

An Exploratory Analysis on Socio-Economic Outcomes of Land Use and Sprawl  
**Sarah Caputi,** PLN 430: Senior Thesis

Health Risk: Heavy Metals in Water in Organic versus Non-Organic Farm Runoff  
**Meghan Hospedales,** GES 460: Environmental Field Methods and Analysis

How Healthy is Your Major?  
**Mariah Brown,** HON 400: Muriel A. Howard Honors Colloquium

Human Trafficking: Distinguishing Destination Countries  
**Lynise James,** PSC 470: Senior Seminar

Impacts of Salinization on Soil Microbial Respiration  
**Raven Baxter-Christian and Rebecca Jo Johnson,** BIO 495: Soil Microbial Respiration

Implementation of a Computer Management Maintenance System  
**Trevor Riley and Corey Harris,** ENT 422: Machine Design II

Interpersonal Space on the Road: A Driver Space Study  
**Richmond Wills,** Psychology, **Brendan Roman,** Psychology, and **Kristen Corbran,** Psychology

Language and Identity: Exploring How Language Affects the Construction of Self-Identity in Bilingual Individuals  
**Rachael Engert,** HON 400: Muriel A. Howard Honors Colloquium

Petrographic Analysis of Fabrics and Porphyroblasts in the Wissahickon Schist, Philadelphia, Pennsylvania  
**Kasandra Barten,** Geology and **Melissa Bennett,** Earth Science

Rapid Evolution Favors Invasion by Isolated Species  
**Victoria De Stefano,** Biology

The Role of Connexin31 Mutations in Skin Disease and Deafness  
**Linxuan Wu,** Bio 314: Advanced Cell Biology

Scajaquada System Contamination: Sneaking in?  
**Timothy Thrift,** GES 460: Environmental Field Methods and Analysis

Single-Camera Versus Multi-Camera: Which is the Better Sitcom Format?  
**Nick Ilardi,** HON 400: Muriel A. Howard Honors Colloquium

Stan's Medieval Quest

**Cordell Samuel and Bethany Person,** UNC 189: Information & Engineering Technology

Stop Controlling Me; I'm Not a Robot...Oh Wait I Am!  
**Jamal Thomas and Jazmin Black,** UNC 189: Information & Engineering Technology

Suppression of Opium in China and China's Causing of the Opium Wars 1839-1860  
**Sarah Bearor,** HIS 400: Senior Seminar

Urban Dumping Site: Scajaquada Creek  
**Vanessa Pereira, Spencer Leet, and Jason Threet,** GES 460: Environmental Field Methods and Analysis

Voter Turnout Motivated by Media  
**Candace Baker,** PSC 470: Senior Seminar

Website and App: Ghosts Random Class Generator  
**Andrew Elbaneh,** UNC 189: Information & Engineering Technology

## **Adza Beda**, Communication Studies

Faculty Mentor: Professor Michael Niman, Communication

Abstract Title: **Chocolate: A Sweet Delight with 500 Years of Slavery and Exploitation**

Adza Beda is a Communication Studies Major, an All College Honors Student, and a McNair Scholar who will graduate in 2014. After graduating, Adza plans to return to Belize and complete an internship promoting education in sustainable agroforestry. She plans to pursue graduate work and continue her research examining Fair Trade cacao farms in the Ivory Coast.

Adza spent four weeks living on and working at the Maya Mountain Research Farm located in the remote Toledo District of Southern Belize. Adza conducted ethnographic fieldwork studying cacao culture, cacao production and the Kekchi and Mopan Maya communities that farm cacao. This work has given her an intimate understanding of the joys and hardships involved in this tropical agriculture, as well as the role cacao plays in Kekchi and Mopan life. This will prepare her to both conduct comparative fieldwork studying cacao production in other areas and to better understand the role of cacao in culture.



## **Nicholas Butler**, Photography

Faculty Mentor: Professor James Sylvia, Fine Arts

Abstract Title: **Painting with Light**

Nicholas Butler is graduating with a degree in Photography in May 2014. After graduation, Nicholas plans to seek an internship in Photography and pursue a career in Photography.

For his project, Nicholas explored a process whereby the photographer uses a hand held source to apply light to a subject, selectively lighting those areas he wishes to illuminate rather than using the standard overall lighting technique. This process takes place during a long exposure in a very dark place. Nicholas completed a series of portraits of people and still life studies, working both in the studio and out of doors to bring out not only a likeness of the individual, but also a sense of mystery and drama.



## **Robin Connell**, Metals/Jewelry

Faculty Mentor: Professor Tara Nahabetian, Design

Abstract Title: **Propaganda, Metal and Glass: Disseminating Ideas via Enameled Jewelry**

Robin Connell will graduate with a B.F.A. in Metals/Jewelry in May 2015. Upon graduation she plans to start her own business as a professional jewelry designer. In addition to creating her own business she plans to attend graduate school to pursue an M.F.A. degree.

Robin attended a two-day workshop held by Yvonne Villanueva, in Toronto, Ontario, Canada on the basics of enameling on metal. Upon her return to Buffalo, she experimented with the traditional techniques of enameling and its connection to historical propaganda. Through her investigation, Robin has created a contemporary twist by combining historical enamel techniques with current methods of media propaganda to produce a series of Champeve brooches. She plans to exhibit her work in national juried exhibitions.





### **Abby Criswell**, Psychology

Faculty Mentor: Professor Dwight Hennessy, Psychology

Abstract Title: **Personality Predictors of Driver Personal Space Preference**

Abby Criswell is a Psychology major and will graduate in May 2014. After graduation, her plans include pursuing a graduate degree in Psychology.

Abby's study involved determination of personal factors that impact driver personal space preference. Participants viewed two video clips (one through the windshield of a car approaching another car and the other through a rear view mirror of the car being approached) and stopped each video to indicate their preferred spacing when they drive. Abby found that front driver space was smaller for fatigued drivers and that rear driver space was greater for high hazard monitors. Abby presented these findings at the Eastern Psychological Association convention in 2014.



### **Daniel Darnley**, History and Music Education

Faculty Mentor: Professor Jean Richardson, History and Social Studies Education

Abstract Title: **The Expansion of the American Presidency**

Daniel Darnley is pursuing a dual degree earning a Bachelor of Music in Music Education and B.A. in History. After graduating, he plans a career in education.

Dan's research consisted of delving into secondary literature on the expansion of the presidency under the tenure of Thomas Jefferson, Andrew Jackson, Abraham Lincoln and Franklin Roosevelt. His primary research was conducted at the Library of Congress, Washington, D.C. The findings stemming from this research will form the basis of a manuscript for submission to a peer-reviewed journal.



### **Victoria DeStefano**, Biology

Faculty Mentor: Professor Robert Warren, Biology

Abstract Title: **Climate Change Prompts Upward Migration of Ant Hybrid Zone**

Victoria DeStefano is a Biology major and will graduate in May 2014. After graduating, she plans to pursue a graduate degree in Ecology.

De Stefano used ant samples collected along elevation transects in the Southern Appalachian Mountains to measure the physical traits, such as coloring and body shape, of cold- and warm-adapted ant species. She asked whether upwardly migrating warm-adapted species replaced or interbred with the high elevation cold-adapted species. The unique coloring and morphology of mid-elevation ants suggest that the two species interbreed and produce unique hybrid offspring. She presented these results at the Rochester Academy of Sciences Fall Scientific Paper Session. She is currently working on a project examining rapid evolution in invasive species based on Lake Erie phytoplankton. She will be a co-author on publications generated from both projects.



### **Heather Hoffmann**, Speech-Language Pathology

Faculty Mentor: Professor Constance Dean Qualls, Speech-Language Pathology

Abstract Title: **Preparation of Speech-Language Pathologists for Working with Older Adults**

Heather Hoffman is a Speech-Language Pathology major. She will graduate in May 2014, after which she plans to pursue her graduate degree. After becoming a speech-language pathologist, Heather hopes to get a doctorate in Communication Sciences and Disorders and eventually become a researcher and university professor.

Heather conducted pilot research investigating second year, graduate students' interest and comfort level in working with older adults with speech, language, hearing, and swallowing disorders. She examined the participants' attitudes toward and perceptions about aging and older adults. The results of this study have implications for how academic training programs in speech-language pathology address aging in the curriculum, particularly because of the "greying of America."



### **Ohanes Kalayjian**, Political Science

Faculty Mentor: Professor Mayra Velez Serrano, Political Science

Abstract Title: **The Impact of Regulations on Cannabis Consumption**

Ohanes is a political science major, minoring in philosophy. He will graduate in May 2014. Ohanes has been admitted to law school starting in Fall 2014.

Ohanes' research was inspired by the recent public debate regarding the benefits or negative consequences of regulation and involved an examination of the legal regulations and drug consumption. Ohanes created an original dataset classifying states' drug legislations in order from the most restrictive to the most liberal. He looked into how changes in these regulations affected the use of cannabis per state. His findings were surprising and pointed to the multidimensional character of usage. He expects to continue working on his research and present his findings at the New York State Political Science Annual Conference.



### **Solina Krickovich**, Speech-Language Pathology

Faculty Mentor: Professor Deborah Insalaco, Speech-Language Pathology

Abstract Title: **Does Phrase-Formatted Text Improve Reading Comprehension in College Students?**

Solina Krickovich is pursuing a B.S. in speech-language pathology. She is graduating in May 2014 with plans to earn a Master's degree in speech-language pathology.

Solina's research investigated the efficacy of spacing reading passages according to their phrase boundaries to improve comprehension. She examined the connection between good comprehension and syntactic proficiency. While some of her results contradict earlier research, they confirm the importance of syntactic skill. Solina plans to present her findings at the American Speech-Language-Hearing Association conference.



### **John Lang**, Biology

Faculty Mentor: Professor Amy McMillan, Biology

Abstract Title: **Who's Your Daddy? A Parentage Analysis of Buffalo Zoo Eastern Hellbenders**

John Lang is a Biology major and will graduate with a B.A. in May 2014. After graduating, he plans to remain at Buffalo State to pursue his M.A.

John genotyped hellbender salamanders raised in the Buffalo Zoo for reintroduction to the wild. His work is being used to understand the parentage of these young animals since very little is known about hellbender reproductive strategies. His data also is being used to help the New York Department of Environmental Conservation determine where these animals should be released. He attended the bi-annual Hellbender Symposium in Chattanooga and participated in fieldwork, including releasing zoo animals and assisting a graduate student with tracking released animals with radio telemetry. His work is being prepared for publication.



### **Aaron Masters**, Music (Piano)

Faculty Mentor: Professor Marcella Branagan, Music

Abstract Title: **Exploring the Creative Processes in Constructing a Recital Program**

Aaron Master is a music major with a concentration in piano and in May 2014 will graduate with a B.A. in Music. He has completed his auditions at various schools and plans to pursue a Master in Piano Performance. His ultimate goal is to do advanced study for a Doctorate in Piano Performance and Literature that will enable him to teach in a university or conservatory.

Aaron attended a week-long masterclass at Adamant Music School in Vermont where he studied with the internationally-known pianist, John O'Connor. He traveled to New York to take a coaching session with Dr. Ana Maria Bottazzi, a well-known pedagogue and pianist. Both experiences widened his knowledge on how best to select the works for his auditions and senior recital. The results of his research have given him enough material to consider publishing an article that would offer guidance to other pianists in the process of putting together a concert program. In March 2014, Aaron performed in Weill Recital Hall at Carnegie Hall as part of Adamants 73rd Anniversary Concert, performing two of the works from his audition program.



### **Aileen McCluskey**, Sociology

Faculty Mentor: Professor Staci Newmahr, Sociology

Abstract Title: **Lesbian-Identity and the Male Gaze: A Study of Exotic Dancers**

Aileen McCluskey is Sociology major and graduated with honors in December 2013. Her plans include pursuing a Ph.D. in Sociology.

Aileen conducted a qualitative research study of lesbian identity as related to sexual objectification and the male gaze. To that end, she conducted in-depth interviews, completed the transcription and qualitative coding of the interviews, and used established methods to analyze the data. Aileen presented her research findings at the Society for the Study of Symbolic Interaction in New York City in August 2013.



### **Christopher Miller**, Psychology

Faculty Mentor: Professor Robert Delprino, Psychology

Abstract Title: **Work and Family Orientation and its Influence on Perceived Success**

Christopher Miller is completing his B.S. degree in Psychology with a concentration in Industrial/Organizational Psychology and a minor in Spanish. He plans to pursue graduate studies in Industrial/Organizational Psychology with the goal of becoming a general practitioner in the field.

Christopher's research focused on students' ability to balance work, family, and academics. His research examines how students balance these areas of their lives compared to non-student working adults and the influence on their perceived success and satisfaction. He presented his research findings at the 2014 meeting of the Eastern Psychological Association in Boston, MA.



### **Megan Niesyty**, Forensic Chemistry

Faculty Mentor: Professor Jinseok Heo, Chemistry

Abstract Title: **Raman Microscope Detection of Drug and Drug Metabolites from Fingerprints**

Megan Niesyty is a Forensic Chemistry major expecting to graduate in May 2015. After graduating, she plans to obtain a position or pursue her master degree in the forensic science field.

Megan's research involved detecting a drug and its metabolite from a fingerprint using Raman microscope. Her main focus was to find a method of enhancing the weak Raman signals of analyte on the surface. She examined several different types of Au nanostructures and Au and Ag nanoparticles that could enhance Raman signal significantly. Using a Raman dye she concluded that the surface coated with Au nanoparticles showed the strongest signal-enhancing effect. Her results will be presented in an American Chemical Society regional conference in 2014.



### **Patricia O'Donnell**, Painting

Faculty Mentor: Professor Lin Xia Jiang, Fine Arts

Abstract Title: **Painting Series: Journey of My Life as an Immigrant**

Patricia O'Donnell is a B.F.A. Painting major and will graduate in December 2014. She plans to continue at the graduate level and hopes to establish a studio and teach painting.

Patricia's project consisted of a series of eight paintings that explored and examined her life of struggle, hope inspired by humanity, and integration as an immigrant with a diverse ethnical and cultural background. The paintings are informed by personal experiences and her subjects include her immediate family members. Technically, Patricia researched and explored several modes and styles of expressions and techniques including contemporary realism, surrealism, historical Mayan cultural and artistic elements to best express her experiences and insights.





### **Shawn O'Rourke**, Painting

Faculty Mentor: Professor Philip Ogle, Fine Arts

Abstract Title: **Materials and Techniques in the Painting Traditions of Italy from Antiquity through the Renaissance**

Shawn O'Rourke is a painting major and is graduating in May 2014. After graduation he plans to pursue a career as a visual artist. He will continue his education at the graduate level incorporating travel and research in his work.

Shawn's research took him to the conservation workshop in San Gemini, Italy. There he had the opportunity to acquire traditional painting skills and techniques utilized from Antiquity through the Renaissance. He also traveled to Siena and met with Professor Franca Marini to work and discuss artists and techniques unique to Siena. Shawn focused on Fresco, Tempera, and Gilding techniques adding a contemporary twist to create a body of artwork. Shawn represented Buffalo State at the SUNY-wide "Innovative Exploration Forum: Undergraduate Research" held in the Legislative Office Building in Albany on April 1, 2014.



### **Kaitlyn Parrino**, History and Social Studies Education

Faculty Mentor: Professor Susan Randaccio, History and Social Studies Education

Abstract Title: **Lackawanna: A Yemeni American Suburb**

Kaitlyn Parrino graduated in December 2013 with a B.S. in History and Social Studies Education. She intends to earn a Ph.D. in history.

Kaitlyn researched the Yemeni immigrant population in Lackawanna by examining census data to determine years of immigration, size of community, employment patterns, and education patterns. Her research included conducting oral histories of residents of Lackawanna that are members of this tightly knit community centered on Ridge Road and the Alhuda Mosque. These interviews proved to be an invaluable window into the history of this immigrant community and into the current social, economic, religious, and employment trends of this vibrant community.



### **Destiny Perez**, Fiber/Weaving and Metals/Jewelry

Faculty Mentor: Professor Stephen Saracino, Design

Abstract Title: **Chase and Repoussé**

Destiny Perez is a dual major in Fiber/Weaving and Metals/Jewelry. She will graduate with a B.F.A. in both areas after which she plans on entering graduate school to pursue an M.F.A. in Metalsmithing. Destiny ultimately plans to teach and open her own studio.

Destiny traveled to Rome, Siena, Florence and other sites in Italy to begin her investigation. She observed masters practicing a range of the techniques especially those involved with chase and repoussé. This travel gave her a fundamental understanding of the technical and aesthetic information necessary to fabricate objects using these ancient Metalsmithing techniques. Employing images of architecture and landscapes photographed in her travels in Italy, she was able to build a reference bank to begin her work upon her return.



### **Shelby Rarick**, Biology

Faculty Mentor: Professor I. Martha Skerrett, Biology

Abstract Title: **Properties of Cx31, a Human Gap Junction Protein Expressed in Xenopus Oocytes**

Shelby Rarick will graduate in May 2014 with a major in Biology and minors in Chemistry and German Studies. Shelby is also participating in the Honors Research Program in Biology. After graduation, she plans to attend medical or graduate school.

Shelby's research focused on cell communication, particularly the expression of connexins in *Xenopus* oocytes. She demonstrated that Cx31 can be successfully expressed in *Xenopus* oocytes, a system that allows rapid analysis of gap junctions, laying groundwork for analysis of properties that lead to disease in individuals affected by mutations in Cx31. Her work will lead to a better understanding of the role of Cx31 in keratinocyte physiology, and the properties that are altered by mutations associated with skin disease.



### **Rachael Saathoff**, English Education

Faculty Mentor: Professor Jason Grinnell, Philosophy

Abstract Title: **Classical and Multicultural Approaches to Education**

Rachael Saathoff is an English Education major with a minor in Philosophy. She will graduate with a B.S. in May 2014, after which she plans to attend graduate school. Eventually, she would like to teach professionally either at the high school or college level, as well as continue her academic research.

Rachael researched the history, philosophy, and pedagogy of two separate educational approaches: classical and multicultural. She also examined the history of philosophy of education. Her work focused on each approach's thoughts on the role of the teacher, the nature of learning, and views of child development. Rachael has begun working on a presentation and paper version of her findings, and plans to present or publish the results of her research. Rachael represented Buffalo State at the SUNY-wide "Innovative Exploration Forum: Undergraduate Research" held in the Legislative Office Building in Albany on April 1, 2014.



### **Chelsea Tavormina**, Geology

Faculty Mentor: Professor Bettina Martinez-Hackert, Earth Sciences

Abstract Title: **ArcGIS-Based Accessibility Study to Define Ash Deposit Sampling Locations for Ash Distribution Mapping**

Chelsea Tavormina is Geology major and graduated in December 2013. She plans to continue her studies in volcanology at the graduate level and to obtain a position related to volcanic risk analysis.

Chelsea's project applied the use of ArcGIS software to develop a model that was the basis for creating an Accessibility Map. This map ranks the region surrounding the Santa Ana Volcano, El Salvador from least to optimal with respect to the sampling of volcano deposits. The map was produced in the lab and future work is planned to ground truth the map based on fieldwork in El Salvador. Chelsea presented her research findings at two meetings: the Middle States Division of the Association of American Geographers meeting held at Buffalo State in October 2013 and at the Geological Society of America meeting in Denver, Colorado in October 2013.



### **Margo Ellyn Weber**, Chemistry

Faculty Mentor: Professor M. Scott Goodman, Chemistry

Abstract Title: **Research in Scorpionate Ligands: Chiral Tris(pyrazolyl)methanes**

Margo Weber is a Chemistry major with a concentration in Biochemistry. She will graduate in May 2014 with a B.S. in Chemistry and a minor in French. After graduation, Margo plans to pursue her educational goal of becoming a pediatric oncologist.

Margo's research consisted of laboratory work in organic and inorganic chemistry, specifically the synthesis and characterization of chiral ligands and their metal complexes. As a result of her work, Margo has synthesized several new compounds and unambiguously confirmed their identity using a combination of techniques, including NMR spectroscopy and X-ray crystallography. These compounds have potential to be used someday in data storage devices or as catalysts. Margo has presented her research results at the National Meeting of American Chemical Society in Dallas, TX in March.



### **Katelyn Weidner**, Speech-Language Pathology and Art Therapy

Faculty Mentor: Professor Gary Pettibone, Biology

Abstract Title: **Photomicrography Cyanotypes**

Katelyn Weidner is earning dual majors in Speech-Language Pathology and Art Therapy and will graduate with a B.S. degree in May, 2016. After graduation, Katelyn plans to attend graduate school and continue practicing her art.

Katelyn used a microscope capable of magnifying up to 1000X to take photographs of human cells and cellular parts. These images served as source material for negatives to expose onto fabric and paper treated with photographic chemicals. Katelyn experimented with exposure times, chemical regimens, and fabric types in order to determine optimal conditions needed to produce quality images. The results were graphic depictions of the original photographs captured on the material in the art form known as Cyanotypes. Her work showcases a collaborative effort between the disciplines of science and art.



### **Sherman Wisor IV**, Geology

Faculty Mentor: Professor Gary Solar, Earth Sciences and Science Education

Abstract Title: **Study of Mineral Patterns in Wildcat "Granite," Northern New Hampshire: Meta-sedimentary Rock or Igneous Intrusive?**

Sherman Wisor IV graduated in December 2013. He plans to begin graduate school in geology starting in the Fall 2014.

Sherman's research consisted of both field and laboratory work on rocks in the Mount Washington area of New Hampshire. He performed two weeks field mapping in the Pinkham Notch area followed by nearly two months of laboratory work on collected data and specimens. He produced a geological map of the area of study and made thin sections of rock specimens for microanalysis. Sherman presented his results at the Northeastern Section of the Geological Society of America in Lancaster, Pennsylvania in March 2014. Sherman represented Buffalo State at the SUNY-wide "Innovative Exploration Forum: Undergraduate Research" held in the Legislative Office Building in Albany on April 1, 2014.



## Arts

### Armor or Cage? Mythology Inspired Sculpture

**Rachel Krzyzanowski**, FAR 343: Advanced Sculpture  
Faculty Mentor: Professor Elena Lourenco, Fine Arts

I would like to explore how body adornment can be used as armor while still being used as a cage, through the creation of sculptural forms that embody the idea of strength and weakness that cultural traditions give people. Through this grant I would like to further research the origins of these traditions, and how to put these ideas into my sculpture. I would like my sculptures to show the spirit of the Kayan women. I feel that the method of casting metal embodies strength in sculpture. The Kayan women show strength, through the ability to uphold the expectations of their culture. These women are able to endure the slow manipulation of their bodies while still being able to continue their everyday lives. This means evoking emotions from the viewer that I imagine the Kayan women to have, as well as the ones I have when I read about their unusual life. I would like to show the contradictions of emotions that the neck-rings bring, to these women and the rest of their villages. I am trying to show pain and strength, and how they go hand in hand.

**Presentation Type and Session:** Poster III

### Artistic Ingredients: Exploring Mixed Media and Ceramic Sculpture

**Suzanne Molnar Goad**, Ceramics  
Faculty Mentor: Professor Colleen Toledano, Design

In this project I am exploring a variety of different materials that will be combined with ceramic figurative elements to create mixed media sculptures. I am experimenting with components such as concrete, wood and casting resin to form bases and environments for the ceramic pieces to exist in. Additionally I am seeking surface techniques that can be applied to the ceramics to create a cohesive bridge between the clay and the other elements, as well as identifying materials that convey realistic flesh like qualities; such as colored wax, and thinly layered latex. This investigation into mixed media will culminate in a gallery showing of the work I have created during this 2014 spring semester. I will be documenting the different aspects of these various processes along the way, and taking pictures to capture the development in action. This research information will be used to present examples of the results and how they are being integrated into the final pieces. It is my intent that through this project I will be able to find the most united substances to capture the visceral qualities that I hope to express, and marry them seamlessly with the underlying currents and themes that purvey within my body of work.

**Presentation Type and Session:** Poster VI

### Back to the Roots: Traditional Influences in the Pop Music of Papua New Guinea

**Erin Hoffman**, MUS 440: Ethnomusicology  
Faculty Mentor: Professor Carolyn Guzski, Music

To natives of the island of Papua New Guinea, music is more than a collection of pitches and rhythms: it is a connection between humans and the spiritual world. The Papuan believe that spirit beings, known as “tambaran” or “masalai,” are given life through the production of sound, and their traditional texts relate stories of ancestral spirits and this mythical world. An example of this deep connection can be heard in the popular music of George Mamua Telek, a native of the village of Raluana. Telek combines traditional texts, rhythms, and forms with contemporary instruments and grooves in his music. Telek’s performance of the song “Adebe” (Butterfly), a poem about butterflies as symbols of ancestral spirits, is an excellent example of native cultural heritage blended with Western pop influence. The musical setting uses traditional text, sung in the native language of the Tolai people, accompanied by pop music instruments. Although Western popular culture has been widely accepted in Papua New Guinea, traditional language, text, rhythm, and form is still heard in the music of George Telek. The connection between music and the spiritual world is a vital artistic component that Telek’s music represents perfectly.

**Presentation Type and Session:** Poster I

### Bloom: An Exhibition of Work in Sculpture

**Kyrstin Wojda**, FAR 440: Senior Studio in Sculpture  
Faculty Mentor: Professor Kenneth Payne, Sculpture

This study will explore emotional bridges, temporality, and responsiveness through textual analysis, sculptural installation and video production. The viewer will be encouraged to be an active participant in the developmental aspects of the work through a series of open-ended prompts demonstrated in words or phrases that are cast in forms of metal and plaster. These fabrications will bring an ambiguity to the installation proposing a question between the viewer and the work. The anticipated outcome of this exhibition is to create a design sensibility that will speak to social issues such as violence and abuse within human experience. The installation will be composed using the integration of clean, orderly lines of a child’s jungle gym in a playground setting against life-size figure sculptures that portray a seemingly speculative intent, built in plaster and mixed media, the sculpture pieces will be created to portray an embodiment of unrefined truth suggested by the cast words and phrases.

**Presentation Type and Session:** Poster IV



## Chase and Repoussé

**Destiny Perez**, Fiber/Weaving and Metals/Jewelry  
Faculty Mentor: Professor Stephen Saracino, Design

My jewelry pieces are very organic and textural. As a jeweler I want my work to have different kinds of layers playing textures off colors with imagery that is referenced based drawn from my experiences and technical knowledge base I always try to broaden. My ideation centers around the influences I gain from adding new technical information and my resolve to travel to add to this reference base both technical and aesthetic. I want the viewer to see and feel the surface layers in the jewelry I make. This summer my work was heavily influenced by a trip I made to Italy. My inspirations included references taken from Italian architecture and landscapes that I saw during my trip and the sketching I did of the places I visited while there. I included these ideas into this body of work that centers on my recent research in chase and repoussé that influenced how I designed and fabricated my pieces. During my time in Italy I used the bus and trains often and observed the landscape throughout my trip. The first piece that I made was a pin that had many layers of textures that referenced the hills of Sienna. The second piece that I made was a cuff bracelet where I also made layers to resemble the landscape and included a heat patina for color. The third piece was a necklace that is in several pieces with different layers of texture and color with each piece held together with a handmade chain. The patina that I used was a chemical that made the copper blue and black. Each piece when placed together formed a series that relate to each other and include references to the Italian landscape both in texture and color.

**Presentation Type and Session:** Poster VI

## Chemical Illumination: Exploring the Inclusion of Glow Pigments in Vitreous Enamel

**Robin Connell**, Metals/Jewelry  
Faculty Mentor: Professor Tara Nahabetian, Design

I am presenting preliminary findings from my research into the inclusion of glow powder with vitreous enamel. Enameling is an ancient technique of fusing glass to metal surfaces, while including glow powders is a new advancement in this field. These non-toxic strontium based pigments allow for a whole new exploration of light and color in enameling. My presentation will exhibit initial findings on the effectiveness of the powders and how well they handle being fired at high temperatures in a kiln. The glow pigments come in seven shades, each with different active glow times. While red and orange glow powder only remain active for fifteen minutes, other colors such as green can glow for fifteen hours. This provides the opportunity to explore concepts of decay and loss in a fairly stable medium. I will present samples of the various glow powders, both in an unfired state and as it appears fired onto an enamel substrate. Along with the physical samples I will also present information on

the materials and the process used to create them. From these initial tests I will then create a large necklace.

**Presentation Type and Session:** Poster IV

## Constructing Fantasies

**Megan Cavanaugh**, FAR 440: Senior Studio in Sculpture  
Faculty Mentor: Professor Kenneth Payne, Fine Arts

In my work, I am often drawn to pop icons because of the symbolic language it speaks to a common material culture. The manipulation of imagery evokes certain emotions through the universal experience. In my research, I want to explore the root of my narratives through form and color. Instead of the reoccurring boisterous cultural objects, I want to investigate the intimate elements of wood and metal. Wood has an inherent quality of warmth. I want to utilize this nature because my work often seeps into personal memory. On the other spectrum, I want to learn more about the process of metal. Metal can have a natural cold feeling. There are piles of industrial parts rusting and decomposing away in junkyards. I want to explore the possibilities of repurposing, cutting, painting, and all around transforming scrap metal. I would like to make work that seems to defy the visual logic of its building by composing traditional skill sets with my own nontraditional sculptural practice.

**Presentation Type and Session:** Poster V

## Does Music Therapy Have an Effect on Children in the Autism Spectrum?

**Marissa O'Connor**, Music and Psychology  
Faculty Mentor: Professor Carolyn Guzski, Music

The goal of this research project is to answer the questions: How does music affect children in the autism spectrum, and what clinical applications are utilized in music therapy to treat this condition? My methodology was compromised of three components: (1) In-depth scholarly investigation of Autism Spectrum Disorder (ASD) and the discipline of music therapy; (2) fieldwork observations conducted with a certified Music Therapist interacting with children affected by ASD; and (3) participation at the AMTA Annual Conference of Music Therapists to acquire contemporary knowledge of the multiple perspectives and techniques currently employed to serve diverse populations in the field. My findings present insights into possible effects and efficacy of clinical applications of music therapy to individuals affected by Autism Spectrum Disorder.

**Presentation Type and Session:** Poster II

## Eating with Your Eyes: A Photographic Essay of Italian Cuisine

**Amanda Matthews**, HTR 318: Cultural Tourism  
Faculty Mentor: Professor Kathleen O'Brien, Hospitality and Tourism

Food is a substantial part of culture in any country. Italian

cuisine is diverse due to its roots in Greek, Roman, and Byzantine foods, together with a touch of the Orient. It reflects the surrounding geography and climate with different regions of Italy developing their own specialties. Northern Italy, mountainous in many parts, is notable for the alpine cheeses of the Valle d'Aosta, the pesto of Liguria, and, in Piedmont, the Alba truffle. A ten-day study abroad experience in the Piedmont region, especially the Provinces of Cuneo and Turin, was the inspiration for a photographic essay of Italian food. This essay examines selected foods of the Piedmont and Tuscany regions and the producers of the foods. One of the central findings in this study is that there is a strong appreciation for “slow food” and artisanal food in the Piedmont and Tuscany regions. Other findings support that the food culture goes beyond customs, traditions, and social practices of inhabitants of the regions. My presentation will illustrate how food is an integral part of the emotions of small business owners and how it is used as a strategy for attracting tourism.

**Presentation Type and Session:** Poster VIII

## Exploration into Casting

**Patrick Anhalt**, Sculpture

Faculty Mentor: Professor Elena Lourenco, Fine Arts

As an artist I find myself drawn to materials that come from nature. The way things form, grow and how textures develop can keep me entertained as long as it is in front of me. The contrast between the natural world and the man-made one we live in. Materials that are softer tend to be made into more organic objects emulating nature, while materials that are hard (like sheet steel or other metals) are made into simple geometric forms. Cast metals are unique because they can be soft or extremely hard and unyielding depending if it's in its liquid form or natural state. I am discovering that the more I work with the materials though, the more simple and geometric the work starts to become. Avoiding altering the material in ways that it may not already naturally have. It almost feels as if you hide the beauty of it when you work against the qualities it possesses. This might be partly due to my observation of the world around us. There is a sense of respect there, because once you start to add to it, you also begin to take away what makes it unique.

**Presentation Type and Session:** Poster IV

## Explored and Re-imagined: Fire Puppets

**Stephanie Giordano**, FAR 342: Intermediate Sculpture II

Faculty Mentor: Professor Elena Lourenco, Sculpture

I have been a fire performer for two and a half years and have, until now, been performing primarily in a dance oriented way using ignitable props such as poi, staffs, and fire-fans. As I've continued to train and to delve into the art, my intrigue has begun to shift and expand into the direction of incorporating fire as a medium for narrative and for sculptural applications. In the interest of embarking on this exploration I have come to design and have begun to construct an adapted “fire puppet” - a sort of ignitable

marionette to be used to expand on the narrative potential for fire performance. Mine is certainly not the first fire puppet to be built or used, but the design which I am working on is meant to give the performer more control and a broader range of options visually than have been previously made available due to short-comings inherent in the design of the prop. I am presenting a completed version of my puppet, its components, and the armature I've designed to control it for an interactive demonstration of function and use for performance, in addition to showing footage of puppets being used in an ignited state.

**Presentation Type and Session:** Poster III

## Exploring the Creative Processes in Constructing a Recital Program

**Aaron Masters**, Music

Faculty Mentor: Professor Marcella Branagan, Music

My research project involved exploring the creative processes that occur when a pianist chooses repertoire for a solo recital—in this case, for auditions I will take in January and February of 2014 as a requirement for acceptance into a graduate program in piano performance and also for my senior recital to be given in the Spring. How does a pianist know which works to include? What issues have to be considered in making these choices? Over the summer I experienced a few hurdles requiring some thoughtful decision-making that yielded productive results. However, in the final analysis, after looking into many of these issues, my personal desires played a large part. Looking at this from an historical perspective the solo piano recital was in evidence as early as the 18<sup>th</sup> century with performances by the blind pianist Maria Theresa von Paradis and Marie Bigot. Later contributions came in the 19<sup>th</sup> century from Franz Liszt and Clara Schumann. Consequently, a pianist today can include works from the Baroque through the Romantic and Impressionistic periods to the Contemporary literature—a span of nearly three hundred years. However, with such variety each work should be performed in a correct stylistic manner—i.e. a Bach Toccata conveying a different sound and touch from that of a Chopin Scherzo. In conclusion, was I successful in selecting a program to meet my goal? The broad overview of this creative process—the changes, deliberations, and final choices—will be the focus of this presentation.

**Presentation Type and Session:** Oral — Humanities and Social Sciences: II

## A Family Story

**Samantha Roche**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor Shaun McLaughlin, Theater and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Through the play I am writing, ‘A Family Story’, I intend to show what happens when somebody pursues an act of vengeance out of grief. The play deals with themes of familial attachment,

loss, relationships, and revenge. I wanted to explore the path of a person who makes the wrong choice, but not for the wrong reasons. Initially, I had only wanted to explore the concept of “vengeance”, but through the process of planning and writing, it has grown to encompass all of the aforementioned traits as well. In the opening scene of the play, the audience is introduced to the subject of the story: the O’Meally family. When Madeline, the youngest member of the family, is murdered, the family is shattered. When Madeline’s sister, Julianne, finds a list of suspects in the case of her sister’s murder, she is determined to track down her sister’s killer at whatever cost. I will present a staged reading of my play at the SRCC, along with two other students in a series of shows. We will each be hosting talkbacks after our performances in order to further explore whatever topics our works have stirred up amongst our audiences. It is my hope that the audience discussions will include, but not be limited to: the morals of the characters in the play, vigilantism, and grief. I would like them to wonder about Julianne’s course of actions and whether or not they are justifiable. I would like them to learn a little more about themselves after a viewing of my play.

**Presentation Type:** Arts, Flexible Theatre, Donald Savage Building, Saturday May 3, 12:15 p.m. – 1:15 p.m.

## From Tip Toes to Graceland: Isicathamiya Music in South Africa

**Kristen Smigielski**, MUS 440: Ethnomusicology  
Faculty Mentor: Professor Carolyn Guzski, Music

My research explores the importance of Isicathamiya (is-cot-a-ME-ya) in South African history. This combination of male a cappella singing, dance, and dress has played a vital role in preserving native Zulu culture. Beginning in the early 1900s, industrialization forced Zulu men to migrate to urban centers such as Durban and Johannesburg in search of work to avoid extreme poverty. Away from their families, the Zulu men saw their traditions in dance and dress forbidden by officials, because it was perceived as a threat. The men found a way to keep their culture alive within the imposed strictures, however, by forging a combination of music, dance, and dress in a vibrant new tradition called Isicathamiya. Paul Simon recorded his celebrated Graceland album with an Isicathamiya group called Ladysmith Black Mambazo. Its success launched a world tour that allowed the group to share Isicathamiya across the world. Isicathamiya now has an international presence, and I hope to show my audience that it is still an important part of the growing history of South Africa, as well as a beautiful style of artistic expression today.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

## Garlic on Dutch Copper Plate Paintings from the 16th to 17th Centuries

**Nicole Schmidt**, Art History  
Faculty Mentors: Professor Patrick Ravines, Art Conservation and Professor Corina Rogge, Art Conservation

Artists’ treatises from the 16th and 17th centuries recommend application of crushed garlic or garlic juice onto copper plates as a preliminary treatment before painting. While art historians often cite these treatises, no analytical work has positively identified garlic in oil paintings on copper or established what role garlic may have played. The objective of this research is twofold: to determine a suitable method for identifying garlic within a painting and to investigate possible reasons behind its use. Mockups of copper oil paintings were made utilizing pure pigments in linseed oil and either aged naturally or subjected to one month of artificial aging at 80 C and 60 % RH. Fourier transform infrared spectroscopy (FTIR), staining, and pyrolysis gas chromatography mass spectrometry (py-GC-MS) were used to test for the presence of garlic. Preliminary results show that FTIR and staining of cross sections are ineffective, but py-GC-MS analysis reveals the presence of 2,5-dimethylfuran, a carbohydrate marker compound present in fresh garlic juice, in fresh or aged garlic juice on copper, and in the natural and artificially aged paint samples on garlic ground. We propose that this species could serve as a marker for garlic in historic copper plate paintings. No differences in paint adhesion were noted, but we observed differences in pigment stability between these samples. Smalt, a pigment sensitive to oxidative discoloration, shows a lesser amount of discoloration with the garlic ground layer, suggesting that one reason for the use of garlic may have been to protect sensitive pigments.

**Presentation Type and Session:** Poster IV

## The History of the Blues: Tracing the Roots of the Blues Singer

**Lindsey Holland**, MUS 440: Ethnomusicology  
Faculty Mentor: Professor Carolyn Guzski, Music

As a vocalist who sings music rooted in jazz and the blues, I asked myself: “Where did it all come from?” Many people, including myself, assumed it emerged from historic plantation song of the Deep South, or had never really given it much thought at all. In my research, I’ve found that the birth of the Blues represents a much more complicated puzzle. There is no single path that can be used to find the direct origin of the Blues. By studying the fundamentals of the African song, including its instrumentation, techniques and significance, I discovered how these artistic values were influential in the creation of the Blues genre. I found that Blues itself was created as a reaction to the environment that the singer experienced. I hope to shed light on additional questions of interpretation: How then did African roots influence the genre? And how much has the Blues really evolved from authentic African music into the commercial Blues song that we are familiar with today?

**Presentation Type and Session:** Poster III

## Hungary for Music? Exploring Hungarian Folksong

**Sarah Tripi**, MUS 440: Ethnomusicology

Faculty Mentor: Professor Carolyn Guzski, Music

"Folk music is the sum total of all the tunes in use in a human community." -Béla Bartók. There is so much more to music than what we are commonly exposed to in Western culture! Most of the music and instruments we know of actually originated in diverse world cultures. In this presentation, I will explore the specific culture of Hungarian folk music and its musical significance. I will introduce this style with two of the greatest and most famous ethnomusicologists, Béla Bartók and Zoltán Kodály, both of whom studied Hungarian folksong and musical life extensively. Hungarian folksongs are derived from the pentatonic scale composed of five tones. I will explore the melodic material of the folksongs, as well as the more traditional Hungarian instruments, to uncover the specific roles and influences that Bartók and Kodály had in Hungary. How can we relate to this music today? Kodály devised a famous methodology of teaching music using folksong, and it remains one of the four principal methods used by music educators across the United States. Many folk tunes that we learned as children are actually Hungarian! I hope to expose my audience to a full experience of Hungarian folksong and leave them with new music to explore.

**Presentation Type and Session:** Poster II

## If I Had a Hammer I'd Hammer Out a Warning: A Look at Pete Seeger and American Political Folk Song

**Dyllan Wloch**, MUS 440: Ethnomusicology

Faculty Mentor: Professor Carolyn Guzski, Music

My research will focus on the music of the late great folk singer Pete Seeger and his illustrious career on the political and folk music scenes. I will look in depth into the effect his music had, not only on current artists, but also the American public as a whole. I will draw on a variety of primary sources, including Seeger's own autobiography and the documentary film "Wasn't That a Time?" featuring Seeger and his fellow bandmates in the folk quartet The Weavers. It was with this group that Seeger was truly thrust into the American spotlight in both positive and negative ways, as The Weavers fame during the 1950s coincided with the national fear of communism. Seeger was subjected to blacklisting and placed under congressional investigation for his political activism and support of communist beliefs. I hope to show my audience the impact that a single voice, with a true commitment to one's beliefs and a drive to change the world, can have on a society with nothing but a banjo and the right song.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

## In Sickness and in Health

**Christina Metauro**, THA 340: Playwriting

Faculty Mentor: Professor Shaun McLaughlin, Theater and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

This presentation will exhibit my journey into a realm of the theater world I have not yet traveled—the art of playwriting. While I have read plays, seen plays, and acted in plays, I have yet to try my hand at writing them. I plan to present a reading of my play, which portrays the mental effects of an eating disorder in addition to the physical effects. This will be shown through the metaphor of being in an abusive relationship. Both victims feel a sense of being trapped, yet they stay out of fear or because they benefit from the relationship in some way. Although my story is fictional, I will be doing much research on the psychology of eating disorder patients, abusive relationships victims and how these volatile situations can manifest into maladies such as anxiety and depression. This play will touch on themes of manipulation, control, self-image and distorted perceptions. As well as researching aspects of the play's content, this project will allow me to acquire the creative skills to be able to turn it into a script. Through a weekly journal and multiple drafts, I will learn how to craft dialogue, fully develop characters and a structure a plot that will keep an audience's attention.

**Presentation Type:** Arts, Flexible Theatre, Donald Savage Building, Saturday May 3, 2:15 p.m. – 3:15 p.m.

## Inevitable

**Monica Nickles**, FAR 342: Intermediate Sculpture II

Faculty Mentor: Professor Elena Lourenco, Fine Arts

I plan to research the process of decay. I think that there are certain everyday things that people feel uncomfortable about, but in actuality they should be embraced and honored. They are apart of life and are inevitable. I think that if these things were brought out into the open, people could be more comfortable or see the beauty in this matter. Humans have the misfortune of living their whole lives knowing that we are going to die. No matter what we create, or how much money we make, or how many children we have, we will die. Our own decomposition is a scary thought because it means that we have to part with the control we strived for. When it comes down to it our bodies are just like an organism on this earth like all others, made to rot, to decay. If we work towards accepting, not denying, our inevitable decomposition, we can begin to see it as something beautiful. Decomposition is beautiful because it shows us how important life is. It reminds us how precious it is. It brings to light that we are not immortal and that life is a gift that we should cherish. It is this parallel of death and decay with endurance and beauty that I am hoping to communicate through my work. I would like to show the process of decay through the use of different materials and the use of raw emotion. I would like to communicate the emotions of comfort and acceptance. I would first start with an organic abstract form. These forms would have a hint of life showing



in them. Then the forms would gradually fade away to barely anything. I feel that it would make others take a closer look and see something beautiful and wise about accepting the process of decay. I feel that this small grant would be a great opportunity for a series of works to explore how people respond/react to death and decay, and will help me to find a balance within my work that speaks to inevitable death and demise but that also communicates something beautiful and stoic.

**Presentation Type and Session:** Poster IV

## **KRAFTWERK: A Study in Fiber Optics Fabric**

**Carrisa Welch**, Media Production

Faculty Mentor: Professor Ann Emo, Theater

Technology is becoming a big influence on everything we do. Now it is even being incorporated in the clothing we wear. My research is about the different applications for fiber optic fabrics in dance costumes. I am creating costumes for an innovative collaboration between the Digital Music Ensemble, the Dance Program, and Theater Design for a production of the music KRAFTWERK that will be performed at CIT 2014 in Ithaca, NY. The goal of my research is to use the music and the dance to influence where the costumes can go technologically and aesthetically. I am researching the different types of fabric that can be utilized and see how it would fit into the designing aspect. I listened to the music, contacted the companies, looked at the technical and practical uses of the fabric, light and power sources, potentials and applications for the fabric, and determine how it can all be applied to the costume design.

**Presentation Type and Session:** Poster V

## **Line: The Distance between Form and Space**

**Christopher Walsh**, FAR 342: Intermediate Sculpture II

Faculty Mentor: Professor Elena Lourenco, Sculpture

I intend to investigate how lines and points in space can create form, and how shifting perspectives on these lines can create an illusion of shifting form. This will be accomplished by extruding a variety of lines from a specific location in space so that the form can emerge in a different light through this process. The research involved in a piece like this involves the materials that can be used to successfully create line and to control the aesthetic resulting from such points in space. I would like to find other artists who are investigating this similar scenario and how they accomplished it. This will entail computer research and actually going to galleries to see their pieces. I will look at the works with a critical mindset to truly dive into what they were successful with and what could be changed to make it even better. To research materials I would like to use a multitude of things to truly discover the pros and cons of each one. Possible materials I would like to investigate include,

steel, wood, acrylic, and many more things. The materials must be easily manipulated so that they can create exactly what I intend to. Through this research I hope to create pieces that are extremely visually interesting. I want the viewer to have to dive into my pieces and investigate every detail to discover what they are truly looking at.

**Presentation Type and Session:** Poster V

## **The Man with the Flaming Table**

**Adam Ianni**, DES 351: Wood—Junior Studio

Faculty Mentor: Professor Sunhwa Kim, Design

The international man of mystery is dynamic, tech savvy, and of course charismatic. I've always been drawn to the gadgetry trope used throughout the bond films. This assertion that through technology, we can solve any problem might not hold true in our daily lives, but it creates flashy images that glue audiences to the screen, and engages my love of the mechanical. After watching Goldfinger, Goldeneye and Skyfall, I decided that I wanted to incorporate certain elements that struck me as being unequivocally Bond. Foremost, I wanted my design to have an element of the hidden and secret. Additionally I wanted my design to look structural and engineered, as so much of the Bond ethos is tied up with technology. The piece will be a coffee table, in which a fireplace is hidden. With a twist of a section of the tabletop and the push of a button a flame will arise. The table will be low to the ground and consist of many compound angles, giving it a sharp, industrial aesthetic, aided in part by the legs welded together from steel rods. This project is an exercise in a multitude of technical and creative problems, which by surmounting, will not only drive me to a greater skill set and a better understating of the materials of furniture design, wood, steel, glass, but also of the manipulation of popular iconography and thematic design.

**Presentation Type and Session:** Poster VI

## **Materials and Techniques in the Painting Traditions of Italy from Antiquity through the Renaissance**

**Shawn O'Rourke**, Painting

Faculty Mentor: Professor Philip Ogle, Fine Arts

My direction for this series explores techniques and material relationships. Whether different materials react in harmony or dissonance to each other, they have the ability to form interesting compositions. The actual production of the art will take authority over the subject matter that is depicted. I create a strong narrative in my work and each material is selected based on the value, significance, or memory that I associate to the object. In exploring the different materials and techniques, I will structure my ideas around the physical support of painting. Each medium directs and highlights the certain successes and problems I find. With exploring a variety of techniques, I will deepen my understanding in painting and identify a specific theme throughout my art. From the surface,

canvas, or wall to the pigments applied, I will be able to create each individual part of the process in my paintings. The work is focused in the discipline of painting and how I explore the relationship between light and color.

**Presentation Type and Session:** Poster VI

## Music is Moving: And That's the Gospel Truth

**Kelly Bourque**, MUS 440: Ethnomusicology  
Faculty Mentor: Professor Carolyn Guzski, Music

African American gospel music serves many purposes—in my research, I explore why this music is so important to those who perform it, and trace its origins to roots in American slavery. As slavery was such a prominent issue in our national history, it's interesting to know what artistic expression emerged from this era—and for African Americans, that would be gospel music. I want to explore what gives gospel music its power and take a closer look at who has helped contribute to its flourishing—for example, people like Doris Aker, an American gospel music composer, pianist and singer. In order to fully appreciate gospel, it's important to look at the details. What type of artistic experience does an African American performing gospel music have? How was the music shaped throughout history into what it is today? How do the religious beliefs of its singers correspond to the music they're practicing? Black gospel has become increasingly popular and has taken a journey through time, evolving and growing—but what has changed? Where does it stand now? These are the central questions I hope to answer. And why is it important? Because music is moving—and that's the gospel truth.

**Presentation Type and Session:** Poster III

## Music of the Rubik's Cube: A Mathematically Generated Composition

**James Cole**, Music  
Faculty Mentor: Professor Tomas Henriques, Music

Having learned the solution to a Rubik's cube six years ago, I am intimately familiar with the algorithms required for its resolution. Used as a calming technique for my anxiety, I often ruminate on the patterns to further understand their individually complex roles in the panacea. Inspiration blindsided me during a habitual meditation on this framework, and I began, for the first time, to write down the numbers and patterns clouding my mind. After hours of organization, creation, and most importantly inspiration, the Rubik's cube derived composition was birthed. The Rubik's Composition, a complex compilation of logic, patterns, mathematics, music, and creativity, holds a deeper meaning to me. This work of art contains me. A clearer picture of the activities occurring in my mind has never been more tangible to the greater population. Though only 4 hours were needed to organize and foster this method of composition and musical approach in my own mind, a substantially longer

period of time was required to translate and explain my techniques and thought process. Through this time period I made my thoughts vulnerable; a risk I had never taken before. There was no guarantee that I would be successful in my communication, or that my work would be appreciated. The Rubik's Composition has become my masterpiece, my brainchild, and my vulnerable expression of inspiration.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

## Object Relations

**Megan Cavanaugh**, FAR 343: Advanced Sculpture  
Faculty Mentor: Professor Kenneth Payne, Fine Arts

In my research, I set out to re-contextualize found cultural objects. The found objects stand for representations of the vast range of experiences such as feelings, memories, and thoughts that constitute what one is. Individuals can occupy the same space, side by side, but yet be living in different worlds. I am interested in assembling objects in a way to create a universal narrative. Through my explorations, I have been delving into the realm of magic realism. I have been layering fantastic imagery with looming political, cultural, and social concerns. The methods of manipulation create a sphere of disturbance, ranging from ceramic doll with missing body parts to a three-foot tall cart iron hair barrette. The magical component of my works warps the traditional way objects are perceived and re-examines arbitrary boundaries through shifting the shape of realities.

**Presentation Type and Session:** Poster VI

## Painting Series: Journey of My Life as an Immigrant

**Patricia O'Donnell**, Painting  
Faculty Mentor: Professor Lin Xia Jiang, Fine Arts

My project consists of a body of eight paintings that reflects and addresses the challenges and struggles that I have gone through as an immigrant to this country. Growing up in a diverse cultural and ethnic background informed and prepared me in dealing with and overcoming different difficulties and challenges in my pursuit of new life in this country. In this series of paintings, I was able to address different aspects of my journey as an immigrant by selecting relevant subject matters and exploring different technical approaches and materials that best portray my experiences and emotions of my life of cultural diversity and assimilation. In my works I have included materials similar to those used in my Latin American heritage as well as techniques, styles and images from my Asian, European and now North American background. For example "Genealogy" is oil on Amate paper, which is specialty art paper manufactured in Mexico, by descendants of Mayans, using in the Mayan Huexotzinco Codex. It highlights images of my family tree including past and present in traditional and modern styles. Others such as "ESL

Class" Oil on canvas, 40 x 22, is a study in Surrealist style inspired by Catalan Spanish painter Joan Miro. Additionally, Triadic primary colors of red, yellow, & blue are used as the main color scheme in this painting. Another Spanish painter Goya and Post French Impressionist painter Paul Cezanne are other inspirations when I painted the paintings of the people in my life such as "Magally," "Christopher" and "A Friend". Among the paintings that include landscape motif, I chose the expressionist representational style with naturalistic colors and chiaroscuro. "The Heat" and "North Tonawanda" are such examples. Through out of this body of paintings, I tried to use different materials to create physical textures whenever is appropriate.

**Presentation Type:** Exhibit: Mezzanine Level, Library

*Note: Presenter will be available Friday, May 2 from 5:00 p.m. – 6:30 p.m. and Saturday, May 3 from 11:30 a.m. – 1:00 p.m.*

## Painting with Light

**Nicholas Butler**, Photography

Faculty Mentor: Professor James Sylvia, Fine Arts

Painting with light is photographic technique that is generally done in total darkness or using very minimal ambient lighting. The subject or subjects are lit using a variety of continuously moving hand held light sources. In the case of these photographs I made, the light source was a variety of hand held flashlights of many different luminosities. During this process the exposures could be 30 seconds or longer and the subject must not move or their image will be blurred. I used various types of flashlights, ranging in size, brightness, pattern, and color temperature, in this way I was able to take full advantage of this process while exercising the most creative control over the outcome of my photographs, I was able to mix and match different lights and effects to create diverse visual experiences. The resulting lighting painting technique is different from the traditional studio lighting set-up, which consists of light that is coming from a single source or from a stationary place. This process allows the artist to selectivity light the subject from many different places so the effect is that you might see a selectivity backlit, side lit and front lit subject all at the same time. As and artist I want to keep contributing to my personal vision and photographic technique. This body of work entitled "painting with light" is not only a title for the work but also the process I used to create the images.

**Presentation Type:** Exhibit: Mezzanine Level, Library

*Note: Presenter will be available Friday, May 2 from 5:00 p.m. – 6:30 p.m. and Saturday, May 3 from 11:30 a.m. – 1:00 p.m.*

## Photomicrography Cyanotypes

**Katelyn Weidner**, Art Therapy and Speech-Language Pathology

Faculty Mentor: Professor Gary Pettibone, Biology

Photomicrography cyanotypes are inspired by early 19th century photographer-scientists, like Anna Atkins and William Henry Fox Talbot, whose images of various biological specimens captivated audiences worldwide. These early pioneers captured the invisible

world's ascetic nature through photography while simultaneously displaying its objective character, visible for the first time through the advent of the microscope and chemical photographic processes. These entwined disciplines formed and molded each other into a chimeric art form. But sadly, these two fields are no longer thought of today as so entwined. My project is a collaborative effort focusing on the intersection of art and science. I hope that it will be a call to those in practice on either side of the disciplines to place more emphasis on collaborative efforts. I am attempting to comment on the objective versus the subjective, the illogical segregation of academic disciplines, and provoke curated navel gazing into the reality of the human macro versus micro. I hope to create an environment in which the viewer begins to understand that the lines drawn between art and science are blurred, biased, and illogical. I chose to use human body tissue as a commentary on the collaborative effort that is our entire being. The smallest parts of ourselves work together to make up our bodies and minds creating individual consciousness, that ultimately results in the creation of the larger social organism.

**Presentation Type:** Exhibit: Mezzanine Level, Library

*Note: Presenter will be available Friday, May 2 from 5:00 p.m. – 6:30 p.m. and Saturday, May 3 from 11:30 a.m. – 1:00 p.m.*

## Propaganda, Metal and Glass: Disseminating Ideas via Enameled Jewelry

**Robin Connell**, Metals/Jewelry

Faculty Mentor: Professor Tara Nahabetian, Design

The work presented explores the connection between propaganda and enameling and the use of enameling to disseminate ideas. Pulling design influences from military medals, mid-century advertising copy, and communist symbolism I used ancient techniques of Champlevé enameling and modern photo etching to create a multi-layered pin that creates a new kind of propaganda. Champlevé enameling dates back to medieval times, and requires the skillful inlaying of glass particles into metal. The technique lends to graphic application of color and was frequently used for religious items during the middle ages. Enamels would later be utilized as cheap factory produced pins in the Soviet Union as a way to glorify the state, a subtle form of propaganda. Even though the true link between enamels and propaganda is mainly coincidental it is a link that cannot be ignored. To push the work into the 21<sup>st</sup> century I have included a QR (quick response) code that links to my website, providing a fluid level of information that is easily modified, adding an ephemeral nature to a traditionally diuturnal medium. This work speaks to the nature of omission as a means of emotional control, an important aspect of propaganda. It also touches upon the emptiness of modern advertising and the new ubiquitous means in which information is disseminated digitally. Digital and physical, ancient and modern this pin is meant to speak to modern experience as much as to enamels historical uses.

**Presentation Type and Session:** Poster II

## Resin in a Ceramic World

**Rachelyn Noworyta**, Ceramics

Faculty Mentor: Professor Robert Wood, Design

The theme in my ceramic sculptural works focus on plant life and their interaction with one another as well as the human world. In order to accomplish my goal of revealing what takes place beneath the soil, I use resin as a way to create the illusion of the sculptural clay components being planted. By using resin I am able to give the viewer a 360° view of the “planted” clay components and not lose any integrity of the piece. I first researched different types of resin to find ones that would fit my objectives. Once I found the resins I was able to test for things like sustainability, shrinkage, strength, color, viscosity, movement while curing, seamless layering of the resin, and additives to the resin to create purposeful layers. I am using the results for my ceramic sculptural work and presenting finished successful pieces, as well as the some of the resin tests.

**Presentation Type and Session:** Poster IV

## Revolve

**Brittany Wysocki**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor Ray Boucher, Theatre and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Revolve is a play set in the style of an absurdist drama, using character tropes and a parody of the game show style to discuss themes such as government oppression, randomness of victimization and brutality towards others in times of extreme crisis. Six unnamed characters are unknowingly forced into an deadly situation where they must play a game similar to a modern-day Russian roulette. Deeper socio-political issues such as genocide are the fuel for the research in this piece, examining atrocities and social rebellions in countries such as Burma, Syria, Rwanda, Korea, Vietnam and vast parts of Europe. With a written script provided as a platform, this will be a devised piece, and much of the final product will be based on the collaboration of actors in rehearsal. There will be a talk back following the show, prompting further discussion and director/actor/audience feedback. Guided questions based on the research will hopefully derive further discussion about human nature, and how we would react in similar scenarios.

**Presentation Type:** Arts, Flexible Theatre, Donald Savage Building, Saturday May 3, 1:15 p.m. — 2:15 p.m.

## Single-Camera Versus Multi-Camera: Which is the Better Sitcom Format?

**Nick Ilardi**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor Louis Rera, Communication and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Since the 1940's, the situational comedy, or sitcom, has been a staple of American television. There has traditionally been two different ways to produce the sitcom: single-camera and multiple-

camera. With that being said, the argument persists as to which format is the better one for sitcom production. Presently, multiple-camera shows like *The Big Bang Theory* tend to be more popular with the public but lack the critical success of single-camera shows like *Parks and Recreation*. I am interested to see if this dynamic is one that has been true throughout history. Both of these styles have had their dominant periods, but it is not until recently that both have been featured prominently at the same time. By studying the history of sitcoms in America, I hope to come to the conclusion of which format provides the best show. Critical reviews, popularity determined by Nielsen ratings, production costs and other factors will be considered to make this decision.

**Presentation Type and Session:** Poster VIII

## Slightly Out of Tune: The Birth of the Bossa Nova

**Jared Tinkham**, MUS 440: Ethnomusicology

Faculty Mentor: Professor Carolyn Guzski, Music

Of the many popular music styles that were born in Brazil, the bossa nova certainly stands out. My presentation will explore the history of bossa nova, along with the famous musicians and popular songs that pioneered the genre. The term “bossa nova” literally means “new trend,” a fitting title due to the mixed reviews that the Antonio Carlos Jobim song “Desafinado” received upon its debut in 1959. Derived from the Brazilian samba, the bossa nova feel is heavily syncopated, with an almost infectious swing feel, and often contains darker and more modern harmonies and tone colors than the national dance upon which it is based. I'll be using both textual and musical resources to research this genre, including transcribing recordings with standard notation and consulting community experts on Latin music. As a jazz guitarist myself, I'll also be examining various bossa nova rhythmic patterns with their sophisticated levels of syncopation to really get inside the genre as a practicing musician.

**Presentation Type and Session:** Poster III

## So You Think You Catalan Dance: Catalan Folk Music in Classical Repertoire

**Brian Geary**, MUS 440: Ethnomusicology

Faculty Mentor: Professor Carolyn Guzski, Music

My research explores the diverse culture of Catalonia and the effect it has had on Western art music. Even though Catalonia is a region of Spain, its citizens do not consider themselves a part of Spanish culture. Catalans have taken aspects of Spanish, French, Oriental, Celtic, Cuban, and African cultures to create their own identity as a very proud people. The music of this region is highly reflective of its changing history over time. My methodology examines representative works of the two greatest Catalan composers, Enrique Granados and Federico Mompou. I will also include ethnomusicological studies focusing on dances



such as the “Habanera” and particularly the “Sardana,” which embodies harmony, brotherhood, and democracy--three values central to Catalan culture. Salvador Giner summed up the Sardana’s importance: “It is the national dance in which rich and poor, young and old, men and women, participate in one unbroken circle.” An influential dance work I will examine is Mompou’s Cançons i Danses, one of which is based on a Catalan Christmas song. I hope to show my audience how much this culture has done to breathe fresh sounds into Western art music.

**Presentation Type and Session:** Poster III

## Social Commentary: Anthropomorphic Illustration

**Juliana Conidi**, HON 400: Muriel A. Howard Honors Colloquium  
Faculty Mentors: Professor Carol Townsend, Design and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

My goal was to create a series of illustrations showing social commentary. I believe that we, as human beings, are able to perceive certain feelings and emotions not only by looking at human imagery, but by seeing these emotions in other living organisms as well. Through a hybridization of the two, or anthropomorphism, emotions raised can be enhanced more than through only one or the other. After studying the works and techniques of such artists as Giuseppe Arcimboldo, Francis Bacon, and Matthias Smith, in which human and non human imagery is combined, I found that color and composition plus intensity and setting are very important in getting one’s point across to viewers. After research and countless sketches, four compositions were finalized, each focused upon a different social situation. I then worked them up by hand into 18x24 inch drawings on toned watercolor paper, using watercolors and colored pencil. As a Communication Design major, I discovered that a project like this hones my drafting skills and develops my talents in a way that will be extremely useful to me in my career options.

**Presentation Type:** Exhibit: Mezzanine Level, Library

*Note: Presenter will be available Friday, May 2 from 5:00 p.m. – 6:30 p.m. and Saturday, May 3 from 11:30 a.m. – 1:00 p.m.*

## Songs of Resistance: Palestine’s Protest Music

**Sameerah Jabrhamdan**, MUS 440: Ethnomusicology  
Faculty Mentor: Professor Carolyn Guzski, Music

This project focuses on the music of the Palestinian people through times of war and resistance. The Israeli-Palestinian conflict has been an ongoing battle for decades. Many Palestinians have been forced to leave their homes and flee to neighboring countries such as Lebanon and Jordan. However, these people did not leave their homeland without showing their will to stay. One of the ways that they have demonstrated this is through protest songs. This music has become an important means of expressing nationality. Many of these songs have remained relevant to current events over time and have become very popular across the Middle East. In my research,

I notate these songs and provide the historical contexts from which they emerged. I hope to also show how current Palestinian music is politically charged to motivate younger generations to explore their past and stand up for their future. These songs are meant to unite the people of a country that has been dispersed across the Middle East in search of refuge. My goal is to express the viewpoint of the refugee, as well as the collective passion of a people to preserve the vitality of their national culture through music.

**Presentation Type and Session:** Poster I

## The Success of Office Workers Depends on Office Design

**Brittany Schirmer**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Jacobucci, Political Science

What are the factors that affect the success of workers that occupy an office? So many people occupy a workstation every day. What factors about the office can improve the performance of these office workers? Many of these factors include: lighting design, type of layout, amount of privacy and even interior colors. To determine these factors, I have researched many peer-reviewed articles as well as created a survey of my own. At this point, I have determined that a workstation that can be manipulated by its user creates a positive work environment for an employee. A manipulated workstation would include: adjustable height and orientation. Employees also like an even lighting scheme, with the view of the outdoors and natural light. Now, how do we use this information to create a great co-working space? I am simultaneously working on my senior thesis project in Interior Design which is a collaborative marketing space located within the Market Arcade building in Buffalo, New York. My plans and renderings were influenced by my research and they will be included in my poster.

**Presentation Type and Session:** Poster III

## Take Me Away: The Illustrated Books

**David Fox**, DES 499: Independent Study

Faculty Mentor: Professor Carol Townsend, Design

I am presenting the capstone project for my degree in Arts and Letters, a trio of illustrated artist’s books. The accordion-fold format was chosen for these book works because it permits being fully opened and being seen all at once. Although one can still look at each book by turning individual pages, being able to extend the book creates a certain intimacy. The scale contributes as well, small and stocky in the hand. However, the images and ideas are full of emotion and detail. I merged old and new technology because each illustration is hand drawn and scanned into the computer to be adjusted and colored. By using the watercolor paintbrush mode in Photoshop and by choosing specific colors, I was able to create a subtle mood with space and depth. This combination of technologies opened a tiny window into myself because it focused on my strengths. The character, unnamed, is a reflection of myself, related both in looks and emotions. The connecting thematic thread between

these book works is travel, not knowing what the future holds. I have a desire to explore the world around me and learn something new, which is a metaphor for finding myself and discovering who I am to become.

**Presentation Type and Session:** Poster V

## **Theater and Children: His Design, Her Design, Our Design**

**Brittany Randall**, THA 495: Theater and Children

Faculty Mentor: Professor Ann Emo, Theater

My goal for the children at the Buffalo Community Center was to teach them about the beginning process of creating a costume. I wanted them to learn a different aspect of theater. First, I read the participants a story; The Emperor's New Clothes written by Hans Christian Andersen. Before creating their design, I advised each participant to help them brainstorm. I wanted them to come up with ideas of how their Emperor or Empress would dress and how they would pose for presentational purposes. In the next session I gave the children examples of how they might draw their character. The stance of their character was important because it illustrates personality. The children chose fabric samples for the costumes and then drew sketches of what they envisioned. This project took 6 sessions of 30 minutes each. Through the process we learned patience, creativity and accuracy.

**Presentation Type and Session:** Poster V

## **Why I Wear This Sweatshirt: Healing Sexual Abuse Through Theater**

**Allison Monaco**, Theater Arts, **Deonna Dolac**, Theater Arts, **Julia Smith**, Theater Arts, **Kara Ashby**, Theater Arts, **Chelsea Correa**, Theater Arts, **Christna Metauro**, Theater Arts, **Brittany Wysocki**, Theater Arts, **Frances Hughes**, Theater Arts, **Shabar Rouse**, Theater Arts, **Molly Bader**, Theater Arts, **Rachel Wach**, Theater Arts, **Emma Siddon**, Theater Arts, **Trevor Dugan**, Advertising, and **Samantha Crystal**, Theater Arts

Mentor: Ms. Eve Everette, The Anne Frank Project

Sweatshirt is a devised play in five scenes written to explore the use of theater arts as a means for healing from and coping with traumatic experiences. Sweatshirt is a culmination of theatrical and psychological research. This research included traditional books, news articles, and websites. We explored and focused on the theories of Freud and psycho-analysis. Theatrical research included observation of different directing techniques, books on clowning and devised theater as well as applying my classes to the rehearsal process. Non-traditional research included social media links, an active Facebook page where my actors contributed to the group's growth, pictures, poetry, and music. Through the creation process I have examined the psychology behind abuse and those it affects as well as the theatrical process of creating and producing a play. Infusing the theories of Sigmund Freud into our work along with ensemble theater training, a universal, abstract piece of theater

is created in order to tell the story of one's journey from abuse to empowerment.

**Presentation Type:** Arts, Flexible Theatre, Donald Savage Building, Saturday May 3, 11:00 a.m. – 12:15 p.m.

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## ***Business and Fashion & Textile Technology***

### **Chrysalias: The Merging of Creative Directions**

**Rachel Hamerski**, FTT 451: Senior Project

Faculty Mentor: Professor Lynn Boorady, Fashion & Textile Technology

Trend research is the foundation for my senior clothing collection. The goal of the trend research was to choose a creative direction, silhouettes, and colors. The creative direction I chose is “Next Nature”. This creative direction guides me through how nature encompasses shape, surface, and graphics. The collection will introduce genuine leather accents with the majority of the garments fabricated in cotton. The use of leather displays my aesthetic as a designer through combining hard and soft elements. The major look of this collection is relying on the “moto” trend or a motorcycle look as predicted through analyzing current trends for this season. The “moto” trend is shown through the detailed stitching and paneling of the leather. Also, the soft element of this collection includes peplum silhouettes that are seen on the tops and dresses. After researching trends, I sketched thirty outfits and in consultation with my faculty mentor, six outfits were chosen to create the basis of the collection. Then the sketches were redrawn in Adobe Illustrator using croquis in different poses. The research findings were compiled within a PowerPoint Presentation that included the concept, description, color, fabric, print, and line boards. The line board includes the six outfits displayed along with the color ways and print decisions. When the research and planning was completed, I developed paper patterns and used draping techniques to draft the garments. From there, the pattern pieces were sewn together to create six completed garments and my senior collection was completed.

**Presentation Type and Session:** Poster IV

### **Cosa Italia ha da Offrire: What Italy has to Offer**

**Ivena Ford, Britton Buczkowski, and Tarrah DeVito**, HTR 318: Cultural Tourism

Faculty Mentor: Professor Kathleen O'Brien, Hospitality and Tourism

How do culture, diversity and history shape tourists' viewpoints and experiences in Italy? Our research was conducted in conjunction with a travel study trip, “Taste of Italy” that took us to the cities of Milan, Cuneo, Bologna, Florence, Turin, and Bra. Tourism is one of Italy's fastest growing and most profitable industrial sectors, with more than 46.1 million visitors traveling to Italy each year producing an estimated revenue of 136.1 billion. While in Italy, we visited various cultural attractions, restaurants, hotels and food sourcing businesses; these places served to represent the definitive culture and diversity in Italy. The Banco del Vino, University of Gastronomic Sciences, Shroud of Turin, Borgogno Winery, Parma Ham Factory,

and Duomo in Florence are some of the places we explored. We produced a VLOG, a blog and video, to document our experiences as well as tourist viewpoints.

**Presentation Type and Session:** Poster VII

### **Does the Media Influence Poor Body Image in Women?**

**Kaitlin Russo**, FTT 450: Issues in Apparel and Textile Industry

Faculty Mentor: Professor Arlesa Shephard, Fashion & Textile Technology

I conducted research to examine the impact that the fashion industry's practice of body editing using photo correcting software to create slender and distorted physiques for aesthetic purposes has on women in society. I aim to understand how this practice impacts regular women's lives, particularly in regards to mental health and cultural implications. My goal is to investigate how this practice may evolve in the future and whether society's accepted standard of the female form will adapt to these changes.

**Presentation Type and Session:** Poster I

### **Dyeing for a Cleaner Environment**

**Mary Ann Tran**, FTT 450: Issues in Apparel and Textile Industry

Faculty Mentor: Professor Arlesa Shephard, Fashion & Textile Technology

One of the most crucial factors before any designer or textile manufacturer can even consider constructing a garment is selecting color palettes for that particular season. Textile dye manufactures plays one of the most important roles in the apparel industry in order to produce the dyes and colors needed to produce garments and other products for the consumers. Ever since the switch from using natural dyestuff to synthetic dyes in the 19<sup>th</sup> century, producing garments became cheaper and faster to dye but unfortunately increased the amount of color pollution and toxic waste into the water stream and the environment. Producing dyes and pigments damages both the environment and human health if not taken care of properly. Based on some research and interviews, there are ways to reducing and removing the dyestuff from the water streams as much as possible without having to eliminate the use of most synthetic dyes. The objective of this research will indicate some common methods used in order to reduce most of the dye effluents from the environment, as well as new innovative techniques found in current news articles that were invented to achieve the same goal.

**Presentation Type and Session:** Poster VI

### **The Economic Value Added from a Baccalaureate Degree in Business Administration**

**Gibran Johnson, Connor Stachecki, and Matthew Wetzel**,

BUS 325: Human Resource Management

Faculty Mentor: Professor Theodore Davis Jr., Business

The purpose of this research is to determine, through a Human Resource Management (HRM) perspective, whether there is

Economic Value Added (EVA) by receiving a baccalaureate degree in Business Administration from Buffalo State University. Most contemporary theorist agrees that human resource management (HRM) has a special role to play in affecting the direction of organizational philosophy at the enterprise strategy level. In making this determination, HRM is responsible for the selection and hiring of applicants. The Business Program at Buffalo State College is one of two four-year business programs in the Western New York area that is not accredited. Therefore, this research will focus if the lack of accreditation is valuable and relevant in what it contributes to what is arguably the most critical metric of relevance for students majoring in Business Administration, whereby, an economic value is accrued from this education. This research will investigate the recruiting practices of the eight schools in the Western New York area, several of the big companies, as well as the transferability of the Business Department's credits into other institutions, in either the undergraduate program or the graduate program. This research is theorizing that there is still an EVA; however, with certain career paths there might be a negative return for students.

**Presentation Type and Session:** Oral – Business, Computer Information Systems, Education, and Engineering Technology

### Fashion with Me

**Ching Sum Tang**, FTT 451: Senior Project

Faculty Mentor: Professor David A Brinson, Fashion & Textile Technology

Technology and creativity are intertwined as I conduct research for my senior design collection for the Runway 7.0 fashion show “Chrysalis”. The theme speaks of transformation and this is used as the basis of the inspiration behind my designs. To me, nothing is more beautiful than the transformation of a caterpillar emerging from its cocoon to become a butterfly and so this became the image I aspired to attain. I researched color and style trends for the spring 2014 season and melded these colors together to create a cohesive look. My style lines are mostly form fitting, like a cocoon, but open up at the hem, the neckline or jacket to show the awakening of the butterfly. The basic steps in design include sketching the initial design and obtaining a 3D body scan for each model to obtain accurate measurements. First a sample of each garment is draped in three dimensions so that the style remains true to the vision, then each sample is constructed and fine-tuned, fit to the individual model and altered as necessary. This process is done individually for each garment. The construction of these garments was researched through observation and trial/error – by constructing the garment in sample form, this allows me to concentrate on difficult areas. After months of research, design and construction, the final product is a line of garments which speak to my initial inspiration and suitable to walk the runway.

**Presentation Type and Session:** Poster II

### Green for Green: Lucrative Careers in Sustainability

**Maxy Copeland**, BUS 378: Business Professional Practice

Faculty Mentor: Professor Lynne M. Scalia, Business

As an aspiring public interest attorney, I was excited to be granted an opportunity to intern with Solar Liberty, a Buffalo-based, green company that sells solar installations. I have always been interested in the importance of environmental issues and feel that it is undeniable that “green careers” are a major emerging industry. I felt that this internship would provide invaluable insight to the world of green business, and it has. Solar installations are a lucrative, yet challenging business. There is a lot of uncertainty because government grants and tax incentives play a large part in the direction of the industry. Despite the risks, Solar Liberty, a company that was founded by two relatively young entrepreneurs, has seen immense success over the past eight years. While I have learned a great deal about the solar energy industry from this internship, it has also inspired a variety of questions about the future of “green careers” and its industry, how specific skills and disciplines fit into these careers, and what students should be doing now to position themselves to be competitive in this emerging market, as career professionals or entrepreneurs. My poster presentation will highlight the green careers and business opportunities that have the most promise for future students. I will present diagrams detailing which skills and concentrations tend to align best with types of jobs. I will also outline the types of problems that the industry faces, which may inspire the next generation of creative geniuses to base their careers on solving them.

**Presentation Type and Session:** Poster VII

### Is Accounting a Viable Concentration at Buffalo State?

**Kelsey McArthur** and **Kevin Wagner**, BUS 430: Strategic Management

Faculty Mentor: Professor Theodore Davis Jr., Business

The purpose of this research is to determine whether an Accounting concentration would be viable in the Business Department at Buffalo State. Accounting is a field where many jobs are needed or available and it will give more options to Buffalo State students, who major in Business Administration. In addition, since the Business program at Buffalo State is one of two business programs that are not accredited in the Western New York area, having an accredited accounting concentration would be considered an asset to the Business Department, as well as to Buffalo State, in terms of student population growth, recruitment from employers and recognition. This research will investigate the other seven schools in the Western New York area, as well as the standards of the Accreditation Standards for Accounting Accreditation through the Association to Advance Collegiate Schools of Business (AACSB).



Moreover, if the results find that having an Accounting concentration would be viable, then this report will have course proposals that will accompany this report, in order to fill in the gaps of what is currently being offered on this campus.

**Presentation Type and Session:** Oral — Business, Computer Information Systems, Education, and Engineering Technology

### **Shibori with a Purpose**

**Vanessa Williams**, Fashion Textile Design

Faculty Mentors: Mr. Ted Mallwitz, Educational Opportunity Program and Professor Dawne Hoeg, Design

How might we use natural, harmless dyes in the fashion industry? Sustainability is a major issue in the fashion industry where hundreds of fiber, yarn, and textile manufacturers are constantly dumping harmful chemical dyes into the environment. The purpose of this work is to raise awareness and to present an alternative method for dyeing fashion materials. Shibori is a Japanese technique of patterning and dyeing fabric that traces back to 3000 B.C. and uses the natural dye abstracted from the indigo plant. I have been inspired to present this work by my Fiber I class where I was first introduced to Shibori. I am excited to present this ancient technique that is minimally used with the hope of finding ecological ways to incorporate it into fashion. It is my belief that we can integrate traditional tie-dye and fashion by using materials found in nature. Through the use of natural dyes such as plants, flowers, and vegetables; we can make the industry more sustainable.

**Presentation Type and Session:** Poster I

### **A Taste of Italy**

**Samantha Wik, Amanda Furlani, Danielle Kane, Jacklyn Kertzle, and Alexandra Esmond**, HTR 318: Cultural Tourism

Faculty Mentor: Professor Kathleen O'Brien, Hospitality and Tourism

A Ten Day Study Abroad Program, "The Taste of Italy", is the context for our project that explore the relationship between food and culture and its importance to tourists in choosing a travel destination. How can food and culture be used to promote tourism in selected destinations in Italy and America? Our project includes a comparison between Italian and American cuisine and the way each culture views their cuisine. Findings from our study reveal the opportunities to promote and brand food and culture as part of destination management activities. We compared 'slow' versus 'fast' food. 'Slow Food' is an international movement founded by Carlo Petrini in 1986 that strives to preserve traditional and regional cuisine. The movement has since expanded globally to over 100,000 members in 150 countries. Its goals of sustainable foods and promotion of local small businesses are paralleled by a political agenda directed against globalization of agricultural products. It is now used as a "brand" to attract visitors to places like Cuneo, Bra, and Bologna. Fast food is the term given to food that is prepared

and served very quickly, first popularized in the 1950's in the United States. Fast food restaurants are traditionally separated by their ability to serve food via a drive-through. Is this the view tourists have of food and culture in America? If so, what opportunities exist for the creation of a new strategy to promote tourism using our America's great diversity and food culture? The results of the comparative research indicate the slow food movement in Italy is an effective strategy branding certain destinations in Italy. The scope of this study however, does not allow for a clear understanding of the impact of America's image as "fast food nation" on tourism promotion using food and culture.

**Presentation Type and Session:** Poster VII

### **The Viability of Having a Masters of Arts in Management Graduate Program**

**Britney Moore and Shaun Winter**, BUS 430: Strategic Management

Faculty Mentor: Professor Theodore Davis Jr., Business

The purpose of this research is to determine whether a Masters of Arts in Management (MAM) graduate program would be viable at Buffalo State College. The Business Department does not currently have a graduate program in Business. In addition, the Business Department offers an undergraduate program that is not accredited, and is one of two schools in the Western New York area whose undergraduate business program is not accredited. This research will use a descriptive methodology of comparing the Graduate Business programs in the Western New York area, as well as the State University New York system to determine if having such a program would bring a competitive advantage to Buffalo State. This research will investigate the different graduate degrees, i.e., Masters of Business Administration (MBA), Masters of Science in Management (MSM), and the Masters of Arts in Management (MAM) to determine which is the best fit and why. If it is determine that the MAM program is the best fit, a Submission of a Graduate Academic Program Proposal will accompany this report.

**Presentation Type and Session:** Oral — Business, Computer Information Systems, Education, and Engineering Technology

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# Computer Information Systems & Engineering Technology

## Applied Engineering Challenge

**Andrew Sabey, Brandon Favicchia, Scott Blais, and Aliou Jeng,** ENT 422: Machine Design II

Faculty Mentor: Professor David Kukulka, Engineering Technology

Every year the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) holds a national competition geared toward HVAC (Heating, Ventilation and Air Conditioning) design. This year ASHRAE's applied engineering challenge focuses on the need to improve the indoor air quality (IAQ) for residences in developing countries. Following ASHRAE's IAQ standards 55 (Thermal Environmental Conditions for Human Occupancy), 62.2 (Ventilation and acceptable IAQ) and 90.2 (Energy Standards) an affordable air conditioner for heating, cooling, and ventilation must be designed. Assuming a residence that only has 240 volts and 75 amps available for all uses, HVAC system must be maintainable, sustainable, and should incorporate renewable energy sources for uses when power isn't supplied to the residence. Working with sponsor Wendel Companies all calculations, assumptions, and designs will be performed to meet ASHRAE's project requirements. The final design will improve the quality of the environment and help with the rising concern for global warming.

**Presentation Type and Session:** Poster VIII

## Big Data, Bigger Solutions

**Terrence Wilson,** Computer Information Systems

Faculty Mentor: Professor Sarbani Banerjee, Computer Information Systems

How can we leverage publicly available data to enhance decision-making? There is much information provided to the public on government and state websites. Crime figures, car accidents, farm locations, etc., are provided in form of datasets. Today, corporations analyze such large datasets to make more informed business decisions. For example, environmental, hospital, consensus data, and death rates can provide insight as to whether a city is considered healthy in comparison to others. For my research project I will use the open source software "Apache Hadoop" and its large-scale data processing module "Mapreduce" to analyze public datasets. Hadoop became popular for its ability to store and manage vast amounts of data cheaply and efficiently. Hadoop stores data across distributed clusters of servers and allows users to run analysis applications within them; this avoids the complications of transporting large amounts of data through the network. Data applications will continue to run even when individual clusters fail. Hadoop is written in Java but applications can be written in other popular programming languages. Amongst the list of big

names that currently use Hadoop are: Amazon, Microsoft, Google, Yahoo, Facebook, Oracle, and IBM. As of 2013 over half fortune 50 companies use Hadoop.

**Presentation Type and Session:** Poster VII

## Buffalo State's Baja Vehicle

**Anthony Bruno, Duane Lewis, Mike DiRisio, Todd Owen, Thomas Rudz, Bobby Stone, Jason Curry, Mike Daigler, and Chris Holzmann,** ENT 422: Machine Design II

Faculty Mentor: Professor David Kukulka, Engineering Technology

Baja SAE is an intercollegiate design competition run by the Society of Automotive Engineers (SAE). Teams of students from universities all over the world design and build small off-road vehicles that can withstand the harshest elements of rough terrain. Computer Aided Design (CAD) modeling techniques were utilized by the team this year in order to design and analyze the vehicle. This allowed the required design calculations and component evaluation to be easily performed; allowing the minimization of manufacturing time and vehicle cost. Redesign of the suspension system from previous designs included the use of high travel air shocks. This produced a design that could perform better on the test course by providing more ground clearance and a tighter turning radius. Vehicle size reduction was another design objective in this year's the design. Size reduction saves precious weight allowing the production of a more nimble car. Teams are judged on ergonomics, functionality, and the ability to economically manufacture their cars. Evaluation includes a combination of the vehicles performance in the various events and the quality of their technical reports. Required reports detail the engineering and design process that was used in developing each system of the team's vehicle; a cost report is also included that provides all the background information necessary to verify the economic feasibility of the vehicle. These reports are submitted weeks in advance of the event with additional presentations given on site in the presence of SAE design judges. This contest provides engineering students an opportunity to apply their cumulative knowledge and work on a real world design problem.

**Presentation Type and Session:** Poster IV

## Centrifugal Compressors: Inlet Throttle Valve

**Mason Roalsvig, Chris Dacey, Brian Skibicki, Anna Alfonso, and Ron Roma,** ENT 422: Machine Design II

Faculty Mentor: Professor David Kukulka, Engineering Technology

FS-Elliott Co., LLC is a global leader in the production of oil-free centrifugal air and gas compressors. These high-powered machines range from 150-1500 hp and play a vital role in military, hospital and industrial processes. At the inlet to each compressor is an inlet throttling valve consisting of adjustable guide vanes which not only reduce air intake but also induce a pre-swirl during turn down conditions. Pre-swirl of air to the first impeller blade increases efficiency of the machine by reducing required motor

power and saves the owner money on their electric bill when the process is not running at full capacity. The problem with FS-Elliott's current design is its high cost of manufacturing and the pressure drop experienced from using many vanes that obstruct the inlet air stream. A revolutionary new concept has been proposed known as a vortex tube. This design is expected to surpass the current design in overall performance and cost effectiveness. In order to prove its effectiveness, a flow simulation test will be performed to evaluate the performance of each prototype. Afterwards a final decision will be made whether to accept or reject the new concept based on economics calculations and efficiency tests.

**Presentation Type and Session:** Poster V

## Consumer Level Mobile RFID Inventory Manager

**Brandon Kapral, David Melonson, Brandon Simoncelli,** and **Kyle Pilecki**, ENT 465: Senior Design

Faculty Mentor: Professor Edward Purizhansky, Engineering Technology

Asset management and loss is a primary concern for individual and small businesses. A simple, effective solution is necessary to prevent loss and provide up-to-the-minute access to asset inventory. The group will design a Consumer Level RFID Inventory Manager to provide the aforementioned services to the consumer. RFID is Radio Frequency IDentification, which uses radio waves to identify individual items. Through vicarious experience with open sourced software and relevant knowledge gained through courses at Buffalo State, the group will test and debug the system to collect data and information pertinent to making the most robust design as is possible. The interface will be simple and logical. The product will entail a hardware package with a mobile RFID reader, user-affixable RFID tags, and a GPS locator. A software interface will be included that will provide accurate and intuitive results to the end-user. This project will attempt to create a unique system where the items will be brought into and out of a persistently reading field, rather than the more common system where the field is brought to each item. At the projects' completion, a poster documenting the creative process will be displayed as well as a functioning prototype and demonstration of its functionality.

**Presentation Type and Session:** Poster VII

## Drug Use on College Campuses

**Leslie Kamara**, UNC 189: Information & Engineering Technology  
Faculty Mentor: Professor Charles Arbutina, Computer Information Systems

For my presentation, I propose developing a presentation using the Alice system. The approach will be to leverage the object oriented computing concepts learned in the Alice programming class. Fundamental programming concepts such as creating and manipulating objects, interacting with the user, using conditional logic and loops will be utilized. The purpose of the presentation is to

raise awareness about drug use on college campuses. Colleges have become the home of prescribed and un-prescribed drugs, where students use these drugs for different reasons. The presentation will focus on students being introduced to these drugs and their affect on the personal and educational lives of the students. The presentation will involve a user interacting real-time with the Alice program to obtain specific facts and other information pertinent to the topic. For instance, statistics showing the percentage of college students involved in un-prescribed drug use could be shown per user request.

**Presentation Type and Session:** Poster VI

## Drum Trainer

**Marc Gschwend, Ryan Palmer, Kais Omar, and Abid Sarvantov**, ENT 465: Senior Design

Faculty Mentor: Professor Edward Purizhansky, Engineering Technology

The Drum Trainer (DT) is a unique device that can be used for entertaining gameplay or as a training tool used to develop the rudimentary skills required for proficiency as a drummer, such as timing and precision. This device is designed to output a rhythm or drum beat and receive/analyze inputs from users as they play along on integrated practice pads. The device will measure accuracy of user inputs, analyze and provide real-time feedback for development of basic skills. The DT will be constructed using five major components, including the computer program, noise filters, a visual feedback system (LED status bars), user interface (pads, speaker, selection switches) and an Arduino board/chipset. This device will provide users with a drum playing/practicing experience that is engaging and entertaining. The Drum Trainer will be developed/built in separate stages with varying degrees of difficulty. Once each of the separate parts are constructed and tested, components will be integrated into a portable prototype. Following constructing of the prototype and debugging the integrated system, adjustment and fine-tuning of each component is expected. The prototype presented at the end of this process will be an integrated system consisting of seven drums (practice pads) and a programmable output speaker that has multiple options for the drum beat/rhythm the user wishes to play. An external LED rating system will provide visual feedback of progress and a 'free-style' option that allows the user to try out their newly honed skills, miniature drum solo style.

**Presentation Type and Session:** Poster V

## Dual Power Source

**Tanya Campbell, Edgerton Hinds, and Marcus Samerson**, ENT 465: Senior Design

Faculty Mentor: Professor Edward Purizhansky, Engineering Technology

This proposed project is a renewable energy approach for Western New York's domestic solution for domestic electrical production and consumption. In our study, we have chosen to synchronize solar energy and wind energy as a collaborative

renewable energy source to address the need of domestic electrical production and consumption. Our goal is to answer the questions: With the given weather data from NOAA, will our collaborative renewable energy source produce enough electricity to power the household for given seasons and periods of the day when the electrical grid need relief? Can the household gain economic benefits from producing (feeding) electricity into the electrical grid with this collaborative renewable energy system? In order to formulate our answer, we will simulate a domestic household utilizing collaborative renewable energy source in Smart Grid lab located in the Technology Building. The important variables are: seasonal data of sunlight from sun, seasonal data of wind speed for the air, the amount of electrical need to power a domestic household throughout the day and economical cost. The system configuration was based on economic and technological plausibility. The methodology was simulating different periods of the day with different weather forecast throughout the seasons. The results show that this collaborative renewable energy source can be utilized in the Western New York climate and would be a part of the implementation process of the Smart Grid transition in society. The overall impact of this project will show the plausibility and effectiveness of renewable energy sources at the consumption level the electrical power system.

**Presentation Type and Session:** Poster VIII

## Dynamic Stability Testing for Children's Electric Powered Vehicles

**Tom O'Connor, Ryan Wilkins, and Joe Edel**, ENT 422: Machine Design II

Faculty Mentor: Professor David Kukulka, Engineering Technology

Currently the sponsoring company for our project is experiencing inconsistencies with the dynamic stability test being performed on their children's electric power vehicles line. The current test method is not taking accurate slippage and variable battery power data. Product engineers use this data to properly design electric powered vehicles that allow children to safely operate them. As part of this study a new test station was designed and built to replace the current test station. The new system minimizes slippage error and accurately measures variable battery power output. A static test station was designed after carefully evaluating several test station designs. Results include detailed drawings of the various alternative designs and also include a discussion of the advantages and disadvantages of each design. Data will be taken on the new system and a thorough analysis will be presented.

**Presentation Type and Session:** Poster VII

## Enterprise Resource Planning in a Manufacturing Setting: How Companies Succeed and Fail

**Cristy Guay**, INT 689: Research Methods

Faculty Mentor: Professor John Earshen, Engineering Technology

There are many different Enterprise Resource Planning (ERP) systems on the market today. Deciding which software is right for a specific manufacturing company can be challenging. ERP implementation affects the entire organization. The problem is that ERP implementation has a notoriously high barrier to implementation — it is usually a resource and time intensive process. Most organizations retain a consultant specializing in ERP. The consulting company will help guide the company through the selection process and possible implementation processes. Organizations that elect to conduct their own implementation often do not have a clearly defined guideline to go by. The purpose of this research project is to examine a series of ERP implementation examples with an eye toward development of generalizable implementation guidelines. The expected outcome of this project is a comprehensive research-based guideline that a company could follow when implementing an ERP system.

**Presentation Type and Session:** Oral — Business, Computer Information Systems, Education, and Engineering Technology

## Evaluation of Materials for Use in a Shell and Tube Heat Exchanger

**Joshua Juryniec, Ahmed Nagaya, and Gorden Schubert**, ENT 422: Machine Design II

Faculty Mentor: Professor David Kukulka, Engineering Technology

Xylem is a local manufacturer of heat exchangers. Currently Xylem sources materials for their Shell and Tube Heat Exchangers from a company in Germany. Procuring their materials from overseas is not economical and requires long lead times. The objective of this project is to find a domestic supplier for the materials. Several design alternatives will be reviewed and the design that best meets all the requirements will be utilized to produce the heat exchangers. Additionally a cost analysis of each design will also be presented. Evaluations of the new designs are required to ensure that the original design objectives are met. Sourcing material domestically will lower the overall cost and create shorter lead times for the product. As a result of this study a lower cost heat exchanger will be produced.

**Presentation Type and Session:** Poster IV

## A Green Industrial Thumb: How Plant Design Inspires Modern Day Factories

**Joshua Kelly and Tasha Wright**, UNC 189: Information & Engineering Technology

Faculty Mentor: Professor Neal Mazur, Computer Information Systems

Modern day industrialization is composed of various factories and which play a significant role in technology as a whole in the same way different components of a plant play a significant role for the plant itself as whole. We will further explain the highlights of this comparison by dissecting the inner structure of two or three different



plants. By doing this, we will display how the structure of these plants have separate components that each serves a particular objective for a specific plant to function properly. In the same way, a modern day manufacturing factory has multiple departments that each has a successful contribution to that factory staying in business. For our presentation, we will collect data on the current status of a successful factory as opposed to an unsuccessful factory. We will show how each department serves a needed purpose and how the factory's success is determined if one department is shut down or not as productive as the others. We will also collect data to show what different systems of the plant exist, what purpose each one serves, and the effect on the plant as a whole if a certain aspect of that system is not as successful.

**Presentation Type and Session:** Poster V

## Hirth Attachment Coupling

**Justin Thompson, Chris McClellan, Austin Dibble, and Dan Unkrich**, ENT 422: Machine Design II

Faculty Mentor: Professor David Kukulka, Engineering Technology

FS-Elliott Co., LLC is the leading compressor manufacturer, specializing in oil-free centrifugal air and gas compressors. Centrifugal air compressors produce pressure by transferring energy from a rotating impeller into air. The capacity of the energy can be controlled by adjusting the inlet guide vanes. There are various ways to attach the main drive gear to the smaller pinion gear and power an air compressor. Some methods are more efficient than others however; some methods are also more costly. This project will focus on using the Hirth Coupling attachment as a viable replacement to the current polygon-shrink fit process. The current attachment process requires the heating up of the impeller to quickly fit onto the shaft, a nut is then quickly tightened to a snug fit, as it cools it becomes a near-permanent attachment; and in their lies the problem. Information will be gathered from FS-Elliott and outside suppliers as to determine and compare initial design, cost, and parameters needed to model a Hirth coupling in SolidWorks or AutoCAD for a P300 3rd stage Centrifugal Air Compressor. Thereafter a design computer program will be developed that will accurately size the attachment for any FS-Elliott Compressor and to also bring the process of machining the Hirth Attachment Coupling. This will reduce cost and layover time.

**Presentation Type and Session:** Poster V

## Hunter's Curve in the 21st Century

**Anthony DiMascio**, INT 689: Research Design and Methodology  
Faculty Mentor: Professor John Earshen, Engineering Technology

Recently issues have been raised regarding the accuracy of water demand estimation procedures for the design of plumbing systems, specifically those originally developed by Roy B. Hunter (1940). Hunter was able to establish an estimated demand curve for plumbing fixture units known as "Hunter's Curve" by analyzing the duration of flow, probability of use, frequency of use, operation

of supply valves and the type of fixtures being used throughout a plumbing system. Hunter's original guideline was widely adopted and became crucial for designing domestic water, waste and venting systems. While Hunter's curve has withstood the test of time and is the design basis for all international plumbing codes today, it is considered overly conservative. This is because contemporary plumbing fixtures are now much more efficient. The problem is that today, following Hunter's curve guidelines, designers are greatly over-sizing many plumbing systems, especially those using low-flow LEED type certified fixtures. This research project focuses on relevant mathematical, statistical and hydraulic modeling software methodologies and aims to propose a revision to Hunter's Curve. Such a revision, backed with sufficient empirical evidence, will be readily embraced by the industry. The outcome of this project will be both highly significant and much needed.

**Presentation Type and Session:** Oral – Business, Computer Information Systems, Education, and Engineering Technology

## Implementation of a Computer Management Maintenance System

**Trevor Riley and Corey Harris**, ENT 422: Machine Design II

Faculty Mentor: Professor David Kukulka, Engineering Technology

Roswell Park Cancer Institute (RPCI) is located in Buffalo New York and is currently the leading and most advanced cancer research facility in the world. Currently Roswell Park uses antiquated facility management software that is inadequate for their growing needs. The objective of this project is to propose a Computer Management Maintenance system (CMMS) software package that will meet the high demands of a facility such as RPCI, and increase overall efficiency of the engineering maintenance team. The new CMMS will; lower preventative maintenance costs, provide history logs of work done to particular equipment with cost analysis; issue work orders, track inventory, notify when resources need to be replenished; generate purchase orders, and many other aspects of managing a large facility. Five companies have been contacted and assessed with set criteria; once the most effective solution is determined this option will be pursued and implemented. Designs within the report are required to increase efficiency and lower costs as well as meet the needs and expectations of Roswell Park Cancer Institute.

**Presentation Type and Session:** Poster VIII

## ISO 9000 Certification: Overcoming Challenges to Adoption and Implementation in the Small Organization

**Arlin Venters**, INT 689: Research Methods

Faculty Mentor: Professor John Earshen, Engineering Technology

Since Edward Deming's introduction of a systems-based approach to total quality management after World War II, much further refinement has taken place. One important outgrowth of Deming's work was the publication of ISO-9000 standards, in 1987.



Today, the stipulations and elements of ISO-9000 are considered the world standard to: 1) Evaluate the quality and reliability of an organization's output, and 2) Realize process improvements by implementing incremental innovation. As such, companies seeking to compete in the global economy are well advised to prepare for and receive ISO certification. While highly desirable, making a commitment to obtain ISO certification is a significant undertaking, particularly for the smaller organization with limited resources. Many smaller companies clearly recognize the benefits of ISO certification, but the path to get there often seems too daunting to proceed. This paper will explore the extensive body of literature on ISO implementation, with the aim of distilling a set of recommendations and practical steps useful to smaller organizations seeking to become ISO certified.

**Presentation Type and Session:** Oral – Business, Computer Information Systems, Education, and Engineering Technology

## Pipe Flange Assembly and Gasket Standards for a Persulfate Manufacturing Plant

**Matthew Kalinowski**, INT 689: Research Methods  
Faculty Mentor: Professor John Earshen, Engineering Technology

In the chemical industry, the manufacture of oxidizers has a high unit cost but, if done properly, can be extremely profitable. The main issue dealing with oxidizers is the corrosive nature of the material through all stages of manufacturing. Any leak can result in a dangerous situation for plant operators - chemical burns to bare skin, eyes and even respiratory illness. Given the corrosive properties of these manufactured products, bare steel, copper, brass and concrete can be destroyed in a matter of minutes. Therefore, any leak can become a catastrophic structural failure. The investigator is a maintenance planner for a persulfate manufacturing facility, where leaking process pipe flange assemblies are a difficult and challenging ongoing problem affecting machinery health. The purpose of this study is to research and implement techniques and material solutions to eliminate leaking pipe flange joints in the plant. The expected outcome of this project will be to standardize gasket materials used and develop a best practice guide to train maintenance personnel. Additionally, it is expected that valuable data will be gathered regarding proper assembly/support techniques for flanged pipe.

**Presentation Type and Session:** Oral – Business, Computer Information Systems, Education, and Engineering Technology

## Protect the Dojo

**Myles Gordon**, UNC 189: Information & Engineering Technology  
Faculty Mentor: Professor Charles Arbutina, Computer Information Systems

I am developing a video game using the Alice program. The approach will be to leverage the object oriented computing concepts learned in the Alice programming class. Fundamental programming

concepts such as creating and manipulating objects, interacting with the user, using conditional logic and loops will be utilized. The project will include player input, moving objects and a backstory to show the player what is happening. The game will provide the player with entertainment as they fight against tough foes that will stop at nothing to take over the world they live in. The player is a Samurai trained as a child to protect the orb of time, when one day they are off guard and end up knocking the orb over while practicing form and skills. The orb now has brought dragons, robots, trolls, and other enemies unknown to the land. To emend for the wrong doings, the player must protect the kingdom at all costs.

**Presentation Type and Session:** Poster VII

## A Robot That Plays at Last: Robot P.A.L.

**Tanya Campbell** and **Susan Lin**, UNC 189: Information & Engineering Technology  
Faculty Mentor: Professor Stephanie Goldberg, Engineering Technology

A Robot that Plays At Last (Robot P.A.L.) is an interactive robot that engages in games with its user. These activities include shooting a ball into a basket and playing tic-tac-toe. The Robot P.A.L. will be built using the Lego Mindstorms system to accommodate these two games using a touch sensor, a light sensor, an ultrasonic sensor, and a motor. Robot P.A.L. will also utilize the NXT Brick (Brick microcontroller) to make its capabilities come to life. The NXT Brick is a 16-bit microprocessor that will integrate the programming system and the robot's hardware together. In order for the Robot P.A.L. to perform these specific duties, the NXT Brick must be programmed for every action. A touch sensor will be used as a push button switch so that the user can differentiate between the two activities that the Robot P.A.L. specializes in. An example of how the Robot P.A.L. works is as follows: to play tic-tac-toe, the light sensor will be utilized to do this. The light sensor will scan the paper for the tic-tac-toe gridlines, and the X's and O's. The NXT Brick will make decisions for the Robot P.A.L. based on what is on the paper. The Robot P.A.L. will be prompted to make a decision and write its result on paper.

**Presentation Type and Session:** Poster VII

## Stan's Medieval Quest

**Cordell Samuel** and **Bethany Person**, UNC 189: Information & Engineering Technology  
Faculty Mentor: Professor Charles Arbutina, Computer Information Systems

For our presentation, we propose developing a video game using the Alice system. The approach will be to leverage the object oriented computing concepts we learned in the Alice programming class. Fundamental programming concepts such as creating and manipulating objects, interacting with the user, using conditional logic and loops will be utilized. The theme of the game is based off of the medieval time period. The main character, Stan, lives in a small

town with his wife and children and hoped for a simple life. However, his wife and children were then taken by the king as ransom for paying off a debt on the land. This sends Stan on an adventure; a quest in search of his wife and children. Along the way he encounters different obstacles and extreme dangers such as trolls, dragons, and people who plan to do him harm.

**Presentation Type and Session:** Poster VIII

## Stop Controlling Me; I'm Not a Robot... Oh Wait I Am!

**Jamal Thomas and Jazmin Black**, UNC 189: Information & Engineering Technology

Faculty Mentor: Professor Stephanie Goldberg, Engineering Technology

The Lego Mindstorm Robotic System incorporates several fields of engineering ranging from mechanics to electronics. When using the robot one can design, build, and control the device to perform basic to complex actions. We will develop code and arrange the robotic system to model a three-speed transmission with a clutch. Three different gear ratios can be achieved by using a stick shift lever. We will use a touch sensor to select optional cruise control. The purpose of our project is to simulate and analyze a simplified transmission system. Our transmission system is controlled by the NXT Intelligent Brick that features a powerful microprocessor and flash memory. The brick also contains several input and output ports for our sensors and motors. The robot is programmed by user-friendly software that uses block code. These blocks are arranged in a flowchart style and represent various commands. The Mindstorm is a great tool for simulating real world engineering systems.

**Presentation Type and Session:** Poster VIII

## Survival Sterilization System

**Vincent Macaione, Franco Tallarico, Michael Marvin, and Michael Rudik**, ENT 465: Senior Design

Faculty Mentor: Professor Edward Purizhansky, Engineering Technology

Survival Sterilization System is a mobile device that uses ultra-violet waves to sterilize bacteria in water. This device is used to provide sterile water for hydration where clean, ingestible water is not available. Short wave ultra-violet radiation is used in this device. This type of ultra-violet wave is harmful to microorganisms, and causes them to become sterile. The device is powered by a rechargeable battery pack that will provide approximately twenty clean cycles out of one charge. A stone filter is installed in the unit to filter larger particles before they exit the container. There are many safety features in this device that insure the user is not exposed to the ultra-violet radiation. The device cannot be powered on until the cap is screwed on completely, and cannot be removed until the clean cycle is complete and the UV bulb is cooled down. Survival Sterilization System is targeted at people who go camping or hiking and need clean water to stay hydrated. Unlike other similar available

products, this device can sterilize up to one gallon of water per clean cycle. The water can then be brought along and consumed whenever needed.

**Presentation Type and Session:** Poster V

## The Things "Little Guy" Can Do

**Christopher Jordonne**, UNC 189: Information & Engineering Technology

Faculty Mentor: Professor Stephanie Goldberg, Technology

I am writing a program for a Robot that is based on Lego Mindstorm and this Robot will be known as "Little Guy." He will be able to perform several different functions that are centered on audio and touching commands. First, the Little Guy will have limited communication in the English language. The only way he will be able to react is if specific frequencies, such as clapping, whistling, or talking are given to him. There will also be options that will allow the Little Guy to change his language given specific frequencies. At least 5 languages are programed into the Little Guy. Furthermore, people are allowed to physically contact the Little Guy and he will have a set of reactions based on the programs built into him. This will give people another avenue of interaction with the Little Guy and make the experience more worthwhile.

**Presentation Type and Session:** Poster V

## Using App Inventor to Create 2D Video Games

**Jeffrey Lau and Danso Frimpong**, UNC 189: Information & Engineering Technology

Faculty Mentor: Professor Andrew Garrity, Computer Information Systems

Over the years many software programs have been written to bridge the gap between the computer programmer and the non-programmer interested in creating computer programs. App Inventor is a software program that allows non-programmers to create Android apps for mobile devices including 2D video games. Creating 2D video games app with App Inventor offers interesting programming challenges including creating movement with coordinate geometry, coordinating the interaction of objects and keeping score using variables. App Inventor is a free, open-source, web-based software program that allows non-programmers to create Android apps using code blocks and a graphical user interface along with cloud data storage hosted by Google. App Inventor was created by Google, Inc. and is now run by the MIT Center for Mobile Computing. App Inventor is easy to learn and can be used to create a wide variety of Android apps. The app for this project is being created using App Inventor version 1 for writing the code, and MS Paint for creating graphics files. Sound clips used by the app will be downloaded from the web. The app will be tested using the Android Emulator and displayed on a Samsung Galaxy 7 tablet mobile device.

**Presentation Type and Session:** Poster VII

## **Website and App: Ghosts Random Class Generator**

**Andrew Elbaneh**, UNC 189: Information & Engineering Technology

Faculty Mentor: Professor Andrew Garrity, Computer Information Systems

My project is a combination of a website and an Android app linked to each other to roll a random class for the player. This provides new enjoyment for the game. For example, it may choose a gun you have never used. It also introduces a challenge because you never know what you're going to get as a class, it could be good or it could put you at a huge disadvantage, but that's where the fun comes in trying to win and do well in the game when you're using this crazy class that you normally wouldn't. The random class generator will only work for the most recent game "Call of Duty Ghosts." It is being designed so players can login either from the app or from the site. This saves the settings for the random class generator that will sync between the app and the site, so when you want to roll a class your settings are up to date no matter which platform you are playing on. And, by bringing fresh to the game, more people should be able to enjoy it.

**Presentation Type and Session:** Poster VIII

## **What's Good About Computer Viruses?**

**Jasoswinee Behera**, INT 689: Research Methods

Faculty Mentor: Professor John Earshen, Engineering Technology

The security of computers is an important concern for any organization that uses computers. The most common and damaging security attacks are mounted using programs called viruses. Computer viruses are small software programs designed to spread from one computer to another and to interfere with computer operation. Many computer viruses are stopped by virus protection software before they can do damage, but there is a constant barrage of new and more stealthy viruses that are increasingly difficult to detect and neutralize. This research paper will take an alternative view of the computer virus. In this project, we will investigate the aspects of a very specialized and select group of viruses whose special purpose is to protect, rather than to damage computers. These so-called 'beneficiary' viruses are particularly worthy of study because many of the same attributes of mal-ware (easy transmission, relative invisibility) can actually be turned towards doing good for computer users. This research aims to describe the specific mechanisms and characteristics of the beneficiary virus and to make a case for the promotion of these 'good' viruses in the cyberworld of today and tomorrow.

**Presentation Type and Session:** Oral – Business, Computer Information Systems, Education, and Engineering Technology

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## *Education*

### **Chemistry in the Classroom: An Experimental Approach to Chemical Education**

**Nathan Busch**, HON 400: Muriel A. Howard Honors Colloquium  
Faculty Mentors: Professor Anne Marie Sokol, Chemistry and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

This is an ongoing development of techniques and experiments useful in explaining and demonstrating some of the fundamental concepts of chemistry. Students tend to have difficulty comprehending many of the conceptual topics of chemistry such as half-life, stoichiometry, molarities and titrations. Approaching these topics with hands on student centered experimentation allows topics to be solidified into concrete first hand experiences students will be able to understand and recall more easily. Research suggests experiment based learning is a more powerful tool than written, audible, visible and discussion techniques. It is suggested that approximately eighty percent of what students experience personally is committed to their memory. In addition hands on learning better prepares the pupil for work in the laboratory, giving them a better experience of what the chemical sciences are like in upper level classes and in the industrial or research professions. For this reason it is my belief that learning based on doing should not be limited to the laboratory, but instead should extend to the classrooms and homes of students. It is my hope to develop experimental techniques that could be used in classes here at SUNY Buffalo State College as part of the curriculum taught in introductory level chemistry classes especially those that do not require a laboratory session. Experiments and findings will be shared in this poster.

**Presentation Type and Session:** Poster VIII

### **Classical and Multicultural Approaches to Education**

**Rachael Saathoff**, English Education  
Faculty Mentor: Professor Jason Grinnell, Philosophy

The various methods and schools of thought found in philosophy of education cover a wide range of views, beliefs, techniques, and historical periods. The classical and multicultural approaches provide a glimpse into that world. They pull from drastically different histories and pedagogy, but they share a value of learning and education. With ties going all the way back to Aristotle and Ancient Greece, classical has had many centuries to develop and change. On the other hand, the relatively young multicultural approach springs from a increasingly globalized world dealing with diversity and culture differences. Even within the two approaches there are differences. Classical educators can disagree about content or focus, and multicultural educators often differ on matters of technique or process. This research seeks to explore the separate histories of

classical and multicultural education. It also examines what the two would say to each other if "Dr. Classical" and "Dr. Multicultural" sat down over a metaphorical cup of coffee to discuss their thoughts on learning, teaching, human nature, and the purpose of education. How would multicultural answer classical's questions about teaching students to "love what is good"? How would classical respond to multicultural's concern with hearing minority voices? By listening in on the conversation, educators may see their own philosophy of education developing or expanding to address each position's concerns.

**Presentation Type and Session:** Poster III

### **Collaboration between Buffalo State and PDS Partner Schools to Implement DASA Antibullying Curriculum**

**Katherine Knauf**, Childhood Education  
Faculty Mentor: Professor Nanci Monaco, Elementary Education and Reading

The Dignity for All Students Act (DASA) was implemented in New York State in July 2012, requiring that school personnel and administrators receive training regarding changes in the anti-bullying laws and the responsibility of schools when bullying occurs. Approximately one year later, all teacher candidates applying for certification are now required to obtain 6 hours of training in best practices regarding anti-bullying initiatives, enforcing DASA provisions, working with parents of bullies and victims, empowering bystanders, cyberbullying, the relationship between bullying and school violence, etc. After attending five sessions at the Jean Alberti Center for Research on Bullying at University at Buffalo and reviewing 40 research articles on best practices implementing antibullying curriculum, I visited three of our partner schools to critique their antibullying efforts. A comparison was made between best practices in the literature and actual practices in our partner schools. Meetings were held with K-8 staff to discuss how their existing programs could be supplemented or changed to be more consistent with best practices. This poster presentation will showcase that comparison and suggestions for improvement.

**Presentation Type and Session:** Poster I

### **Critical Mathematics Education + Digital Social Media = Engaged Adolescents**

**Cathy Amdur**, Mathematics Education  
Faculty Mentor: Professor Jevon Hunter, Elementary Education and Reading

Digital Social Media (DSM) holds tremendous potential to engage adolescents struggling in mathematics. This research study explored the learning potential of DSM in mathematics by addressing three questions: 1) Why do students struggle with mathematics?, 2) How are students being engaged in mathematics to overcome the struggles?, and 3) How can Digital Social Media be part of the solution? Drawing from critical perspectives in mathematics education (D'Ambrosio, 2001; Frankenstein, 1990)



and using qualitative research methods, a series of interviews and observations were conducted to capture the mathematics interests and abilities of a middle school male student. Then, a pilot mathematics lesson was created where the student was asked to produce a multimedia video based on his interest: sushi making. We then engaged in multiple conversations where we discovered the mathematics in making sushi. With this newly acquired knowledge, the student enhanced his video by including a voiceover, explaining the mathematics principles in sushi making. He then uploaded his video to Tumblr, a social media site, to be shared with a wider community of learners. I will argue that when a collection of videos are shared with a community of mathematics learners on Tumblr, a conversation about mathematics understanding begins to take into account the ways mathematics operates in the everyday lives of adolescents and allows them to display an emerging expertise. This presentation includes 1) a review of relevant literature, 2) a model of mathematics instruction using DSM, and 3) the student-created video of mathematics understanding in sushi making.

**Presentation Type and Session:** Poster III

## Do Students Benefit from Having Recess Every Ninety Minutes?

**Ellen Erman**, INE 390: International Education

Faculty Mentor: Professor Pixita Del Prado Hill, Elementary Education and Reading

According to Brown (2013), “Kids learn best when they take breaks after periods of study – and recess, whether it involved physical activity or just hanging out, has been shown in studies to improve cognition, making students more attentive and productive.” My observational study involved a comparison of recess practices in Santiago, Chile and in Buffalo, NY. In Santiago, the students have recess every 90 minutes. In Buffalo, most schools no longer have recess periods. If they do have recess, the break is 15-20 minutes and not held every day. According to Wood (2011), “After recess, for children or after a corresponding break time for adolescents, students are more attentive and better able to perform cognitively.” To gather information, I observed how the students acted before and after they had recess in Santiago and throughout the day in Buffalo (since children do not always have recess in New York). A major conclusion I reached is that providing students recess every ninety minutes benefits the students as well as the teachers giving them time to plan, relax, and get ready to teach another lesson.

**Presentation Type and Session:** Poster III

## Dramatic Play Areas

**Courtney Hartman**, EDU 690: Master’s Project

Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

The topic of using play to learn increasingly has become a controversial discussion in the educational field. When used effectively in the classroom, play, specifically dramatic play areas,

permits students to expand and deepen their knowledge of the content and the world. The dramatic play areas help to recreate everyday situations, which allow students to explore different ways to handle those situations along with digging deeper into the community aspect of them. Teachers can provide environments that allow the students to explore, expand, and use their creativity to learn. In those environments, the students took learning to the next step without even realizing that they were learning because they were having too much fun. I wanted to see how dramatic play areas would enhance their learning of the topics being taught in the English Language Arts curriculum along with literacy. I believe that the dramatic play areas, being focused on the topics being taught in the classroom, will reinforce and therefore deepen the students’ knowledge of the topics. This Master’s Project focuses on community and community helpers. The play area included a fire station, bakery, bookstore and police station. These areas will help the students dig deeper into learning how these are community helpers, and how they contribute to the community. These dramatic play areas will be used during the morning and during the afternoon. They will contain dress up clothing, props, writing areas and reading materials. The writing and reading portions will include picture books, receipts, food orders and journals.

**Presentation Type and Session:** Poster III

## Early Literacy in Two Montessori Schools

**Leah White**, INE 390: International Education

Faculty Mentors: Professor Harriet Sacks, Elementary Education and Reading and Professor Wendy McLeish, Elementary Education and Reading

This research project focuses on emergent literacy in a private early childhood school, Tres Mariposa, in Cabarete, Dominican Republic, and Buffalo Montessori in Buffalo, New York. During my visit at Tres Mariposas Montessori School, discussions were conducted with staff, parents, my host family and people of the community to gain a better understanding of their view of the importance of literacy, the ways literacy is taught and family participation. A comparison was done with the schools Tres Mariposas Montessori School and the Buffalo Montessori. After analyzing the information collected from both schools the data also concluded there is much work to be done assisting students to gain a love for reading, to identify each student’s level and to make more time for the teachers to read books. In both schools the development in language and the emphasis on sensory development is key to understanding the Montessori method. Comparing these two programs will allow me to share the strengths and correct the weaknesses in each of the programs.

**Presentation Type and Session:** Poster II



### **The Economics of Education: The Management of Learning**

**Heather Dennis**, ECO 101: The Economics System

Faculty Mentor: Professor William Ganley, Economics & Finance

In a world frayed with economic problems and increasing uncertainty a basic course in economics and modern capitalism fills a fundamental intellectual need for college freshmen. The Economic System, a course that fills that need, was redesigned to engage freshmen and stimulate learning core economics and how modern capitalism operates. The redesign of The Economic System course focused on two critical elements to manage the learning process for these students: (1) a greater focus with on-line learning; (2) the utilization of undergraduate teaching assistants. The redesign model was based on the successful experience of The National Center for Academic Transformation with a hybrid course format. The hybrid model combined classroom lectures, on-line learning, and the mentoring role of undergraduate learning assistants. This paper will describe and analyze the evolution of this course from pilot study to full redesign implementation over a five year period. Special attention will be devoted to the unique role of the undergraduate teaching assistants, each of whom provides guidance to groups of 25 to 30 students. These TAs monitor the on-line learning process on weekly basis. The goal is enhanced student engagement in the learning process through peer-mentoring. The paper will highlight the improvement in student learning outcomes, as well as the cost savings through this approach.

**Presentation Type and Session:** Poster V

### **Encouraging Men to Become Elementary School Teachers**

**Richard Hoey**, Childhood Education

Faculty Mentors: Professor Pixita del Prado Hill, Elementary Education and Reading and Professor Leslie Day, Elementary Education and Reading

Data indicate what anyone would be able to observe by stepping into an elementary school: teaching, especially with regard to the younger grades, is a profession that is absolutely dominated by women. A 2006 study by the National Education Association showed that preschool and elementary school children are taught by 75 percent more female than male teachers. After reviewing the literature (e.g. Gamble, 1997; Sanatullova, 2010); however, it is not fully clear how more men might be encouraged to enter the field. As a male majoring in elementary education addressing this issue has become of great interest to me as I move forward. Through the use of surveys and interviews, I will be collecting data from other men who have chosen to work in elementary education. These men will be fellow teacher candidates (from introductory courses to junior participants up through student teachers) as well as teachers and principals currently in the field. The central questions posed will include: why they believe there is a noticeable lack of men in

the field, what steps could be taken to remedy this situation, and if and why they feel it is important to have more men in education. This research and poster presentation will relate to the first of the NAPDS Nine Essentials. It is my hope that the results will provide insights for a more complete understanding of the issue and how this information might be used to promote equity within schools as well as the community as a whole.

**Presentation Type and Session:** Poster II

### **Global Freedom Fighters: Using Multicultural Biographies to Teach About Global Human Rights**

**Erin Cappello**, EDU 690: Master's Project

Faculty Mentor: Professor Coralee Smith, Elementary Education & Reading

Our classrooms are undergoing a change in appearance. The classrooms of today look very different than the classrooms of yesterday. Our students come from very diverse backgrounds, cultures, experiences, and customs, and all of this needs to be acknowledged and celebrated by classroom teachers within the school curriculum. In order for our students to make connections to their education, they need to feel represented within the materials they are reading; they need to see themselves in the curriculum. By using biographical materials about various historical and modern day figures from around the globe teachers, can create a multicultural unit that represents their diverse classroom community. Research states that when studying biographies it is most effective to choose a common theme or historical era. My project explores the theme of global human rights and the individuals who fought for them while combining English Language Arts and Social Studies objectives.

**Presentation Type and Session:** Poster II

### **Greater Than Me, Globally!**

**Anna Morton**, Early Childhood and Childhood Education

Faculty Mentor: Professor Kim Truesdell, Elementary Education and Reading

Global Book Hour is a weekly program for children on the West Side and Black Rock neighborhoods in Buffalo. The mission statement of Global Book Hour is that it seeks to use high quality literature, global awareness and nutritious eating for the growth of children and development of new teachers. GBH takes place at Wegmans on Amherst Street (for 10 semesters) and the West Side Value Laundromat (for 2 semesters). Teacher candidates introduce a country and vocabulary, read aloud a global picture book, and create art activities to extend the theme of the book. Music education students provide appropriate music and a healthy snack is provided. The theme of all the books this semester is "Pay it Forward" or how can we make our world better. To help with this message, the Greater Than Me Network, a group of EER teacher candidates, are

working with GBH to assist children in creating “pay it forward” good deeds. Inspired by the message in the books each week, the children are to record their good deeds during the week, and I will record the deeds and how they have impacted their outlook on others locally and globally. At the end of the semester, all the good deeds will be presented in a creative, tangible way (which is still being worked out). I will be examining these entries and interviewing the children to determine whether and how the Global Book Hour has influenced their decisions.

**Presentation Type and Session:** Poster III

## **The Handbook for Decreasing Children’s Misconceptions when Learning to Tell Time**

**Colisha Smith**, EDU 690: Master’s Project

Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

“Telling time is often taught as a rote skill, without ensuring that children understand the duration of time and its relation to the numbers and hands on a clock” (Thompson and Van de Walle, 1981, p.4). This is an ongoing study on the misconceptions that students have when learning to read time. I chose this topic because during student teaching I noticed that many students were struggling to tell time and needed lots of one on one time with this particular concept. This Master’s Project will find and use methods that will decrease the misconceptions that students have. Student interview responses, surveys and classroom observations from students in both America and Zambia will be used to construct lessons and activities that may help students to enjoy and understand the concept of time. The participants will be 1st and 2nd graders who attend a private school in either America or Zambia. The participants have had the opportunity to partake in some of the activities and methods that will be included in this Master’s Project. Their feedback and suggestions along with previous research have molded the lessons and activities that will be suggested. Previous research has shown that telling time is difficult, thus more research needs to be done to help minimize the difficulties (Harris, 2008). This information can help educators to motivate students to learn the concept of time in addition to learning a few methods that have been successful in teaching the concept of time according to previous studies and students’ interview responses.

**Presentation Type and Session:** Poster I

## **How Does Instruction Take Place in a Dominican Republic Preschool?**

**Sara Honsberger**, INE 390: International Education

Faculty Mentor: Professor Wendy McLeish, Elementary Education and Reading

This research project examines the differences between preschools in Western New York and a private preschool in Cabarete, Dominican Republic. The educational facility in Cabarete, Dominican Republic is called Tres Mariposas Montessori School and is located

on the outskirts of a small town called La Cienaga. Tres Mariposas thrives off of the love of their community and the endless support of their educators and staff. In particular, the data that has been collected and analyzed shows how teachers utilize their classroom materials. Through continuous discussion with the staff and through personal annotations during time spent at Tres Mariposas, a comparison will be done of any observations to previous experiences within preschools in WNY. A combination of written data reveals how well the teachers and children utilize their classroom materials, how the classroom is set-up, and their particular daily routines. There are many differences between the Montessori philosophy and the philosophies of public schools. A particular significance found in the different educational settings is that in the Montessori setting children are more independent and self-reliant in carrying out daily classroom routines and procedures, whereas in traditional school settings children tend to rely on adults for support and direction.

**Presentation Type and Session:** Poster I

## **How PDS Prepares Teachers for Urban Schools**

**Madeline Otero**, Childhood Education and Mathematics 7–9

Faculty Mentors: Professor Leslie Day, Elementary Education and Reading and Professor Pixita del Prado Hill, Elementary Education and Reading

Buffalo State education students are motivated and enthusiastic about completing the transformation from teacher candidate to professional educator. It is the Elementary Education and Reading Department’s responsibility to prepare teacher candidates to teach in a variety of diverse school settings. Buffalo State accomplishes this with its award winning Professional Development Schools Consortium. Through Buffalo State’s PDS partnerships, teacher candidates are able to learn authentically in a wide range of schools. At Buffalo State, the process of becoming a professional educator is lengthy and emphasizes the importance of praxis, theory informing practice through reflection (Hoffman-Kipp et al, 2003). As teacher candidates move through the program, they are increasingly exposed to authentic classroom settings until the culminating experience of student teaching. Each classroom experience has a direct impact on their development as new teachers. My research will focus on teacher candidates and their experience in urban schools. Through surveys, information on teacher candidates’ attitudes, experiences, and preparation levels will be examined. A group of teacher candidates in an introduction to education course will be surveyed to identify the impact of completing a shadow experience in an urban school. Pre-surveys have been administered and plans for post-surveys have been established. In addition, the ways in which the Buffalo State PDS prepares teacher candidates to teach in an urban setting will be explored.

**Presentation Type and Session:** Poster I

### Integrating Technology into Writer's Workshops

**Nichole Stefanski**, EDU 690: Master's Project

Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

Technology is evolving and adapting to meet the needs of our day-to-day lives. In today's society technology is a dominant aspect of how we perform in schools, perform in our jobs, and how we communicate with others. Due to the increasingly high use of technology and the affects it has on students writing abilities, technology should be worked into the educational curriculum. Integrating technology into writing workshops can allow for a wide range of possibilities and changes to happen throughout the year. By exploring the vast spectrum of technology students may be able to take the writing process seriously. Using technology can allow students to take risks with their own writing and to be able to create different ranges in their writing skills. A common way to get students excited about writing is by allowing the students to publish their work through posting on-line or through printing. In order to create excitement for writing we need to have our students know the resources that are available to them through mini-lessons and through conferencing. By incorporating technology into writing workshops, students are able to explore their writing skills and process in a new and different way compared to using traditional pen/pencil and paper.

**Presentation Type and Session:** Poster II

### Keeping Teacher Candidates Connected Through Technology

**Danielle Jarosz**, Childhood and Early Childhood Education

Faculty Mentors: Professor Leslie Day, Elementary Education and Reading and Professor Pixita del Prado Hill, Elementary Education and Reading

As technology expands and becomes a more dominant form of communication, SUNY Buffalo State stays current by offering a Professional Development Schools (PDS) Consortium website, an acronym website, and a Facebook page for our teacher candidates. These pages keep candidates updated with what is happening in the Consortium and in the field of education. Teacher candidates can learn how to get involved and learn from professional development opportunities. All online sources are monitored for daily activity. The acronym website ([www.acronyms4teachers.com](http://www.acronyms4teachers.com)) was started last year and has successfully grown over the last twelve months. The idea was developed when teacher candidates expressed a need to become more familiar with acronyms and academic language. To make this information easily accessible, a website was created with the idea that it would be the most convenient format. This website allows teacher candidates to become familiar with the many acronyms that are important in education. A vital part of this website is the "Teacher Candidate Must Know List." This list includes significant acronyms that will help teacher candidates use academic language in interviews, during certification exams, and throughout

class discussions. We have been closely monitoring the use of this website and assessing teacher candidates' knowledge base of the twelve acronyms from the "Must Know" list with pre- and post-surveys at different points in their programs. Results of these surveys will be analyzed and shared. We hope to expand teacher candidates' academic language with this project and expect it to become a helpful resource for all educators.

**Presentation Type and Session:** Poster II

### Learning Styles: Which One Are You?

**Carolyn Alston**, Early Childhood Education

Faculty Mentor: Professor Beth Slazak, Educational Opportunity Program

I examined the reasons why knowing your learning style can be advantageous and contribute to your academic success. Being aware of how you learn can help you be proactive and seek out opportunities to apply your learning style. It also can help you adjust to professors' teaching styles and even make you aware that your learning style and your professors' teaching styles are not the same. Individuals with auditory learning styles, like me, can become even better listeners and take advantage of our ability to receive and process verbal information. This presentation includes an overview of various learning styles, how an individual can identify their preferred learning modality, and strategies for adjusting your learning style to that of your professors.

**Presentation Type and Session:** Oral — Business, Computer Information Systems, Education, and Engineering Technology

### The Link between Work and Play in the Classroom Setting: Comparing Classrooms in Chile and the United States

**Micaila Herd**, Early Childhood and Childhood Education

Faculty Mentors: Professor Pixita Del Prado Hill, Elementary Education and Reading and Professor Nancy Chicola, Elementary Education and Reading

While I was in Chile, I researched how increased playtime affects classroom management. The Chilean students have a 15-minute break every 90 minutes for them to play in the outdoor courtyard and rest from their learning. However, in the United States, students have one longer break throughout the day, and may be outside depending on the weather. I plan to present on how the many breaks and recess time that Chilean students had during the day affected how they behaved during instruction compared to the United States. It has been observed that even with structured breaks and the structure of the teaching of content, the Chilean classroom was not well managed, as it took a long time for the children to settle down after breaks. They were constantly in and out of their seats, as there wasn't any work given to them to work on upon their return. In addition, the teacher would not settle the class down right away. The teacher was not prepared and didn't have anything for the children to work on when they returned to the classroom from their break. However, some of the benefits of having the students take a break

every 90 minutes, was that it allowed them to transition from one content area to another. In addition, it allowed them to rest their brains and stay focused on the rest of the material being taught throughout the day. I am continuing my research throughout my student teaching, as I observe how one longer break throughout the day affects the classroom management styles of the Buffalo teachers. I am comparing the classroom management in the United States schools to what I observed in the Chilean schools and plan to use photographs, quotations from the teacher whose classroom I observed, and my observations to effectively portray the differences in classroom management between the Chilean schools and the United States.

**Presentation Type and Session:** Poster II

## Methods to Increase Parent Participation in Education

**Kaitlyn Gardner**, Childhood and Early Childhood Education

Faculty Mentors: Professor Pixita del Prado Hill, Elementary Education and Reading and Professor Leslie Day, Elementary Education and Reading

Parent participation in education leads to better social, behavioral, and academic outcomes for students. Increased parent involvement correlates with higher grades, lower drop-out rates, and greater student behavioral self-control (Smith, Wolhstetter, Kuzin, and De Pedro, 2011). Family involvement cultivates cognitive and emotional resilience in students and provides families with a better understanding of their children's educations (Morrison, Storey, and Zhang, 2011). The aim of my research is not to demonstrate the importance of parent involvement but, rather, to explore how educators can increase parent participation in education. Increasing parent participation in education requires strengthening five key areas: 1) communication between schools and families, 2) parent involvement at school, 3) parent involvement at home, 4) the provision of services and community supports for families, and 5) the provision of professional development for educators. To begin, a review of the current research examines what experts in the field suggest be done to increase parent participation. Then, parent surveys regarding the five key issues in increasing parent participation demonstrate how parents are involved and what motivates their involvement. Combining theory with data analysis exposes the disparities between research and practice, resulting in a list of approaches to increase parent participation in education.

**Presentation Type and Session:** Poster I

## Scientific Inquiry: A New Approach to Teaching Science in Elementary School

**Nicole Pilarz**, EDU 312 The Teaching of Mathematics and Science in the Elementary School

Faculty Mentors: Professor Laurie Naab, Elementary Education and Reading and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

In the past, teaching science in elementary school has been done through rote memorization and reading from the textbook. Research found that many students felt unengaged and disconnected from the material. Recently, educators have been considering a new approach to teaching science in elementary school known as scientific inquiry. This is a process that includes students asking a question about the natural world that is of interest to them. Then they make predictions, develop and conduct an experiment, come up with an explanation and discuss it as a class. This method of learning is process based and student directed where the teacher plays the role of the facilitator; guiding students toward material that needs to be covered and expanding their thinking. Using this method, science is even being taught at the preschool level, which was avoided in the past. Through my research of professional education journals and personal experiences in the classroom, I will explore how to correctly implement scientific inquiry, why it is considered to be so effective, and at what age it can be successfully implemented into the curriculum.

**Presentation Type and Session:** Poster I

## Sketch and Stretch Strategy in Santiago, Chile

**Anna Morton**, Early Childhood and Childhood Education

Faculty Mentor: Professor Pixita Del Prado Hill, Elementary Education and Reading

Stretch and Sketch is a strategy that can be used to support structured retelling of stories that are either read by or to students. The strategy was conducted with a 3rd grader at Enterprise Charter School in Buffalo, NY. A rubric was used to assess his efficiency in retelling with and without the strategy. With this student the Stretch and Sketch strategy worked remarkably well and his comprehension skills improved. He also claimed that this strategy gained his interest by participating in a skill he enjoyed. In Santiago, Chile the Sketch and Stretch strategy was conducted with a student at the same grade level as the student who attended Enterprise Charter School to assess the suitability of the strategy in a different cultural setting. The Sketch and Stretch strategy didn't succeed as planned mainly due to the language barrier. The student did not speak English; therefore, the performance of the strategy was executed incorrectly. There was not an opportunity to ask follow up questions for the assignment or speak to the classroom teacher because of the language barrier. Although, this was a setback for accurate research on the Sketch and Stretch strategy in Chile, important learning occurred from this experience. For example, the next time the directions will be translated. Also, when it was realized that the student did not speak English, innovation was necessary. The physical education teacher had walked by and he was asked to translate the directions to the student, which he did resulting in an opportunity to implement the strategy.

**Presentation Type and Session:** Poster I



### **Teacher Candidate Growth Through Global Book Hour: From Student to Mentor**

**Jasmine Davis**, Early Childhood and Childhood Education

Faculty Mentor: Professor Kim Truesdell, Elementary Education and Reading

Global Book Hour is a cooperative learning experience through Buffalo State College and the community that teacher candidates take in EDU 211, Introduction to Literacy. Teacher Candidates learn basic skills of the roles that a teacher exhibits when teaching a class. Each week Teacher Candidates perform different roles that include a read aloud, vocabulary lesson, art activity and introduction. Students use these experiences as a basis of learning how to teach literacy to students in the community. I've been involved in Global Book Hour for three semesters. I started as a Teacher Candidate in EDU 211 and quickly found a strong interest in the learning experience, so I continued to stay involved and became a mentor to present teacher candidates in EDU 211. Through my experience, Global Book Hour has grown from one location at Wegmans on Amherst Street to another location, The Wash Laundromat on Massachusetts Street. This program has turned into a globally effective learning experience teaching ALL students from many communities, backgrounds, and ages. Through the growth of Global Book Hour, my experience has grown as well; therefore I would like to reflect on that growth through this project. The purpose of my research is to collect data and compare how becoming a mentor to EDU 211 students who partake in Global Book Hour has enhanced my teaching. I will reflect on my past teaching experience as a Teacher Candidate in Global Book Hour and my experience currently as a Teacher Candidate mentoring Global Book Hour students.

**Presentation Type and Session:** Poster I

### **Teacher Efficacy: Influences from Gender and School Climate**

**Lasasha Oyo**, English

Faculty Mentor: Professor Myrtle Welch, Social & Psychological Foundations

Ineffective teaching is researched under the research agenda, teacher efficacy. When teachers ineffectively teach students, students are left behind and challenged by the education system. Understanding this research agenda requires unpacking the factors responsible for ineffective teaching. Two factors emerge in this study--school climate and gender. Hughes (2012) believes that teacher burnout and teacher turnover happens when a school's climate is inadequate. School climate does not mean the temperature at the school but the temperament at the school. School climate in this study is defined through examples of attitudes, perspectives, behaviors, and availability of physical resources. Hughes (2012) suggests that women's likeliness of leaving the teaching profession at a faster rate than men is not related to the quantity of women in the profession. Therefore, in this study, gender is viewed through parallels between men and women in respect to, salary, rates of

promotions, and teaching styles. This study will examine the extent to which gender and school climate influence teacher efficacy. This is a qualitative research study with twelve participants, who are teachers at two different types of schools-- urban and suburban.

**Presentation Type and Session:** Oral -- Business, Computer Information Systems, Education, and Engineering Technology

### **Using the Social Studies and Reading Standards to Teach About Individual Development and Cultural Identity**

**Natalia Kim**, EDU 690: Master's Project

Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

Young children start forming a cultural identity at an early age as they begin noticing differences and similarities among themselves and other people. It is important to acknowledge children's abilities to acquire new knowledge, recognize people's attitudes and behaviors, and apply new knowledge to new situations. My curriculum project focuses on teaching individual development and cultural identity to kindergartners. Based upon the social studies and English language arts standards, this interdisciplinary thematic unit helps justify why young children need to learn about their development and identity. The project also provides a curriculum map with several activities and assessment tools for teachers to implement in classrooms. The classroom activities will help young students develop communication skills, problem-solving skills, critical thinking skills, interpersonal skills, and intrapersonal skills. Teaching individual development and cultural identity to young students is important because students live in an increasingly diverse world. Students need to learn ways for interacting effectively with peers and adults now and in the future. Learning about personal identity will help students develop interpersonal relationships with diverse people. Students in homogeneous communities may need this knowledge when they leave these communities for college or careers. Young children should learn to look past differences to see value in other people. Another reason why students need to learn about their identity is that seeing differences in society will help them recognize and develop different perspectives. Students given only one viewpoint do not develop the ability to acknowledge multiple perspectives. Developing multiple perspectives will help them see multiple solutions to problems.

**Presentation Type and Session:** Poster I

### **Writing Our HEA Story**

**Joanna Stein**, Higher Education Administration and **Anthony Nicosia**, Higher Education Administration

Faculty Mentor: Professor Wanda Davis, Higher Education Administration

The Higher Education and Student Affairs Administration (HESAA) master's program, initially titled the Student Personnel Administration (SPA) program, at Buffalo State, was designed

when the college's administrators discovered a lack of qualified professionals in the hiring pool. This historiography of the Higher Education Administration Department provides an in-depth look at the beginnings of a program that has grown to be one of the largest and most diverse of its kind, and its transition into its own department in recent years. Through the review of primary documents, institutional data and personal interviews, this qualitative study sought to follow the development of the HESAA program through almost five decades. It provides information about curriculum, internships, program evaluation, and the development of a comprehensive exam to evaluate learning outcomes of students prior to graduation. The study documents award recipients as well as program and department chairs since the program's inception and includes a timeline of important events. Findings indicate that the fundamental goals, objectives and values of the program have remained largely the same over time. Core curriculum has remained essentially the same as well, while new electives have been developed to meet the needs and interests of the profession. The size of the HESAA program has grown significantly over time and alumni are employed at institutions throughout the nation.

**Presentation Type and Session:** Poster III

### **Youth Participatory Action Research in Elementary and Middle School Education**

**Phylicia Brown**, EDU 690: Master's Project

Faculty Mentor: Professor Coralee Smith, Elementary Education and Reading

My research project seeks to find a way to transform Youth Participatory Action Research (YPAR), a traditionally high school and adult centered learning opportunity, into one that can be used with students of upper elementary school age. YPAR can be described as a revolutionary act of education in which students lead their own action research projects about some type of injustice that is plaguing them and their communities. Previous research has shown that, at the high school and adult student level, students not only developed, but also mastered, innumerable skills such as critical thinking, reflection, reporting, and problem solving. In my project I have taken the theory, methods, and strategies offered by the prior research and molded it to fit younger students who suffer from the same disparities. I offer, in this master's project, a curriculum unit, with standards, rationale, activities, and both formative and summative assessments for any teacher who wants to implement a YPAR based instructional method in their upper elementary or middle school classroom.

**Presentation Type and Session:** Poster II

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## ***Health and Wellness***

### **3-D Imaging with Division III Athletes**

**Shawn Pitcher**, Dietetics

Faculty Mentor: Professor Elaina Mertens, Health and Wellness

This research that will be done in this experiment will involve Division III athletes from Buffalo State College. Participants will be male and female. The technology that will be used for this experiment is 3-D body scanning technology and skin folds using a caliper. Calipers are an instrument to measure particular skin folds areas on the body for fat mass. 3-D scanning is primarily used in the textile field, but may also be feasible to use in the world of athletics. This machine uses light imaging that takes a scan of your body in which it can break every part of your body down and give you a measurement for each corresponding body part. With these measurements it can also calculate your BMI and body fat percentage. Using the 3-D body scanner will provide a great opportunity to see if this piece of technology can be used by other research for similar studies. It is felt that it could advance our knowledge in human measurement to better athlete's needs. Body fat measurements via skin fold calipers will be used to compare body fat measurements estimated by the 3-D body scanner. Avatars will be made of each athlete and sorted into its specific categories depending on gender, sport and body types.

**Presentation Type and Session:** Oral – Business, Computer Information Systems, Education, and Engineering Technology

### **The ABC's of RDA**

**Melyssa Peplowski**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Healthy People 2020 aims to increase the number of states with standards or regulations regarding food and beverages provided to children in childcare. Currently, there is no national standard that all childcare centers are required to follow. This lack of standards creates many problems for developing children as they are frequently not meeting the recommended daily allowances, at high risk for developing obesity or obesity related diseases, nutritional deficiencies, and developing poor and unhealthy lifestyle habits. The main reasons childcare centers are not adequately meeting children's nutritional requirements include lack of nutritional education, providing sugar sweetened beverages, and serving foods low in nutritional value. It is important to focus on increasing the number of states that are required to follow nutritional guidelines and standards in child care centers. Specifically, providing nutritional education to the preschool aged children will educate them at a young age on the importance of eating healthy and living healthy lifestyles. Children can take part in interactive activities to increase access and exposure to natural foods, and promote involvement and

development of healthy habits, which can be carried into adulthood.

**Presentation Type and Session:** Poster I

### **Addressing the Epidemic of Unhealthy Kids**

**Katelyn Sullivan**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Childhood obesity has been a rising issue in the country as well as specifically in New York State. According to the Centers for Disease Control and Prevention, childhood obesity has over doubled in children and quadrupled in adolescents over the past 30 years. Healthy People 2020 shows that from 2009 to 2010, 16.9% of children and adolescents between the ages of two to nineteen years were considered obese. This was a .8% increase since the years between 2005 and 2008 when that number was 16.1%. The objective of Healthy People 2020 is to reduce the proportion of children and adolescents in this age range who are considered obese. Unhealthy lifestyle factors are a leading factor for obesity, including high fast-food consumption, lack of consumption of nutritious foods, and lack of physical activity or exercise. Children and adolescents who are obese are at a higher risk for cardiovascular disease as well as other physical and social problems. This type of youth is likely to also be obese in adulthood, and obese adults are at a higher risk for certain cancers, CVD, high blood pressure, stroke, and osteoarthritis. The unhealthy behaviors that children exhibit can often be attributed to their home life, environment, and the media. Though there are many influencing factors for children to become obese there are even more possibilities to help prevent childhood obesity and reduce the numbers of obese children. By infiltrating the schools, the homes, the communities, and the media with health tips and health-based programs, New York State has a much better chance of reaching the HP2020 objective.

**Presentation Type and Session:** Poster II

### **The Apple Does Not Fall Far from the Tree**

**Melissa Resetarits**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

The objective of Healthy People 2020 is to reduce the proportion of children ages 2-19 who are considered obese. According to HP 2020, 16.1% of children were considered obese in 2008, with an anticipated improvement of 14.5%. US adolescents had a BMI greater than or equal to the 95th percentile during 2007-2008. For the first time in history, children may live a shorter lifespan than their parents. Parents are influential with regard to proper nutrition, regular physical activity, and a healthy body weight. Healthy eating habits along with the proper amount of physical activity should be strongly encouraged by parents. According to the Academy of Pediatrics, parent's eating habits and activity levels influence a child. Adults and adolescents fail to eat the daily-recommended amount of vegetables and fruits or reach the suggested amount of daily

physical activity. Obese children are at risk for short-term health consequences and long-term obesity into adulthood. Parents must be a positive influence on their children and encourage them to choose a healthful diet along with regular physical activity. If the problem is addressed at a young age, the issue could possibly be controlled.

**Presentation Type and Session:** Poster III

### **Are You Lying on Your Death Bed?**

**Miranda Moore**, HEW 411: Critical Issues in Health and Wellness  
Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

According to Healthy People 2020, 5.6 % of adults over the age of 18 use artificial sources of ultraviolet radiation for tanning. The use of tanning beds has become increasingly popular with the Caucasian female population ages 18 - 29. Increased use of tanning beds has been linked with the increase in cases of skin cancer. Three important determinants to consider are family history of skin cancer, fair skin, and increased use of tanning beds. History of skin cancer already places an individual at a high risk for developing cancer without taking other determinants into consideration. Fair skin increases one's risk due to the lower levels of melanin, which protects the skin from UV radiation. Tanning beds use stronger UV light than what the sun radiates and are a higher risk for skin damage. Currently, there is a 10% excise tax on all indoor tanning facilities. Women prefer to tan often for the perceived look and feel of being healthy. Women are not concerned with the damage done or the dangers for which they are at risk. A woman can avoid the tanning booths while still getting the color she desires by using self-tanning lotion.

**Presentation Type and Session:** Poster IV

### **An Arpeggio a Day: Does it Keep the Doctor Away or Invite Him to Stay?**

**Kaitlin Reynolds**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentor: Professor Catherine Ansuini, University College and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

This study examines research findings detailing the frequency and type(s) of injuries that affect musicians' abilities to perform. Are there particular kinds of 'performance-related' injuries that characterize different types of performers (e.g., vocal versus instrumental, wind versus percussive, vocal/instrumental combined)? Data will include findings from national disciplinary journals in music, rehabilitative medicine, and restorative therapy, as well as academic web resources. Conclusions and recommendations will also reflect personal insights resulting from performance injury. Poster presentation materials will illustrate a variety of performance related injuries, frequency and severity data, and preventive strategies to reduce risk for injury.

**Presentation Type and Session:** Poster I

### **Be Cool Go to Afterschool**

**Julian Cepeda**, HEW 411: Critical Issues in Health and Wellness  
Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Extracurricular activities significantly impact the lives of adolescents throughout their time in the education system. Research has aided in the understanding of the impact, whether positive or negative, of extracurricular activities in every phase of an adolescent's daily life. Research derived from various sources indicates the problems that impact adolescents and the reasons as to why many Latino adolescents demonstrate one of the lowest participation rates in the nation. The number of activities in which an adolescent decides to participate influences their academic aspirations, grades, mental and social health, and goals. Extracurricular activities alone are not the problem. The issue relates to a lack of knowledge, negative connotation, social aspect, and/or cultural differences. Latino adolescent participation is concentrated in the younger population, ages 10 - 13. Inactivity of the overall Latino adolescent population can lead to numerous complications, such as alcohol abuse, illegal drug use, and obesity. The availability of social clubs is vast. This project will suggest how proper implementation of these extracurricular activities, along with parental support, school support, and a proper approach from the academic system can aid in the growth of these Latino adolescents into healthier, dedicated, and academically involved individuals.

**Presentation Type and Session:** Poster I

### **Blast-Related TBI and its Effects on Psychological States and Cognitive-Communicative Functions**

**Danyel Matthews**, SLP 497: Research

Faculty Mentor: Professor Constance Dean Qualls, Speech Language Pathology

Some soldiers of the recently ended Iraq and continuing Afghanistan wars have suffered a devastating blend of psychological impairment (i.e., post-traumatic stress syndrome: PTSD) and mild traumatic brain injury (mTBI). This presentation will report the results of a review of peer-reviewed journal articles that investigated the psychological and cognitive-communicative consequences of blast-related traumatic brain injury (BRTBI), with and without concomitant post-traumatic stress disorder. The review included selected articles from 2007-2013 to answer two questions: 1) What are the psychological consequences of blast-related traumatic brain injury? 2) How do the psychological consequences of BRTBI affect cognitive-communicative functions? The methods, results, and conclusions will be presented, along with implications for the families of and the professionals who serve individuals with BRTBI.

**Presentation Type and Session:** Poster I



### **Borreliosis: An Infectious Trigger in Chronic Disease Processes**

**Phil Lockhart**, HON 400: Muriel A. Howard Honors Colloquium  
Faculty Mentors: Professor Barbara Olivieri, Health and Wellness  
and Professor Andrea Guiati, Director, Muriel A. Howard Honors  
Program

Borreliosis refers to the infection of an organism by a bacteria within the borrelia family. Upon the discovery of a new species of borrelia from the gut of a tick in the Northeastern region of the United States, *Borrelia burgdorferi* was labeled as the causative agent in Lyme disease. Despite knowledge of the disastrous effects of other advanced borrelia and spirochaetal infections, little changed in the standard treatment protocol for Lyme disease. Advanced Lyme borreliosis is multi-systemic and has the potential for many clinical manifestations. Signs of borrelia infection, including lesions in the central nervous system and upregulation of the immune system, and symptoms of a borrelia infection overlap with chronic conditions whose cause has yet to be determined. Fibromyalgia, Chronic Fatigue Syndrome, and Multiple Sclerosis are among the conditions which most closely resemble an advanced manifestation of Lyme disease. Though many professionals attempt to rule out an infection of this nature before making a diagnosis, standard diagnostics fail to accurately do so. Severe limitations on standard serological testing for Lyme disease, and known clinical pictures of spirochaetal infections merit further investigation into the potential for borrelia to act as the causative agent in chronic illnesses.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### **Breast Cancer Mortality: The Fear, the Hope, and the Resolution**

**Coumba Sy**, HEW 411: Critical Issues in Health and Wellness  
Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Healthy People 2020 aims to reduce female breast cancer death rate. Despite the advancements in breast cancer research, African American women have been suffering from higher mortality rates with breast cancer as compared to any other ethnicity. Their tumors often are found at a later, more advanced stage and often times they have less access to proper health care. In addition, African American women may have limited access to follow-ups after abnormal diagnoses. African American women may harbor a distrust of the health care system, believing that mammograms are not needed; some live without health insurance. Women are most susceptible to breast cancer as opposed to men, but African American women are most likely to die of breast cancer even though Caucasian women are at a high risk for developing cancer. Research has shown that African American women are more likely to develop a faster-spreading form of breast cancer. Those living in lower-income neighborhoods experience less access to a better health care system and appropriate test screening, which contributes to their overall

moridity and mortality. With better availability of health care centers and higher health literacy rates amongst African American women their awareness of breast cancer and its occurrence could increase prescreen testing at an earlier stage.

**Presentation Type and Session:** Poster III

### **Chelation Therapy and Heart Health**

**Lauren Turkovitz** and **Kaitlyn Brodzinski**, NFS 330: Seminar on Complementary and Alternative Nutrition  
Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

Chelation therapy involves the use of chelating agents to counteract heavy metal toxicity in the body. These agents have a high affinity to bind to metals such as lead, arsenic, and mercury that enables their removal from the blood. In recent years, chelation therapy has become a topic of interest in alternative medicine, particularly in the prevention and treatment of heart disease. The 2008 National Health Interview Survey determined that as many as 111,000 U.S. residents incorporated chelation therapy into their lifestyle as a form of complementary medicine. The National Heart, Lung, and Blood Institute (NHLBI) and the National Center of Complementary and Alternative Medicine (NCCAM) sponsored the first large-scale research study aimed at observing the effectiveness of chelation therapy on patients with coronary heart disease. Through a placebo-controlled, double-blind design, 1,708 participants over the age of 50 who had experienced a prior heart attack were subjected to EDTA chelation therapy. Results showed a modestly reduced risk of future cardiovascular events, with a greater risk reduction in groups that had diabetes and groups with a history of anterior myocardial infarction. Due to the limited evidence of the benefits of chelation therapy on heart disease in other research studies, there is no substantial support in its routine use.

**Presentation Type and Session:** Poster III

### **Clean Up Your Sleep**

**Devon Mussachio**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Students, most commonly those in grades 9 through 12, are not getting sufficient sleep, causing, both, their minds and bodies to suffer and underperform. As their grades are dropping, their stress levels are increasing. Many of their normal, everyday activities may be causing them long-term health issues. Some of the biggest determinants that contribute to the problem of sleep deprivation include staying up late to finish homework, the overconsumption of caffeine, and the overuse of electronic devices. Alternative therapies, such as meditation and herbal tea, are healthy and effective tools that can be used to promote sleep and decrease the stress and anxiety that often prevent it. The purpose of this presentation is to increase awareness of the importance of getting enough sleep, to increase understanding of sleep patterns, and to increase knowledge

of alternative therapies related to sleep health. The goal of Healthy People 2020 is to increase the number of students in grades 9 through 12 who get enough sleep by 33.2% before the year 2020. Growing teenagers should not have to go to bed with sleep aids and wake up to caffeine.

**Presentation Type and Session:** Poster II

### **Creating a Smile**

**Pamdora Drumgoole**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Our right to freedom is given by our ability to achieve equality. To the disabled there is no right to freedom. Disability is a part of life that can occur at any given time. Persons with disabilities incur a major health risk, due to the fact that they are more likely to experience delays in health care. By the year 2020, the U.S. Department of Health and Human Services through the Healthy People initiative is looking to increase the amount of health promotion programs aimed at increasing the quality of life for disabled individuals. Compared to people without disabilities, the disabled population is more likely to become unemployed and live sedentary lifestyles. A contributing factor to this is the number of disabled individuals under age 25 who do not live in institutions that have private health promotion programs. These individuals also require additional medical attention as compared to a person without disabilities. However, the majority of disabled individuals cannot afford health care expenses. This project is a voice for the disabled community to ask for help to reach their needs. With providing more health promotion programs, everyone can appreciate their right to freedom.

**Presentation Type and Session:** Poster I

### **Does Phrase-Formatted Text Improved Reading Comprehension in College Students?**

**Solina Krickovich**, Speech-Language Pathology

Faculty Mentor: Professor Deborah Insalaco, Speech-Language Pathology

Adding spaces between phrase boundaries in reading passages, called phrase-formatted (PF) text, has been shown to increase reading comprehension in typical college students and in poor readers. PF text is thought to improve reading comprehension because it parses the sentence for the reader, and parsing is considered an important part of comprehension. Earlier studies used a between subjects design and did not test parsing. We sought to confirm the benefit of PF text by conducting a within subjects design and testing reading comprehension with alternate forms of a standardized test. We also tested parsing and asked for students' approximate GPA because we hypothesized that parsing and grades would be related to reading comprehension skills. Our summer

2013 research results showed that PF did not benefit typical college students. Furthermore, no correlation was found between reading skills and GPA. However, the relationship between parsing skill and reading comprehension scores was confirmed. Research will be continued in the fall of 2013 to confirm results with a larger sample and deal with methodological problems that occurred over the summer. New results will be presented.

**Presentation Type and Session:** Poster II

### **Driving Under the Influence of the Sandman**

**Kaitlyn Schena**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

One of the first things that come to mind when someone is asked what they believe to be distracted driving is driving under the influence or texting while driving. One thought that does not usually come to mind is drowsy driving. Not many people believe that drowsy driving is as detrimental as driving under the influence; at some point in a person's driving career they drive drowsy without hesitation. The Healthy People 2020 objective that will be discussed throughout this project is to reduce the rate of vehicular crashes per 100 million miles traveled due to drowsy driving; the population that will be focused on is drivers in the United States that range from age 16 to 55. A current statistic states that 2.7 vehicular crashes per 100 million miles traveled are caused by drowsy driving. Determinants that increase susceptibility to drowsy driving include age, stress level, and the use of medications. Drowsy driving is becoming more recognized as a health issue in the US. Unfortunately, it is not yet seen as a serious problem. Education plays the most important role in helping drivers recognize the problem. Therefore, the best way to help drivers realize the effects of drowsy driving is through primary prevention.

**Presentation Type and Session:** Poster I

### **The Effects of Grape Seed Extract on Alzheimer's Disease in Mice**

**Rachel Neilans** and **Leah Koeppel**, NFS 330: Seminar on

Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

Since neither the cause of Alzheimer's Disease (AD) nor treatment of the disease have been found, people are unaware of what prevention measures to take in order to decrease their risk of developing AD and of what therapy to take. Many AD patients and their families turn towards complementary alternative medicine (CAM) to slow the progression of the incurable disease. The National Center for Complementary and Alternative Medicine (NCCAM) conducted a study on mice with grape seed extract that contains polyphenolics. Grape seed extract is made from the seeds of red grapes that are often the byproduct of the manufacture of wine. The grape seed extract contain polyphenols that have an anti-

inflammatory effect on damage to the brain. The major polyphenol components of grape seed extract are catechin and epicatechin. Catechin and epicatechin have been scientifically shown to prevent the formation of B-amyloid peptide that has been linked to the neurotoxicity associated with Alzheimer's Disease. The study was conducted on mice that had been genetically modified to develop a condition similar to Alzheimer's Disease. The mice were exposed to either the grape seed extract or a placebo daily for five months. The mice with the grape seed extract had reduced amyloid beta accumulation and plaque formation in their brain cells at the end of the five-month period. More research needs to be conducted before recommending grape seed extract for humans due to unanswered questions in regards to dosage requirements and duration of treatment. Controlled human research must be followed for similar findings from the animal research.

**Presentation Type and Session:** Poster I

### **Effect of Red Wine and Resveratrol on Aging And Longevity**

**Marla Guarino and Paola Zambrano**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

There has been a great amount of interest in Resveratrol, a polyphenol found in red wine. Because of its antioxidant qualities, the question has been posed, "Does Resveratrol help in promoting longevity?" Resveratrol possesses estrogenic, antiplatelet, and anti-inflammatory effects that may help with an array of age-related diseases such as heart disease, cancer, Alzheimer's disease and diabetes by activating several longevity genes. To date, most studies on this subject have been conducted on mice using unrealistic levels of Resveratrol and have proved inconclusive for actual extended life span in mice. For instance, in one study the amount of red wine consumed by human, to equal the amount given to the laboratory mice, would equate to 1,000 liters of red wine per day. In addition, the effects are only evident for a short time after consumption. Therefore, long-term benefits of Resveratrol in red wine are unknown. Also, because of the possible detrimental effects of alcohol consumption, at this time promotion of increased red wine consumption is not recommended. While the protective qualities may be there, further quality research must be obtained. Our research will compile present day studies in an attempt to educate viewers on the realistic link between red wine and health.

**Presentation Type and Session:** Poster III

### **Effects of Conjugated Linoleic Acid on Body Fat Reduction**

**Stephanie Lomas and Tea Gavran**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

The purpose of this research is to investigate whether taking Conjugated Linoleic Acid (CLA) would decrease fat mass in humans.

Through the past several years, CLA, a naturally occurring dietary fatty acid, has been becoming more popular and is continuing to grow in the supplement world. Consumers are always looking for the latest diet products in regards to fat loss. CLA has been shown to have several biological effects such as anticarcinogenesis, antiatherogenesis, immune modulation, and changes in body composition. Our research focused on the possibility of CLA reducing body fat mass and preventing weight gain in humans. One example of how CLA has been tested to have these beneficial effects was taking CLA during the holiday season to see if it would prevent weight gain or increase body fat reduction. There have been several unproven health claims regarding the benefits of CLA such as increased metabolic rate, lowers cholesterol and triglycerides, lowers insulin resistance, and enhances the immune system. Several of these health claims have been studied and evidence was inconclusive and showed no significant change. The studies that we have researched were based on the reduction of body fat in humans. The studies that we researched concluded that CLA if taken in the right dosage demonstrates positive effects for fat loss over a six-month period and prevents weight gain. Although, no adverse effects were seen, additional studies should be conducted to evaluate the effect of prolonged use of CLA.

**Presentation Type and Session:** Poster VI

### **Essiac Tea for Cancer Treatment**

**Sarah Boyer and Jennifer Carland**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

Essiac tea is a mixture of four herbs that are combined to make a tea. The original formula included burdock root, slippery elm inner bark, sheep sorrel, and Indian rhubarb root. Essiac tea originally was observed by a Canadian nurse, Rene Caisse, who got Essiac tea formula from a Canadian Indian tribe who used for cancer treatment. A study of the Essiac tea was performed to determine if this herb is effective for breast cancer treatment, prevention, improving quality of life, and controlling negative side effects. The study was conducted with 510 women with primary breast cancer and looked at mood status such as depression, anxiety, and fatigue as well as the boost of immune systems. Essiac tea showed no effect on mood status but rather a negative effect on mood in Essiac-users, which was worse than non-Essiac users. Most women took Essiac tea reported their immune system boosted with minor adverse effects. We conclude that Essiac tea does not improve mood status but have beneficial effects on primary breast cancer.

**Presentation Type and Session:** Poster II

### **Fat or Fit**

**Michael Kiripolsky**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Obesity has been on the rise for the past few decades and

does not seem to be slowing down. According to Healthy People 2020, 33.9% of adults were obese from 2005-2008. Factors that were responsible for this included: poor diet, physical inactivity, environmental, social, and behavioral factors. Research suggests poor diet and physical inactivity are much to blame for the incline of this disease. Not only does obesity increase risk of mortality, but also increases an individual's chances for other health related conditions such as cardiovascular disease, type 2 diabetes, heart disease, and hypertension. Research has proven that obesity is reduced with education and income; however, behavioral choices are also important factor. BMI is the most common approach used to determine weight status. Waist circumference measurements combined with BMI is considered accurate. In order to reduce the prevalence of obesity in adult males, individuals need to incorporate lifestyle changes that not only reduce sedentary behaviors but also increase physical activity and change poor eating habits. Individual's need to be more aware of what they are putting into their body and base their eating habits on nutritional value, rather than just satisfaction.

**Presentation Type and Session:** Poster II

### Fixing the Addiction

**Jonathan Forde**, HEW 411: Critical Issues in Health and Wellness  
Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

According to the initiative, Healthy People 2020 seeks to reduce cigarette smoking by adults. Approximately 20.6% of adults aged 18 years and older were current cigarette smokers in 2008; a reduction to 12% is the projected improvement. Tobacco is a growing problem among the young adults in America. According to the Centers for Disease Control and Prevention, in New York State, about 16.8% of the adult population is current cigarette smokers and about 25,400 deaths are caused by cigarette use each year. Tobacco use is known to cause cancer, heart disease, lung disease, and premature deaths. The purpose of this study is to examine the determinants such as personal behavior, social, and environmental factors that may influence young adults to smoke tobacco. Many young adults tend to smoke due to peer pressure, the belief that smoking is not harmful, addiction, or during "social gatherings." By better educating young adults, and placing nonsmoking policies in certain environments such as schools and the workplace, tobacco usage may decrease. By understanding these determinants, the decrease of smoking among young adults is possible.

**Presentation Type and Session:** Poster I

### Fueling the Dancer

**Emily Frack** and **Donna Rossbach**, DAN 495: Project  
Faculty Mentors: Professor Tina Colaizzo-Anas, Dietetics and Nutrition and Joy Guarino, Theater

Dancers have high-calorie requirements due to vigorous activity levels, yet often they feel the need to limit their calorie intake to stay as thin and lean as possible (for reasons such as aesthetic

lines, lifting, being light on their feet, and fitting into costumes). A misunderstanding such as this could lead to an under-consumption of food, which could--in turn--lead to lack of energy, sub-optimal performance and poor health. The aim of this study is to find out if perceived caloric needs in young dancers are different from their calculated estimated needs. Dance students between the ages of fifteen and twenty-two were recruited from local dance schools and college dance departments to participate in a written survey. The data collected included demographic information as well as responses to questions about nutrition to gauge their knowledge. Target gift cards were offered as an incentive for participation in the survey. Results to be discussed will include dancer knowledge of calorie content of a variety of foods, nutrition knowledge for pre-, during and after dance, and dancer recognition of healthy versus unhealthy nutrition practices. Nutrition tips for young dancers will be presented at the end.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### Gender is the Most Influential Determinant of Food Choice Among College and University Adults

**Bianca Cornelius**, PSC 470: Senior Seminar  
Faculty Mentor: Professor Peter Yacobucci, Political Science

College/university students struggle with choosing foods to eat on a daily basis, since eating patterns are well established within the college/ university years it is important to help form healthy eating habits at this peak of post-adolescent/pre adult life stage. The purpose of this study is to evaluate food choice determinants and what affects healthier food choices in college students. Other research has utilized self-reporting surveys among college and universities students with notable differences among food choice between genders. Along with gender other independent variables that were found in determining food choice were ethnicity, BMI, nutrition knowledge, health consciousness, time and availability, and costs and taste. My method of research will also be ordinal survey collected data to compare Buffalo State students of which are more diversely populated and previous studies. The survey key topics measure the influence of gender, taste, health consciousness, nutrition knowledge, cost, BMI and time and availability in food choice. The surveys were distributed at classroom announcements, general interests meetings of student organizations and during Bengal pause. Congruent with other studies, the survey supports my hypothesis of gender playing the most significant role in food choice. Nutrition knowledge and health consciousness is found greater in women than in men. Women are more likely to utilize their knowledge of nutrition and nutrition reasons as a determinant of food choice and choose better food choice options.

**Presentation Type and Session:** Poster IV



### Genetically Modified Organisms and Possible Health Risks

**Lisa Pasnik and Melissa Kopf**, NFS 330: Seminar on Complementary and Alternative Nutrition  
Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

Genetically modified organisms (GMO) can be defined as organisms in which the genetic material (DNA) has been altered in a way that does not occur naturally. An estimated 60-80 percent of processed foods in a typical American grocery store contain GM ingredients. Due to the dominance of these products there has been a large debate whether or not GMO foods pose a health risk. There have been certain benefits with these foods such as nutritional enhancement and helping diminish the hunger crisis in developing countries. However, scientists are unsure about consequences these “franken-foods” may cause down the road. Studies have shown that GMO’s may have effects on allergic responses, gene transfer and outcrossing, which is the movement of genes from GM plants into conventional crops. Through review of the literature, we examined the recently found research on GMO’s and the negative impact they may have on consumer’s health. The various health concerns are discussed in this presentation.

**Presentation Type and Session:** Poster IV

### Get Sleep: A Healthy Sweep!

**Michael Burgard**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Adults frequently get inadequate sleep. Poor sleep hygiene can lead to health related problems, poor work ethic, and depression. Thus, Healthy People 2020 has made it their objective to create a coordinated strategy to improve sleep awareness and increase the amount of adults who get sufficient sleep. In 2008, only 69.6% of surveyed adults 18 years and older reported that they got enough sleep. Of those adults surveyed, the African American female population was considered highly unlikely to get sufficient sleep. The African American race alone fell way below the average in 2011, by nearly 10%. Determinants in this population focus on education, low-income households, lifestyle, occupational factors, and single parenthood. According to the Centers for Disease Control and Prevention, it is extremely common for these adults to develop sleep disorders such as insomnia, sleep apnea, restless leg syndrome, and snoring. Sleep education and promotion can increase awareness of sleep disorders. Balancing the adult’s sleep priorities is often neglected. It is reported that getting 8 hours of sleep can increase work productivity, decrease health related issues, and make one happier because sleep is considered a natural anti-depressant.

**Presentation Type and Session:** Poster II

### Glycerol Hyperhydration and Endurance Exercise

**Stephanie Busse**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

Studies have shown that consuming a beverage containing glycerol can induce a hyperhydrated state. Hydration status is an important factor in the performance of endurance athletes. Dehydration negatively affects an athlete’s performance by impacting cardiac output and thermoregulation. However, replenishing fluid losses during activity is not always realistic. Starting in a hyperhydrated state can enhance the athlete’s ability to maintain appropriate fluid stores further into any event. The goal of this research review is to evaluate the efficacy and safety of glycerol in improving hydration status and performance. Numerous research studies were reviewed to determine the ability of glycerol to induce a hyperhydrated state before and during exercise. Required dosages and important timing principles were also reviewed. The reviewed studies have proven that glycerol is effective at inducing a hyperhydrated state before exercise, and continued ingestion of glycerol during exercise has some benefit. However, further research on the effects of glycerol on athletic performance and the use of glycerol for rehydrating is warranted.

**Presentation Type and Session:** Poster II

### Good Not Great: Scant Support for Glucosamine Supplementation in Knee Osteoarthritis

**Holly Layer and Stephanie Trifunovic**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

According to the Centers for Disease Control (CDC), one in two Americans will develop some form of Osteoarthritis (OA) in their lifetimes and 27 million Americans have it. Osteoarthritis is a disease affecting the joints causing weakness and disability, which can interfere with daily activities and even lead to joint replacement surgery. Multiple common supplements including Glucosamine, Chondroitin Sulfate (CS), Methylsulfonyl Methane (MSM) and Hyaluronic Acid have been studied for their potential to reduce or ease the symptoms of OA. These compounds are believed to slow the progression of joint deterioration and help relieve joint pain by protecting the cartilage found within the joints. This review of several studies presents their methods, findings and conclusions about the efficacy of these supplements on OA. In general, these studies could not find significant evidence to recommend any of these supplements as effective treatment of the disease. However, some moderate improvement in joint stiffness and pain were found with various combinations of the above supplements in subjects with varying degrees of disease severity. More studies with larger sample sizes, longer trials, varying degrees of OA and broader outcome measures are recommended.

**Presentation Type and Session:** Poster I

## **HIV/AIDS Beat the Odds: Be the Difference**

**Brian Greene**, HEW 411: Critical Issues in Health and Wellness  
Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Healthy People 2020 seeks to reduce the incidence of HIV/AIDS cases among adolescents and adults. HIV/AIDS has been a major health problem in America, and remains a problem today among African American males ages 19 - 24. New York City had the highest incidence with 3,149 HIV/AIDS cases in 2012; 1,394 were African American males. This totaled approximately 44% of the number of new cases for that year. African American males are more at risk for HIV/AIDS infection, as compared to all ethnicities. HIV/AIDS in the African American community is a concern because a large proportion of African-American males are dying from this infectious disease. The determinants for this high infection rate include homosexuality, drug behaviors, and lack of education. Young African American males are less educated when it comes to recognizing the risk of having sexual intercourse with a partner of the same sex, without using proper protection. Additionally, a lack of precaution when injecting illegal drugs increases the risk of HIV infection. A suggested recommendation is to reach out to this target population through schools and public recreation centers. By doing this we will be able to educate the African American community on HIV/AIDS prevention.

**Presentation Type and Session:** Poster I

## **How Healthy is Your Major?**

**Mariah Brown**, HON 400: Muriel A. Howard Honors Colloquium  
Faculty Mentors: Professor Elaina Mertens, Health and Wellness and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

It is clear that there are many determinants of health and health behaviors such as age, gender, genes, and environmental factors. Knowing these determinants is helpful in preventing various health disparities. The purpose of this research is to look for differences in health behaviors related to college students' major. The Trale Back pack General Health Assessment survey will be distributed to several classes on Buffalo State College campus. The results of the survey will then be reviewed to compare the health behaviors of students in different majors. Similar studies have looked into how dietary choices are affected by level of nutritional knowledge. These studies have proven that the more knowledge one has about nutrition, the healthier their food choices tend to be. Based on these results, it is hypothesized that students in majors that focus on nutrition, such as Health and Wellness, and Dietetics will have better nutritional behaviors than students in majors that have no nutritional courses. Further, because health behaviors in general, not only dietary behaviors, tend to be better with a higher level of knowledge on the subject, it is hypothesized that the results of this study will show that all health behaviors of students in health-based majors will be better than those in non-health-based majors.

**Presentation Type and Session:** Poster VIII

## **How Music Impacts Communication Development**

**Michelle Valevich**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor Camilo Maldonado, Speech-Language Pathology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Music can play an important factor in the lives of young children. For those who have trouble communicating or getting their points across, music can serve a larger purpose. With the aid of music therapy, children with communicative disabilities can increase their communicative intent. As explained by the World Federation of Music Therapy (2011), "Music therapy is the professional use of music and its elements as an intervention in medical, educational, and everyday environments with individuals, groups, families, or communities who seek to optimize their quality of life and improve their physical, social, communicative, emotional, intellectual, and spiritual health and well being" (p. 194). It is important to understand the versatility of music therapy in order to see how it can impact the communication development of others. Using repetition, rhythm and melodic intonation, music may serve to increase the communicative developments of youngsters. By exploring various studies and experiments, this presentation will explain the similarities between music and various forms of communication, and the effects on music therapy in assisting with communicative competence. This project will analyze several reviews of literature to reach a substantial conclusion in this area.

**Presentation Type and Session:** Poster II

## **Large but Not in Charge**

**Roy Vandemortel**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Over the past few decades the prevalence of childhood obesity has increased significantly in the United States. According to Healthy People 2020, 17.4% of children aged 6 to 11 years were considered obese in 2005 - 2008. New York State statistics have indicated that male children stand out as a population that struggles with this issue. In 2010, 16.9% of children in New York State were considered obese. Healthy People 2020 has responded to this issue by creating an objective to reduce the proportion of children who are considered obese from the current 17.4% to 15.7%. Childhood obesity continues to be a major focus of public health efforts in the United States. Obese children may be at risk for both short-term health consequences and long-term tracking of obesity to adulthood. The obesity epidemic is mainly attributed to adverse environmental factors such as a lack of exercise. This problem not only lies in the hands of the child but also the parents. Studies show that obese children were significantly less likely to report their parents or guardians as physically active. The results are consistent with the fact that physical inactivity is an important contributing factor in childhood obesity. Interventions to promote physical activity in obese

children should focus on boosting self-efficacy, perceptions regarding exercise, increase awareness of, and access to, community exercise outlets, and increase parental modeling of physical activity.

**Presentation Type and Session:** Poster II

### Living Young, Wild, and Free

**Ryan Weber**, HEW 411: Critical Issues in Health and Wellness  
Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

College is a transitional phase for students. As a result most students are not performing enough physical activity. According to Healthy Campus 2020, only 48.7% of students currently meet the guidelines for aerobic activity; only 37.6% meet the same guidelines for muscular strength training. Causal factors for the lack of physical activity in college students are primarily due to perceived barriers and enablers, which include interpersonal, intrapersonal, and environmental. Each of these barriers and enablers affect students differently, thus creating an individualized program for students would be beneficial. Potentially, this could help increase the rate of college students' overall physical activity. Not all students are affected by barriers and enablers. Present research shows that college students take time to adjust to living on their own in a college setting, showing that there is a difference in the physical activity rates for those students that live on campus versus off campus. To increase the physical activity of students, measures have to be taken towards individualized students and not the student population as a whole.

**Presentation Type and Session:** Poster III

### Management Strategies Advancing Preventive Health Engagement in the Collegiate Population

**Karley Austin, Christine Dunwoodie, and Juana Ramos**, INS 495: Research Project

Faculty Mentors: Professor Catherine Ansuini, University College, Professor Roswell Park, INS, and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Do traditional health promotion programs adequately meet the expressed needs of students in a diverse college environment? Population self-reports and survey data identified resources sustaining traditional systemic health programs as "highly valued". Data isolated intellectual stamina and emotional resilience as underserved arenas of "high risk" to student engagement, academic success, and systemic campus wellbeing. Findings, resources and pragmatic recommendations, crafted as health management strategies (MAPHS Guide: Advancing a Culture of Campus Wellbeing) articulate outcomes, support engagement, and promote identified need in campus wellbeing.

**Presentation Type and Session:** Poster I

### Muscle Miracle or Dangerous Myth? Steroids and Body Building in Men in the 1960s – 1970s

**Bianca Roberts**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

In the 1960s-1970s the "perfect body" was seen through the eyes of men and portrayed through the body of Arnold Schwarzenegger. This "perfect body" was seen to a man as the root of masculinity. It was the model of what a real man should look like. This drive and determination that this image gave men drove them into the use of steroids. During the "Arnold Era" of the 1960s through the 1970s and even still to this day steroids are being used as a way for "fast", "quick" results in the bodybuilding world. Bodybuilding has been a recreational sport in which a male shows off his hard work & dedication through his body. It is all about strengthening and enlarging ones muscles and what better way to get those fast results than steroids. There has always been a misconception that women are the ones who struggle with body image and insecurities, however we tend to overlook males that struggle with the same body image insecurities. There are men out there everyday that struggle with their body image, they compare themselves to other men which gives them the determination to better themselves in anyway they can. Steroids aid in that aspect, they help men achieve their greatness through the body, and steroids in a way give a man his confidence.

**Presentation Type and Session:** Poster III

### The Needs for Vitamin D: Beyond Calcium Absorption

**Courtney Bonvissuto**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics

Vitamin D is the only nutritional supplement that is free. Yes free, unless you live in places where direct sunlight is limited for the body can make enough vitamin D when exposed to sunlight for more than half an hour a day. Vitamin D is required for the body to absorb calcium and phosphorus, the elements for bone structure. Vitamin D also does a vast variety of other functions. A recent Nebraska study links increased vitamin D intake to less cancer risk, Japanese scientists found that the vitamin helps fight influenza. Other research showed that vitamin D lowers the risks of hypertension, osteoporosis, Parkinson's disease and heart disease. Many potential complications associated with Vitamin D deficiency include Osteomalacia in adults who have severe vitamin D deficiency, kidney failure, lung disorder, diabetes stomach and intestinal problems, Psoriasis, rickets, thyroid problems, etc. Vitamin D is also shown for boosting the immune system, preventing autoimmune diseases and cancer. The purpose of my research is to find if research evidence warrants vitamin D supplementation to help prevent or treat the vitamin D deficiency disorders.

**Presentation Type and Session:** Poster III



## **Nico-Teen**

**William Lekki**, HEW 411: Critical Issues in Health and Wellness  
Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Overall, the objectives of Healthy People 2020 are to reduce health disparities and increase health awareness. The initiative states, 7.7% of adolescents aged 12 to 17 who had not previously used tobacco products in their lifetime, first used such products in the past 12 months. The anticipated improvement expected is to reduce first time use by 2%. The leading cause of preventable death in the United States is mostly related to tobacco; several smoking related cancers have been linked to about 90% of cancer cases. Cigarette smoking causes more than 480,000 deaths each year in the United States; smokers are at greater risk for diseases that affect the heart and blood vessels. In 2012, 6.7% - 23.3% of middle school and high school students currently used tobacco products. Increasing federal tax on tobacco products would prevent a considerable amount of purchases by adolescents. Advertising and promotion in the United States totaled \$13.5 billion in 2005. Reducing the amount of money spent each year to target adolescents could reduce the incidence rate. It is important to recognize the signs of this health problem so adolescents that have not started to use tobacco will not be influenced by others.

**Presentation Type and Session:** Poster III

## **Potential Use of Probiotics in the Treatment of Irritable Bowl Syndrome**

**Katie Shapiro**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

Currently a treatment for Irritable Bowel Syndrome or IBS does not exist. About three out of twenty people suffer from IBS with over half being women. IBS is a multifactorial condition that includes poor gut motility, small-bowel bacterial overgrowth, microscopic inflammation and visceral hypersensitivity. Two strains of probiotics, *Lactobacillus* and *Bifidobacterium*, are thought to play a prevalent role in the treatment of IBS. This review of literature looks at recent studies that show the probiotic effects on the treatment of IBS. Expected activities of probiotics include the production of bacteriocins to inhibit pathogenic growth, relief of bloating and distension, and alteration in the function of gut-associated lymphoid tissue and cytokine profile. Strains of *Lactobacillus* and *Bifidobacterium* may also inhibit secretions that cause inflammation while at the same time they enhance immunity. Research has shown the use of probiotics in the treatment of IBS to be effective, however results were variable and more studies are needed to conclude the effects.

**Presentation Type and Session:** Poster II

## **Preparation of Speech-Language Pathologists for Working with Older Adults**

**Heather Hoffmann**, Speech-Language Pathology  
Faculty Mentor: Professor Constance Dean Qualls, Speech Language Pathology

This survey research investigated second-year speech-language pathology (SLP) graduate students' attitudes towards and knowledge about older adults to determine whether additional academic and clinical work relative to this population is warranted. Twenty-three second-year SLP graduate students provided responses on two experimental surveys: attitudinal and knowledge of aging. Seven-five percent of the students reported moderate-to-high academic interest in older adults. A slight majority (43%) reported they had taken 1-2 courses that addressed issues related to older adults, eighty-one percent reported moderate-to-high levels of enjoyment in the courses, and seventy-five percent found these courses to be beneficial for their careers. On questions about Alzheimer's disease and older adults' sensory and motor skills, the students responded accurately 90% and 96% of the time, respectively. However, this group of graduate students was much less knowledgeable about older adult's cognitive skills, showing only 39% accuracy on these questions. Eight-five percent of the graduate students indicated they would spend more time with older adults, although 60% responded they would not pursue a career with this population. In sum, the results of this study tend to suggest that either academic courses on aging and cognition should be added to the SLP curriculum or topics of aging and cognition should have greater prominence in existing courses. Although this group of students showed high interest in and are willing to spend more time with older adults, they also do not wish to work with them. Methods, results, conclusions, and implications will be presented.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

## **The Role of Herbs in Anti-Aging**

**Alaina Hoschke**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics

Herbs have been used as a part of complementary and alternative medicine for centuries. One of the most popular uses of herbs today is anti-aging. Some of the most popular herbs in anti-aging include ginkgo biloba, St. John's wort, limonene, and green tea. Ginkgo biloba has been known for improving blood flow to the brain and memory. In recent years herbs have been widely used in anti-aging facial oils, serums, and creams. Ginkgo's main promise in skin care is its antioxidant properties. Since much of skin aging is caused by free radical damage, ginkgo's ability to protect against free radicals may help protect skin from signs of aging like wrinkles, sagging, and age spots. St. John's wort, like ginkgo biloba, is also used to help reduce free radical damage but it also promotes cell rejuvenation and regeneration. One of the classic markers of aging



is the hardening of our physical structure, such as skin, through sugar accumulation on the basement membranes. D-Limonene is an herb used in recent years that offers protection against this type of sugar-induced damage. Green tea has many antioxidant and anti-inflammatory compounds. Topical treatment with green tea polyphenols are likely to slow down the development of some signs of aging. Green tea is also believed to cut blood sugar spikes, fight cancer, remove fat, and improve memory. These conclusions have been drawn from scientific research findings, although some are better documented than others.

**Presentation Type and Session:** Poster II

### **S-Adenosyl Methionine Dietary Supplementation**

**Christine Sprehe**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

S-Adenosyl methionine (SAM) is synthesized in the human body and serves as the universal donor of methyl in the body. SAM is a methyl donor for DNA and RNA methylation, myelin maintenance, neural function, and synthesis of polyamine, carnitine, and catecholamine, as well as other processes. A dietary supplement of SAM can be provided to assist with joint, liver, and aging related issues. Clinical trials have shown supplementation of SAM for osteoarthritis may be effective. SAM may also be effective in liver health influencing hepatocyte function along with antioxidant and detoxifying substances. SAM may be effective at reducing the side effects of aging due to transmethylation of hormones, neurotransmitters, proteins, and membrane phospholipids. No specific tablet or IV dosage has been determined for improvements in these related issues. More research is needed in this field.

**Presentation Type and Session:** Poster IV

### **Saving the Lives of Our Youth!**

**Kireshia Breland**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Obesity is affecting children's lives and life expectancy all over the world. Characterized by a child who is at or above the 95th percentile for their weight, obesity has sky rocketed in the 21st century, becoming an epidemic. According to Healthy People 2020, 17.4% of children aged 6-11 are considered obese. Of those children, 20% are African American and 25% are of Hispanic descent. Reducing these rates by at least 10% is the goal. Minorities are more susceptible to obesity because of many complex factors including: genetics; social; behavioral; and cultural factors. Children are more vulnerable to obesity because environmental risks influence lifestyle and behaviors. Childhood obesity in minorities is usually related to poor eating habits, lack of physical activity, and lack of education

within families. Many children do not consume a balanced diet but instead are consuming junk foods and fast foods. Bad eating habits tend to start early and continue throughout adulthood. Education interventions addressing healthy eating and promoting physical activity are necessary to attack this epidemic to save the lives of our youth. Prevention is the key.

**Presentation Type and Session:** Poster IV

### **The Secret Ingredient: Riding Your Bicycle**

**Andrea Hurley**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Physical health and the environment's health have the opportunity to be improved with one simple solution. If more people chose alternate means of transportation, for example riding their bicycles to work instead of driving their car, physical health would increase along with less vehicular exhaust destroying the environment. An objective from Healthy People 2020 has a goal of a 10% improvement in encouraging more people to ride their bicycles to work. Seeing as many commutes are 2 or less miles walking or riding a bicycle uses energy which equals approximately a small chocolate bar; vehicular transportation uses 10 times that energy, but from oil. Oil has become a major global issue in which thousands of citizens have been killed due to wars revolving around the need for oil to support the thousands of gallons of gasoline expended each second. Many people will argue that the roads are not fit for walkers or bicycle riders. Although this is currently true, there are many organizations proposing bicycle routes within cities for a safe commute. Traffic injuries and deaths due to cyclists have a steep gradient in Buffalo, NY, as many deaths and injuries are African American children due to inadequate parental education. Buffalo, NY has already installed 11.3 miles of bicycle lanes with 18.5 miles already planned projects and have proposed for 45 more miles of bicycle-friendly streets.

**Presentation Type and Session:** Poster IV

### **Shedding the Light on the Silent Killer**

**Babatunde Ajisafe**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Hypertension or high blood pressure is a disease that ails a great deal of the country. With little signs and symptoms, it is very easy to live having the disease and die without warning. Hypertension, also called the "Silent Killer" has claimed approximately 600,000 lives a year and is a serious concern to all. Although often fatal and able to cause more serious problems like cardiovascular disease, on average, hypertension if remains undiagnosed or untreated, can lead to more serious complications. According to Healthy People 2020, a current objective seeks to reduce the proportion of individuals with hypertension by 10%. This is an achievable goal if steps are

made to reduce the factors that limit success. Hypertension affects approximately 30% of the population however, the demographics of people affected has been shown to reflect factors such as race, age, and geographical area. The prevalence of the disease tends to affect more African American males than any other population group. Steps have been taken to lower the prevalence of hypertension in African American males but factors such as the lack of access to health records and the amount of people that remain undiagnosed has made gauging success of any programs to lower the prevalence limited.

**Presentation Type and Session:** Poster III

### **Skip the Antidepressants: Yoga and Massage Therapy Can Reduce Prenatal Depression and Prematurity**

**Maggie Hartig**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

Low birth weight is one of the leading causes of death for newborns in the United States. Infants born prematurely or have low birth weight, have a higher risk for fetal growth retardation, and long term health consequences. 10-49% of women are affected by prenatal depression, and these women are more likely to deliver prematurely. Several studies have shown that the use of interventions such as massage therapy and yoga significantly reduced prenatal depression, anxiety, back and leg pain, and premature births. Yoga is considered a form a self-massage, therefore the similar effects between massage therapy and yoga may not come as a surprise, but because most women are hesitant to use anti-depressants while pregnant, the use of these methods may prove to be a more cost-effective and safer alternative. Additional studies are needed on the numerous underlying mechanisms resulting in the effects yoga and massage therapy have on pregnancy.

**Presentation Type and Session:** Poster III

### **Sulfated Polysaccharides as Dietary Supplement**

**Monica Tedesco**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

Sulfated polysaccharides (SPs) are emerging ingredients in dietary supplements. SPs are rich in some marine products such as algae, shellfish and other seaweeds. SPs proved to be cardio-protective and potent and selective inhibitors of various enveloped viruses, including herpes virus, cytomegalovirus and human immunodeficiency virus. Recently SPs have had an immense upward trend of research devoted to the relationship between SPs and health benefits. Some of the most common benefits of SPs are its anticancer, antioxidant, and anticoagulant properties. While SPs have many other biological effects, my literature research focused on their anticancer, antioxidant and anticoagulant effects. However, further research is warranted to determine their efficacy and safety before

any products containing SPs are on the market.

**Presentation Type and Session:** Poster IV

### **Tea: Drink to Good Health**

**Stephanie Kahn**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

The health benefits of drinking tea are vast and sensational but are often overlooked. If you could improve your health with a simple cup of tea would you? In December 2013, The American Journal of Clinical Nutrition featured not one, but 11 new studies highlighting the many ways in which tea can improve wellbeing. The evidence to support the health promoting properties of tea is continually growing. This project focuses on different types of teas and their specific health benefits. Tea is an inexpensive item that can easily be added to anyone's daily routine. People who drink tea tend to see improvements in mood, concentration, and performance. Overall, tea drinking appears to lower the risk for heart disease and stroke. Natural compounds called polyphenols in green tea might protect against several cancers, including those of the prostate, GI tract, lungs, breast, and skin. Caffeine and antioxidants called catechins found in green, oolong, and white teas may increase metabolism and promote weight loss. The health properties of tea continue to be discovered and better understood.

**Presentation Type and Session:** Poster IV

### **Teaching Idioms to English Language Learners: Is There a Single Best Strategy?**

**Jaimie Harris**, Speech-Language Pathology

Faculty Mentor: Professor Constance Dean Qualls, Speech Language Pathology

This research investigated the effects of two approaches (structured conversation, conceptual mapping) for teaching idioms to English Language Learners. Idioms constitute a substantial portion of American English, and non-native speakers of English have great difficulty learning this aspect of language. Yet, appropriate comprehension and use of idioms are essential for good communication and promote academic success. Students from an English as a Second Language classroom were given pretest items from The Idiom Comprehension Test (ICT; Qualls & Harris, 1999). These 12 items were short stories containing 4 high, 4 moderate, and 4 low familiarity idioms. The experiment required that two groups of six students each be randomly assigned to one of two teaching strategies (Group 1- structured conversation or Group 2- conceptual mapping). For the training, each group received a 20-minute lesson in either structured conversation or conceptual mapping. One week later, all of the students completed a posttest. The posttest consisted of 12 items on the ICT that they did not see on the pretest. Findings, implications, and the role of the SLP in training idioms will be presented.

**Presentation Type and Session:** Poster II

### **Telomeres, Telomerase and Anti-Aging Therapy**

**Kimberly Chwojdak**, NFS 330: Seminar on Complementary and Alternative Nutrition

Faculty Mentor: Professor Suk Oh, Dietetics and Nutrition

Telomere is a region of repetitive nucleotide sequences at the end of chromatid. Telomeres do not contain any genetic material, but prevent unwanted complications such as chromosomes fusing together. Telomere ends shorten with each division as cells undergo mitosis. This shortening of telomeres has been found to be factor in estimating an individual's life span, although specifics behind this relationship remain unknown. Telomerase is the enzyme that counteracts the shortening of telomeres and the chromosome's lack of ability of complete replicate itself. The enzyme maintains the length of the chromosome. Telomerase is not present in most cells in the body. This enzyme is prominent in malignant cells and stem cells, and absent or nearly absent in somatic cells. This lack of presence explains cellular senescence, or the inevitable aging of cells. Telomerase in somatic or adult cells could reduce cellular senescence, limiting the aging of tissues. If there was a way to inhibit telomerase in cancerous cells, and activate the enzymatic activity in body cells- this opens many potential doors in anti-aging therapies, or the protect against diseases that shorten telomeres. Telomerase supplementation is currently available on the market but its effect on aging is not well documented. In this presentation, dietary supplements for anti-aging will be discussed.

**Presentation Type and Session:** Poster II

### **Tobacco is Wacko**

**Shawn Ford**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

The Healthy People 2020 initiative seeks to reduce the use of cigarettes by young adults ages 18-25. Cigars and cigarette-sized cigars are used frequently as substitutes among young adults. Almost 9 out of 10 smokers started at age 18. Contributing factors to cigarette smoking among young adults include: family and peers; cognitive and affective processes; biological; and genetic factors. Family and peer groups are role models for young adults who could imitate these models if they smoke. Young adults view cigarette smoking as social norms and acceptance. Cognitive and affective processes such as believing that smoking can help manage stress and control body weight is another reason they tend to smoke. Young adults who smoke often experience stress and depression and are more addicted to nicotine than adults. Some people find it difficult to quit smoking because their genetics respond heavily to the nicotine. Communities can get involved to reduce tobacco advertising and promotion of tobacco. Employers can implement policies to stop smoking in the workplace. Lastly, companies can make tobacco more expensive by increasing the tax of the product.

**Presentation Type and Session:** Poster III

### **Tobacco: The New Influence**

**Michael Smith**, HEW 411: Critical Issues in Health and Wellness  
Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Tobacco use is a growing threat to the wellness of our future. One objective for Healthy People 2020 is to reduce tobacco usage among adolescents from ages 12-7, or 9 to 12 grades. It is estimated that 26% of adolescents have used cigarettes, chewed tobacco, sniffed tobacco, or smoked cigars in the past 30 days as reported in 2009. There are factors to be considered in evaluating tobacco use. Environmental factors influence the brain unconsciously. Societal factors can give verbal cues from a role model. Stress can be intertwined with environmental and societal factors, which lead to tobacco as a scape goat. To tackle prevention and reduction of tobacco use, strategies that focus on individual use are appropriate. Personal behavior changes start with the individual. Government officials should strive to implement additional legislation to ensure the best future wellness of our nation by protecting the health and safety of our youth.

**Presentation Type and Session:** Poster II

### **Waking Up on the Wrong Side of the Bed**

**Paige Foley**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Students in grades 9 through 12, usually of 13-18 years, who receive insufficient sleep at night (less than 8 hours), face adverse effects throughout the day, according to Healthy People 2020. Inadequate sleep in students leads to reduced overall mental health including poor regulation of mood and emotion, increased aggression, depression, and problem behaviors. The physical environment of a student can impact the amount of sleep they receive in that if they do not feel safe and secure they may have difficulty falling asleep and remaining asleep for the duration of the night. If students do not have a strong social support network that encourages a regular sleep schedule or bed time, the student may face complications receiving adequate sleep at night, hindering their ability to properly function at school. If a student remains undiagnosed with a genetic sleep disorder, they will also suffer from receiving sufficient sleep at night. Adequate sleep is a crucial part of a student's ability to develop and function. It is recommended that parents monitor how much sleep their child receives as well as create a sleep schedule to ensure an optimal duration of sleep.

**Presentation Type and Session:** Poster II

### **The Weight of the Obsession**

**Matthew DiPalma**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

"No woman can be too rich or too thin" as stated by Dorothy Parker, a renowned writer and poet from the twentieth century. Unfortunately, that is the mindset of adolescents today; thin is better.



Even though 69.2% of adults in the U.S. are overweight or obese, somehow the stigma of “thin is better” exists. Eating disorders can be divided into three main categories: overeating associated with obesity; under eating associated with anorexia; and those who regurgitate themselves or bulimia. Healthy People 2020 includes an objective to decrease the number of adolescents who engage in disordered eating from 14.3% in 2009, to 12.3%, projected for 2020. Statistics show the population that struggles the most with this problem is adolescents; particularly those in high school. High School is a time of transition, where demands are put on young people, unsure if they can live up to such expectations. Along with social pressures of high school additional determinants that could trigger an eating disorder include genetics, the media, and the physiological aspects; the desire to be perfect. Adolescents should always be encouraged to eat healthy and have positive influences around them. Self-esteem is extremely important when dealing with eating disorders, and is critical to a successful outcome.

**Presentation Type and Session:** Poster III

### Why Nursing is the Mother and Baby's Breast Choice

**Sarah Jacobs-Ferderbar**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Choosing to breastfeed a child has many long- and short-term benefits for the mother and child. According to Healthy People 2020, 74% of infants born in 2006 were ever breastfed. Many women are not breastfeeding, but breastfeeding decreases the incidence of infectious and chronic diseases in children, decreases mortality rates, and has many benefits for the mother. The Healthy People 2020 objective seeks to increase the number of women breastfeeding to 81.9%. Education, support given to the mothers, and income all can benefit or be barriers to the mothers' decision to breastfeed. With increased education by health care professionals before, during, and after the pregnancy, mothers can specifically understand the impact that breastfeeding has on health outcomes for their child. Training and education will insure that the mother is receiving the best advice possible, and when incorporated into medical settings, this information has the potential to reach the father of the child as well. Fathers, family, and parents all play a large role on the outcome of the decision to breastfeed. With knowledge, education, and more overall support given to the mother, breastfeeding rates can improve.

**Presentation Type and Session:** Poster I

### Why Would I Drink That?

**Myia Cheatom** and **Brandon Quintanilla-Hernandez**, UNC 189: Information & Engineering Technology

Neal Mazur, Computer Information Systems

Did you know that what you drink could make a big difference to your health in more ways than you might think? Drinks like soda, sports drinks and energy drinks are loaded with sugar and empty

calories. Drinking too many sugary drinks leads to an increased risk of being overweight or obese. In this web-based presentation, we will explain the benefits and risks of consuming different drinks using comparative visuals, statistical graphs and research obtained through various sources. We will look at a number of aspects of the use of sugar-based drinks including the nutritional value of the drinks, the calorie content, sugar-added drinks versus drinks with natural occurring sugar, and the type of sugar used. The differences between different categories of drinks such as soda, sports drinks, energy drinks, and juices will be investigated. The effects of sugar-based drinks on obesity will be presented. Finally, healthy alternatives to sugar-based drinks will be discussed.

**Presentation Type and Session:** Poster III

### Woosah (Stress-Less)

**Kathryn Smith**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health and Wellness

Stress is a common occurrence among all graduate and undergraduate college students according to Healthy People 2020. Its effects are not only psychological and physical, but also play a role in academic performance. The stressors themselves may not directly cause a decline in academic performance, but added to factors like time management and anxiety levels, the stressors are likely to have an impact. Some of these stressors may be personal, interpersonal, or environmental that may either be every day hassles or larger life events. These stressors may cause chronic stress or short-term problems, but in either case have an affect on the student in many ways, particularly if they do not have adequate coping strategies. Events such as exams, homework load, relationships, sleep patterns, and new responsibilities contribute to the stress of a college student. Many surveys have discovered the causes of stress and its effect on schoolwork, allowing for comparisons to be made based on gender, grade level, age, and environment. Stress management sessions could be required for all incoming freshmen during orientation as a way to prepare them for college life. Another suggestion could be to hold sessions during the semester for anyone to attend and have counseling staff provide more one-on-one attention to those who need further support. College students cannot avoid stress completely, but they can learn to develop better coping skills that will reduce the current rate of 27.4% of students who reported that their academic performance was adversely effected by stress, meeting the Healthy People 2020 objective.

**Presentation Type and Session:** Poster II

### Working Hard or Hardly Working?

**Jeffrey Rodrigue**, HEW 411: Critical Issues in Health and Wellness

Faculty Mentor: Professor Barbara Olivieri, Health And Wellness

One objective of Healthy Campus 2020 is to increase the proportion of students who report meeting current federal guidelines for muscle-strengthening activity. The health problem associated



with the objective is gaining unwanted weight. Lifting weights as opposed to completing only cardio is as important for many reasons. Muscle strengthening has benefits, such as the increase of energy levels, physical strength, better health, enhanced posture, decrease of injury, healthier when old, and prevention of disease. College students want to be fit and healthy, muscle strengthening is the way to make it show by improving your physical appearance. During 2011, 20.6% of U.S. adults were classified as meeting both the aerobic and muscle-strengthening guidelines, including 23.4% of men and 17.9% of women. There are a wide variety of determinants for the lack of muscle strengthening activity within the student population, including lack of knowledge on how to build strength and muscle, how to diet correctly, motivation, and cost. A recommendation that could promote a healthy behavior change is bettering time management skills improving scheduling possibilities to participate in muscle strengthening activities.

**Presentation Type and Session:** Poster III

### **Working Memory in Typically Developing Adolescents**

**Hayley Payne**, SLP 497: Research

Faculty Mentor: Professor Constance Dean Qualls, Speech  
Language Pathology

The theoretical construct of working memory allows new information to be temporarily stored and manipulated. Working memory is an important aspect in learning. We use working memory to complete tasks that require comprehension of information particularly when new information is being introduced. This research will investigate working memory in typically developing 8 to 14 year olds (males and females) with the intent of establishing a baseline for future research studies. Prior to the experiment, each student's speech and language abilities will be assessed using the Peabody Picture Vocabulary Test (PPVT-4; Dunn & Dunn, 2007) and the Clinical Evaluation of Language Fundamentals (CELF-4; Semel, Wiig, & Secord, 2003). For the experiment, two span tests will be used to assess the students' working memory. The author plans to conduct this research through a summer research fellowship. This poster session will present the rationale, theoretical framework, and the methods that will be used to complete this research study.

**Presentation Type and Session:** Poster II

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## *Humanities*

### **African American Athletes on the Auction Block**

**Oliver Colbert**, COM 450: Communication and Society  
Faculty Mentors: Professor Michael Niman, Communication and Professor Ron Stewart, Sociology

African American Athletes on the Auction Block My work examines how our society positions unlikely success in professional sports as a way-out of poverty for inner-city children — particularly young African American males. I examine how corporations select athletic icons such as Michael Jordan, Shaquille O'Neal, Kobe Bryant, Dereck Jeter, Muhammad Ali, and others as sponsors for companies like NIKE Gatorade, Reebok, etc. I document the money corporations bid to secure brand endorsement contracts from the most prominent athletes. This paper will examine the effect that auctioning off these celebrity identities, particularly those of African American star athletes, has on the psyches of both young African-American consumers and on the perceptions of African-Americans held by global audiences

**Presentation Type and Session:** Oral — Humanities and Social Sciences: I

### **The Cartesian Bête-Machine Reconsidered: La Mettrie's (1709-1751) Solution**

**Troy Caruana**, PHI 499: Philosophy Honors  
Faculty Mentors: Professor Kimberly Blessing, Philosophy, Professor Deborah Hovland, Modern and Classical Languages, and Professor Jason Grinnell, Philosophy

Among the key thinkers of the French Enlightenment, figures such as Jean-Jacques Rousseau, Voltaire, and Denis Diderot come to mind. One lesser-known figure is the 18th century French physician and philosopher Julien Offray de La Mettrie (1709-1751). La Mettrie is one of the first and most radical French Materialists. He has remained a clandestine figure since his early death in 1751 and there exists only a very small body of research on La Mettrie including several of his works that have yet to be translated into English. The title of La Mettrie's most influential work, *Homme Machine* (1747) or *Machine Man*, is an allusion to Descartes' doctrine of the bête machine, which provided the basis for La Mettrie's materialist viewpoint. Descartes' bête machine view suggests non-human animals are like machines that are void of all cognition and sentiency. Whereas Descartes believed that the human body was a machine distinct and different from the immaterial soul, La Mettrie adopts Descartes bête machine and extends it to both mind and body. La Mettrie acknowledges the influence Descartes has on his thought in his *Les Animaux Plus que les Machines* (1750), yet the degree to which La Mettrie adopts Descartes' mechanism remains unclear. La Mettrie has been credited with applying Descartes' mechanistic

view of animals to man. I argue that despite the striking similarities between the bête machine and the homme machine, La Mettrie is not adopting Descartes' bête machine model. His reference to Descartes' bête machine is a component of La Mettrie's satirical writing style and his ongoing polemic against Cartesian dualism.

**Presentation Type and Session:** Oral — Humanities and Social Sciences: I

### **Chocolate: A Sweet Delight with 500 Years of Slavery and Exploitation**

**Adza Beda**, Communication  
Faculty Mentors: Professor Michael Niman, Communication and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

My work examines the horrific exploitation of chocolate industry workers, including those who are trafficked and enslaved, juxtaposing this horror with cacao farms in Belize that offer living wages and fair working conditions. My work begins where the history of the transatlantic chocolate trade originates. Historically this means looking at the Portuguese colony that later became Brazil. Utilizing the work of historians, I document and chronicle Brazil's history of exploitation. Moving into contemporary times, I utilize the work of cultural anthropologists and journalists to examine the current conditions of chocolate production, specifically examining the Ivory Coast, Mali, and Burkina Faso, while also including ethnographic research of contemporary Mayan life in Belize. In addition I incorporate my own participatory ethnographic research conducting participatory observation on a cacao farm in Belize cultivating traditional heirloom cacao. My conclusion contrasts fair labor and sustainable environmental practices in Belize with the exploitation of workers and the environment that is seen in in countries such as Burkina Faso, Mali, and parts of the Ivory Coast.

**Presentation Type and Session:** Oral — Humanities and Social Sciences: I

### **Chocolate: Why We Just Can't Have Enough Despite the Horror of Production**

**Adza Beda**, COM 450: Communication and Society  
Faculty Mentor: Professor Michael Niman, Communications

My research examines the Romanticism in marketing chocolate and the indifference of consumers to the horrors of chocolate production. Global chocolate monopolies have influenced the trajectory of chocolate sales for centuries. My work examines the influence of big businesses, specifically Hersey, Mars, and Cadbury, as they perpetuate consumer ignorance regarding the treatment of chocolate workers, and appeal to our sensual desire to enjoy chocolate. The physiological side of consumer desire emerges in our body's natural reaction to cacao. The emotional aspect is choreographed by various advertisements for chocolate. My research explores advertisements in USA and England in order to

document the effects of these advertisements on our product sales and perception. My work juxtaposes this romanticized perception of chocolate with a brief synopsis of some of the darker sides of chocolate explored in my previous research.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

### **Communicating with Kemet: A Study in Ancient Egyptian Expression Through Religion, Language and Dress**

**Ariel Llewellyn**, COM 499: Ancient Egyptian Communication  
Faculty Mentor: Professor Ann Liao, Communication

The purpose of this study is to express and analyze the way Ancient Egyptians communicated in a cultural context through three major outlets (religion, language, and dress). It delves into major themes involved within each topic to provide a survey relevant to the specific categories and to celebrate this unique culture of long ago. Questions answered as a result of this research include-How did the Ancient Egyptians view their world? What were the intricacies of their religious practices and how did they manifest their ideas of cosmology? What was the significance of hieroglyphics in playing a part in their worldview? How did clothing and makeup shape the perception of an individual in Ancient Egyptian society? All of these elements play a significant role in understanding the communication of such an ancient people. Secondary research will be conducted through ethnographic texts and media to provide a glimpse of ancient Egyptian worldview, language use, and attire to better understand how ancient Egyptians communicated with one another.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

### **Decolonizing Hip Hop**

**Taven Gibson**, COM 450: Communication and Society  
Faculty Mentor: Professor Michael Niman, Communication

My paper examines the role of Hip-Hop on global youth cultures. Hip Hop, which once expressed the voice of the revolutionary black liberation movements, has devolved into a corporate misogynist parody of the struggle that African Americans fought for. Corporate music labels wouldn't market early political hip-hop featuring names like Gil Scott Heron, nor did they support early Gansta Rap, arguing that it would not sell. When white suburban youths became enamored by the profanity and vulgarity that the new forms of hip hop portrayed, corporate labels exploited this bastardized sound and marketed it as the authentic lifestyle of Black people. My work examines how corporate influence has served to culturally devolve Hip Hop from its liberating beginnings to what it is now, transforming it from a powerful expression of pride and justice, to a vector of misogyny and self-hatred.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

### **The Effect of the Media's Eurocentric Figureheads on the Mental Health of Diverse Populations**

**Brittney Singletary**, COM 450: Communication and Society  
Faculty Mentor: Professor Michael Niman, Communication

My research makes the argument that consumer culture in the United States is based on Eurocentric marketing concepts and iconography, the use of which leads to many stress and mental health concerns in adolescents of non-European ethnicities. I focus on ethnic diversity in the United States and reference how consumer culture in the form of marketing messages marginalizes diverse non-white ethnic groups both nationally and in the media that we export globally. My work argues that the lack of figureheads and role models for diverse adolescents to relate to in advertisements and social media marketing efforts leads to mental health issues regarding body image (anorexia nervosa and bulimia) and emotional instability (depression and obsessive tendencies).

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

### **The Effects of Pornography and Sexual Objectification on Intimate Heterosexual Relationships between African Americans**

**Sade McKenzie**, COM 450: Communication and Society  
Faculty Mentor: Professor Michael Niman, Communication

Sexual objectification of women through pornography and advertisements has played a significant role in the way men examine woman. Men view women as objects like those to be consumed and later disposed of. Previous research argues that sexual objectification can be more prevalent within "minority" communities. Particularly, African American women are portrayed through various media outlets as sexual savages. Researchers conclude that minority women's experiences of sexual objectification work in concert with many other forms of oppression to negatively affect their mental health. My work contextualizes an examination of these studies with in depth interviews of three African American women and three African American men who are college students from Buffalo State. In particular, I examine their views on Black pornography and sexually objectified advertisements and their effects on intimate relationships. The purpose of this research is to investigate how Black pornography and sexual objectifying advertisements with women as the center focus, effect intimate relationships between African American men and women.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

### **Engaging with the History of Comics and Reworking Frameworks Through Michael DeForge's Work**

**Nyemh Ghareb**, ENG 499: Independent Study  
Faculty Mentor: Professor David Ben-Merre, English

Michael DeForge's comics are considered a part of the "art-comics" subgenre, but, in spite of this marginalization, his work consistently interacts with the history of the medium. DeForge's diverse comics range from horror and syndicated strips to superhero comics, all of which simultaneously function as a commentary on each distinct genre. By appropriating the basic frameworks innate to specific genres and formats, DeForge straightforwardly documents their history through a stand-alone narrative, and, by merging these elements with his signature brand of grotesque horror and humor, he imbues his work with additional layers of context. This talk offers a survey of DeForge's vast body of work within a general history of the comic form. I consider how the old is filtered through the new. Additionally, I will explore the manner in which traditional page and panel layouts are altered to enhance the themes of the narrative with minor tweaks that reject the established terminology of the medium.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

## **Escape from Within: The Conflict between Buddhism and Consumerism**

**Amanda Matthews**, COM 450: Communication and Society

Faculty Mentor: Professor Michael Niman, Communications

I will be doing my research on the Eastern philosophy of Buddhism and its conflicts with the values of our consumer culture. Buddhist teachings state that attachment, greed, and desire cause suffering. Desire, however, is the fuel that sustains consumerism. In our culture we are constantly bombarded with media, so much so that it often dominates our waking hours constantly pointing us toward external material forces in our search for satisfaction and "happiness." Buddhism, by contrast, suggests happiness will not be found externally, but internally within our selves. In my research, I examine the role self-actualization and self-awareness play in distinguishing "want" and "desire" from "needs," thus helping us become more aware of how the culture of consumerism undermines our personal quests for happiness.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

## **The Expansion of the American Presidency**

**Daniel Darnley**, Music Education and History

Faculty Mentor: Professor Jean Richardson, History and Social Studies Education

This presentation will showcase research on how the powers of past US presidents including Jefferson, Jackson, Lincoln, and FDR have expanded. Both domestic and foreign events such as the Civil War and World War II were major contributing factors leading to the expansion of the executive office. My research was conducted at the Library of Congress in Washington, D.C. and relied on primary sources significant to each President that offered interesting perspectives into their political and personal

environments. For example, Thomas Jefferson used his personal letters with fellow politicians to share his political agenda. These letters are filled with metaphors on governing, life lessons, and philosophic thought on government that shed light into the way he viewed the Presidency. For Andrew Jackson, study of his veto messages provides specific examples of the way he believed the government should run. Understanding the way he believed the three branches should interact and function begins with his veto messages and public addresses, which provide ample rationale for difficult political decisions such as the Bank of the United States and the Nullification Crisis. From reading letters written by Lincoln emerges a man faced with turmoil due to the treacherous political environment surrounding him. Lincoln used letters to conceal his plans and political ideas on issues such as Emancipation and the overall commanding of the Civil War. Franklin Delano Roosevelt's "Fireside Chats" brought the President into the American home for the first time, and, as a result won him an overwhelming victory in the election of 1936. Looking at his Presidency in two lights, the first comprised of New Deal Programs and the expansion of domestic policy whereas the second focuses on the abroad issue of World War II, much can be ascertained about Roosevelt as a political leader. Understanding the political climate and environment of past presidents is essential for understanding the ways the office has, and perhaps will, continue to expand.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

## **The Gender Gap Stops Here! Promoting Women in Philosophy on Campus**

**Sarah Caputi**, Philosophy

Faculty Mentor: Professor Kimberly Blessing, Philosophy

Inspired by a 2013 independent study on women and philosophy, the goal of this project is to further promote women in philosophy. For various reasons, very few women study philosophy. Only about 16-21% of professional philosophers are women. Additionally, recent publicity has shed light on accounts of sexual discrimination and harassment against women in a number of prestigious philosophy departments. To address these and related issues, a departmental support group for women, "Women in Philosophy" (WIP), was formed in 2013. WIP is both an academic and social club, with two faculty mentors who are women and professional philosophers. Our official emblem, designed by one of our student-members, is tongue-in-cheek: a woman's shoe with a stylized Greek phi (ϕ) (for philosophy) as the heel. WIP provides avenues for women to study and discuss philosophy, but also to share concerns about the challenges related to being a women studying philosophy in particular, or being a women intellectual in general. Meeting sessions include mentoring; role-modeling; bonding and encouragement among female majors, minors and faculty; dissemination of information regarding undergraduate research programs, seminars,



conferences, and graduate programs in philosophy; documentary screenings including women's rights and portrayal of women in the media; and more.

**Presentation Type and Session:** Poster III

### **Getting 'Luded' at the Disco: Quaalude Domination of the 1960s and 1970s**

**Sarah-Kay Sweetland**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

From the late 1950s to the early 1980s methaqualone or Quaaludes were abused by the youth of inner cities in discos across America. The Quaalude users were in high school or college and often took the drug with alcohol. Quaaludes, or Ludes, as it is commonly referred to was first synthesized by Indian doctor as a non-addictive drug, but it quickly became one. Originally, this sedative was prescribed as a sleeping pill or an anti-anxiety drug. This drug is similar to barbiturates in that it causes relaxation in its users. While under the influence of Quaaludes, if one were to fight the urge to sleep for 20 to 25 minutes they would feel happy and euphoric. It would also cause its users to feel numbness in limbs and muscles. It also had sexual arousal effects as well, considering that it was abused by disco goers this drug fit in right with the lifestyle at the time in inner cities. In the United Kingdom, it was sold legally as Mandrax. Unlike barbiturates, whose side effects are felt quickly, Quaaludes and Mandrax took longer to take an effect in users but its side effects lasted longer, sometimes 4 to 5 hours, in Quaalude users than barbiturate users. Once its euphoric side effects were revealed it then became a street drug. It was widely prescribed and abused in Britain and Europe. By the early 1970s it was one of the bestselling sedatives being sold illegally at discos and in the streets. It took almost 30 years for the Food and Drug Administration to end the prescription of Quaaludes. The DEA had also banned its usage because it had no real medical purpose. After its banning in the U.S. it then turned into an illegal drug world over. Quaaludes were abused to such an extent that they fueled the disco in the 1970s.

**Presentation Type and Session:** Poster I

### **The Global Fight for the Internet: Social Movements in a World of Mass Surveillance**

**William Watkins**, COM 495: Social Movements & Internet 3.0

Faculty Mentor: Professor Michael Niman, Communication

Technology has historically played a significant role in the transformation of society and it will continue to do so. Drawing on my own professional experience and search of current scholarship I explore the role of the Internet and mobile technologies in shaping the dynamics of our contemporary networked society. WikiLeaks gained notoriety in 2010 after posting video footage from the Iraq war and 80,000 secret documents about the Afghan war on the Internet. In 2011 we saw the politicization of the Internet within the

wake of "augmented revolutions," such as the Arab Spring, Occupy Wall Street, and the increasing presence of Anonymous. These movements have led to new forms of media and online organizing among civil society organizations. The response by governments around the world to these movements has been manifest in new and diverse forms of censorship, institutional pressure, prosecutions, and surveillance. For example, after former private contractor Edward Snowden exposed the U.S. National Security Agency's program of mass surveillance in 2013, activists and journalists have suffered surveillance and exile. Civil society has responded in the form of a growing movement of digital rights defenders fighting for the future of the Internet, and in turn, society. I present the current landscape as global conflict within a historical examination of information technology in a capitalist society. Out of concern I ask: will the Internet be a tool of empowerment or oppression?

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

### **Globalization and Branding of American Sports**

**Thomas Kaufman**, COM 450: Communication and Society

Faculty Mentor: Professor Michael Niman, Communication

My research examines how professional sports organizations, particularly the National Football League (NFL) promote their brand just like any other consumer product, extracting maximum revenue from its fans by marketing a plethora of licensed items at inflated prices. These organizations not only promote their brand, but assert their dominance in the global sports industries by expanding the marketing of their sport and paraphernalia globally, often supplanting native sports cultures. This globalized presence provides the NFL with a potentially larger consumer base to expose its brand to. This increases the market for NFL products, and hence, increases NFL revenue. It also ultimately creates a worldwide consumerist sports culture dominated by brand-based marketing, at the cost of local sports cultures.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

### **Globalization of Hip-Hop: How America's Most Controversial Musical Genre Has Evolved and Influenced the World.**

**Joshua Beck-Jones**, COM 450: Communication and Society

Faculty Mentor: Professor Michael Niman, Communication

It's been over forty years since the musical genre of Hip-Hop emerged from inner-city areas of New York City. Since its creation, Hip-Hop has stirred up endless controversies within the United States and around the globe. This paper documents the controversies surrounding Hip-Hop within the United States, including how consumerism has transformed hip-hop, a once a proud product of African-American culture, into a corporate beast fueled by racism and misogynistic lyrics. It also discusses the cultural milestones

stemming from Hip-Hop evolution in the United States, and highlight how Hip-Hop has globalized and evolved in other areas of the world, sprouting Hip-Hop-influenced musical subcultures different from commercial Hip-Hop popular within the American culture.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

## **The Good Fight: Comparing the Coverage of Hockey Violence in the U.S. and Canadian Media**

**Kyle Bukolt**, COM 450: Communication and Society

Faculty Mentor: Professor Michael Niman, Communication

The Entertainment and Sports Programming Network's (ESPN) presentation of the National Hockey League (NHL) is one that glamorizes violence in the sport above all other aspects. My research centers on a pilot study I conducted in which I compared daily coverage of ice hockey on ESPN's most televised broadcast, Sportscenter, to the NHL Network's daily recap show, NHL Tonight. I compare how Canadian media covers and represents the NHL, promoting the sport of hockey for its favorable attributes and creating and sustaining a healthy sporting culture among fans, players, and citizens in that country. I contextualize my findings by also examining how the celebration of hockey violence affects NHL revenue streams and how financial competition with other sports leagues impacts a tacit acceptance of hockey violence.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

## **Homogenization versus Cultural Adaptation: Effectiveness in Global Advertising and World Media and Consumer Culture Impacts**

**Bethany Nalezynski**, COM 450: Communication and Society

Faculty Mentor: Professor Michael Niman, Communication

My research examines the effectiveness of global uniformity in advertising (standard approach) as well as a culturally adaptive approach that allows for individual societal considerations in advertising. Through examining these two strategies and looking at their impacts in global markets and cultures, my work examines how both of these strategies further the spread of consumer culture worldwide and how brands are becoming local cultural icons. In particular, I examine how various branded products and services are homogenizing global media and culture.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

## **How Are College Students Entering the Job Market Preparing Their Facebook Profile?**

**Sade McKenzie**, Communications and Journalism

Faculty Mentor: Professor Marguerite Knowles, Communication

Facebook is one of the leading social media websites used by college students and caters to more than 900 million people, including students at over 2,000 colleges and universities. The popular site has become essential to the college experience. Research has determined that students are placing themselves at a disadvantage in the job market by posting private and inappropriate information on their profiles, as employers now routinely review applicants' Facebook profiles for character information unavailable on their resumes (Cole Jr., 2006). In this study, I investigate how Buffalo State students present themselves on their Facebook profiles. The purpose of my research is to observe the type of information students place on their profiles, and whether students entering the job market alter their Facebook profile in anticipation of their job search. I predict finding that many students will not feel comfortable allowing employers to view their Facebook profile. I also predict that college seniors are more cautious about the information that they put on their Facebook profiles than college freshmen and sophomores.

**Presentation Type and Session:** Oral – Business, Computer Information Systems, Education, and Engineering Technology

## **If These Gardens Could Talk: Evidence from Jerusalem Gardens That Point Us Toward Jesus Christ**

**Leah Daily**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor Seth Oyer, Communication and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

In February 2014 I had the opportunity to travel to Israel on an educational tour that lasted for two weeks. The most significant part of the trip for me was the time spent in Jerusalem exploring ancient locales that were foundational to the Jewish, Christian, and Muslim faiths. The focus of my research is on two gardens that are crucial to the Christian faith: the Garden of Gethsemane and the Garden tomb. The Garden of Gethsemane is where Christians believe that Jesus prayed in agony on the night he was arrested and was ultimately condemned. The Garden tomb is where many Christians believe that the body of Jesus was buried and where he rose from the dead. My research aims to explore both gardens and considers the following: (1) What do the Scriptures say about the garden? (2) What evidence is there that makes Christians believe that the present-day location is the same location from the Bible? and, (3) Can we conclude that the present-day garden is the same garden from ancient times? To try to answer these questions, I am doing a comparative analysis of a historical text (the Scriptures) with modern-day evidence, findings, and theories found in books and other (including Internet)

sources. The overarching goal of this research is to communicate the significance of the two gardens in the history and doctrine of Christianity.

**Presentation Type and Session:** Poster VI

### **The Impact of Tourism on Developing Tourist Destinations: Consumer Culture Visits Paradise**

**Shannon Polvino**, COM 450: Communication and Society  
Faculty Mentor: Professor Michael Niman, Communication

Increasing cross-cultural tourism now impacts societies globally. While many Americans would argue that vacationing increases their overall happiness and decreases their stress, tourism is also a significant symbol of consumerism. My research examines a combination of subjective and objective assessments of the consumption of tourism-related products (tours, resort visits etc.), and documents how such consumption expresses the attitudes and behaviors of First World tourists. It also documents the impact of tourism on the culture and environment of growing tourist destinations in developing countries. This research uncovers the globalization of consumer culture and long-term impact on the residents of these destination cultures.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

### **The Invisible Woman: Exploring the Juárez Femicides within Desert Blood**

**Sabrina Santos**, English  
Faculty Mentor: Professor Lorna Perez, English

Alicia Gaspar de Alba's mystery novel *Desert Blood* provides a broad framework for examining the Juárez Femicides in Ciudad Juárez, Mexico and ultimately reveals there is no singular solution to end the violent deaths of women. *Desert Blood's* protagonist, Ivon Villa, successfully rescues her younger sister Irene from an underground snuff porn ring but is only able to do so through her new mestiza consciousness, which is a blending of cultures, that enables her to decode ambiguous graffiti in border spaces that are familiar to her. Through de Alba's protagonist, she illustrates that this crime wave is a transnational issue due in part to the U.S. run maquiladoras situated on the U.S.-Mexico border with various other theorizations including corrupt government officials, Border Patrol officers, and serial killers among others. Ivon is a reminder throughout *Desert Blood* that this is a real border space with real women's lives at stake and that in order for these crimes to end there must be a collective effort or we will be confined to saving one woman at a time, if possible.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

### **Joining the Black Parade: Shedding Light on a Dark Romance**

**Brianna Webster**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor Edward Taylor, English and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Brianna has written a piece of literary journalism about a band called My Chemical Romance, which was labeled as an emo suicide cult by the "Daily Mail" and their lyrics mistaken for propaganda by Glenn Beck of Fox News. However, even though the band is widely associated with the "emo" music genre, the band's real aim, according to lead singer Gerard Way, is "just to get people to get over their stuff so they can live." To the band's fans, MCR is not just music, but a welcoming culture for people who feel like they do not fit in. Brianna uses creative nonfiction to show her experiences with being a fan of the group and what that meant for her. She then combined that with research to discover what impressions the band had on others. Inside the culture, Brianna has found that there is no clear mold that the fans fit into. Some look and act like the emo stereotype of MCR fans, while many others who don't at all. However, they are all connected by a bond so strong that even a year after the band's break up they are still passionately reminiscing about and discussing the band and its continuing importance to them.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

### **Lackawanna's Yemeni Community: Bound Together by Culture, by Religion, by Interdependence – and by Soccer**

**Leif Reigstad**, HON 400: Muriel A. Howard Honors Colloquium  
Faculty Mentors: Professor Thomas Reigstad, English and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

As an intern at Artvoice Newsweekly last summer, I spent a few months with the Yemen Soccer Club, a youth-through-adult soccer organization in Lackawanna's First Ward, a close-knit neighborhood with a high concentration of Yemeni-Americans. It's also where the Lackawanna Six were arrested after 9/11. After traveling back and forth to the First Ward - I spent about three months reporting - I wrote a longform cover story for Artvoice that showed what life is like for this Yemeni community, before and after 9/11, and how it used soccer to both keep their own culture alive and also cope with post-9/11 racism and anti-Arab paranoia. What I found while there was a thriving community – maybe not thriving economically, but certainly thriving culturally. The Lackawanna Yemenis are a little known yet integral part of Western New York's cultural heritage. In my presentation, I'll blow up the print story from Artvoice, with pictures, and have a few footnote type things with some extra information that didn't make it into the story. I'll be available for questions, and I'll

have a short, separate oral presentation prepared summarizing the story and what I found.

**Presentation Type and Session:** Poster III

## **Language and Identity: Exploring How Language Affects the Construction of Self-Identity in Bilingual Individuals**

**Rachael Engert**, HON 400: Muriel A. Howard Honors Colloquium  
Faculty Mentors: Professor Raul Neira, Spanish and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

A social constructionist approach defines identity as something that is both self-constructed and socially constructed based on one's contextual experiences as an individual. A person may self-identify in various ways contingent upon their social context. Janet M. Fuller develops this idea in her book *Spanish Speakers in the USA*, revealing two distinct ways in which bilingual individuals tend to identify themselves. Some will attest to having dual and distinct self-identities based on the factor of language and the context in which they utilize each language, while others would say their bilingualism contributes to one collective and hybrid self-identity, constructed by the sum of the two established languages they speak. I have studied these concepts of identity as it relates specifically to individuals from the US who are bilingual in Spanish and English. I plan to further develop these ideas by determining specific ways in which language contributes to self-identity in terms of the two theories that Fuller presents, collecting supporting evidence from interviews with several bilingual individuals.

**Presentation Type and Session:** Poster VIII

## **The Publishing Paradigm**

**Jeffrey Pawlak**, COM 450: Communication and Society  
Faculty Mentor: Professor Michael Niman, Communication

My research paper, "The Publishing Paradigm", explores the new world of literary publishing that has emerged in the wake of such popular electronic devices like the Amazon Kindle, Barnes and Noble Nook, Apple's iPad and other tablet computers. The companies behind these devices have allowed authors to self-publish their work on the device without the need of an agent. By eliminating the role of a "gatekeeper," these electronic devices have allowed authors to disseminate their work globally and let their audiences decide if it is worth reading or buying. My methodology includes chronicling the history of these devices and interviewing authors who aspire to find success on these self-publishing platforms, as well as those authors who have already found success in these venues. I also explore the effects these devices have on the traditional literary publishing industry.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

## **REAL Women Please**

**Nikki Styliades**, COM 450: Communication and Society  
Faculty Mentor: Professor Michael Niman, Communication

My research examines the 'AerieReal' ad campaign with a focus on the campaign's message regarding women's body image. Aerie, a brand of American Eagle Outfitters Inc. (AEO), announced that they would no longer be digitally retouching photos of their models. This is a seemingly positive step in the media world for women's body images, however, after examining these new untouched photos, I realized that they all still portray very skinny models with flawless features. I argue that this campaign is actually more harmful to women's body image because it sells a message that this is what "real" women are supposed to look like – that you don't need Photoshop to be perfect, because our girls already look like this and you should too. My methodology includes an analysis of AerieReal ads and a content analysis of social media feedback from the brand's fans. I argue that the girls and young women (just about all of Aerie's customers and fans are female) who are praising the company for their decision to forgo digital model enhancement are going to be nonetheless affected much more by the inflated beauty standards Aerie is now promoting for "real" women, ultimately leading to more cases of body dysmorphic disorder in young girls.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

## **Service-Learning on a National and Global Level**

**Michael Canfield**, COM 450: Communication and Society  
Faculty Mentor: Professor Michael Niman, Communication

Buffalo State puts an emphasis on service-learning, with a concentration on the local community. Working with Project Censored takes the service-learning approach to national and global levels through validating news stories that are important to people living in the United States and all over the world. Stories that Buffalo State students worked on were published on Project Censored's website, and one group of students had a story published in Project Censored's book of the top 25 censored stories. Working with Project Censored through service-learning is a unique and interesting way to engage students in the world around them, beyond what the mainstream media informs us. If the end goal of journalism is to inform people of the world around them and encourage participation, what better way to get people's stories out and inspire change. This paper documents how this Buffalo State's Service Learning course provided a template for universities and colleges across the U.S. and Canada, with a Buffalo State student traveling to participate in preparing faculty to teach similar courses.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I



### Signing Away Self-Esteem

**Angelina Messina**, COM 450: Communication and Society  
Faculty Mentor: Professor Michael Niman, Communication

There are many studies that explore how heavy media consumption can lead to depression, eating disorders, anxiety or low self-esteem for women. The purpose of my research is to further investigate the impact of unreasonable body image expectations in the media on young women. My work focuses specifically on professional fitness models and professional cheerleaders who attempt to attain the “perfect” body. Though there is clearly no single cause for body dissatisfaction or an eating disorder, this research argues that once exposed to a media environment where expectations of attaining this perfect body are the norm, women enter a lifelong struggle that often results in damage to one’s self esteem and self-image, if not their health. My work examines both the media environment that sets unachievable goals, and the culture of cheerleading and modeling that oppress the women we see in these images.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

### Tea: Traveling Plant from 1848 to 1862

**Constance Fimbel**, HIS 400: Senior Seminar  
Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

By the eighteenth century tea drinking culture had trickled down from the Monarchy to the every part of society in Great Britain, this spread led to a high demand of tea imports from China. Tea and its journey out of China is made possible because of the East India company, who brought together western tools and Chinese knowledge about tea. To ensure their supplies the East India Company would hire an individual who would go into China to gather tea plants, and knowledge on processing tea for them. This individual was named Robert Fortune, and his trip to China would bring tea industry to India. Fortune who wrote books about each of his visits to China was a Scottish botanist who disguised himself as a Chinese native and traveled in land to gain tea and knowledge. In his attention to detail Fortune records the proper conditions for plants to thrive and tea processing steps and tools. By using western tool like the Wardian Case, designed to allow plants to grow without daily watering and to seal out bad weather during ocean transport Fortune is the key to tea leaving China.

**Presentation Type and Session:** Poster V

### Unmasking the Horizons of Literary Criticism in Ralph Waldo Emerson and Ezra Pound

**Tamara Burross**, ENG 499: Senior Honors Thesis  
Faculty Mentor: Professor David Ben-Merre, English

Ralph Waldo Emerson’s transcendentalist philosophy and Ezra Pound’s *The Pisan Cantos* provide a fruitful ground for the

comparison of the complex interconnectedness between politics and aesthetics that the authors explore in their work. Both Emerson and Pound test the elasticity of those concepts within their art and within their controversial personal lives. In these works, they push beyond mere aesthetics and politics and align their art with human experience. Despite their seemingly opposing ideas about American art, Emerson and Pound also speak to each other in their exploration of vision and figuration. Emerson’s speaker argues, “it is the eye which makes the horizon, and the rounding mind’s eye which makes this or that man a type or representative of humanity.” Similarly, Pound explores a humanistic theme when he is “unmasked” in Canto LXXXI. My paper argues that considerations of vision and figuration in these works should extend beyond the false binary of “aesthetics or politics,” and should be inverted back at readers who reciprocate their own configurations of aesthetics and history. In so doing, I will consider the aesthetics of these authors, while not sacrificing an understanding of their biographies and politics, which, in its own way, can prove redemptive.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

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## ***Physical Geography, Sciences, and Mathematics***

### **Acoustic Doppler Current Profilers in the Buffalo River: Processing the Data to Support the Study of River Hydrodynamics**

**Matthew Kraft**, Geology

Faculty Mentors: Professor Jill Singer, Earth Sciences and  
Professor Thomas Manley, Middlebury College Department of  
Geology

Due to its environmental degradation including contaminated sediment, the lower 9.2 km of the Buffalo River was designated as a Great Lakes Area of Concern. To better understand the interaction between the downriver and upriver (lake-driven) flow, horizontal and vertical Acoustic Doppler Current Profilers (H-ADCP and V-ADCP, respectively) have been deployed since 2009 in the Buffalo River. The ADCPs used are made by Teledyne RD Instruments and measure water velocities by transmitting sound pulses and recording the returning signals created from sound reflecting off particles in the water column. ADCPs apply the Doppler effect to calculate the magnitude and direction at which the particles move past the instrument. For the Buffalo River, measurements were taken every 15 minutes. The ADCPs stored data in increments (bins) of 1.2 meters and the V-ADCPs in bins of 0.25 meters. Each measurement made is referred to as an ensemble as it contains multiple bins (across the channel (H-ADCP) or through the water column (V-ADCP). At increasing distances, the measurement in the bin becomes unreliable due to interference from the riverbed (H-ADCPs) and waves at the surface (V-ADCPs). Before using ADCP data to understand hydrodynamics of the river, it is necessary to process these data using a computer program available through Teledyne RDI, called WinADCP. However, this program has limitations. When processing data with WinADCP, a baseline depth (V-ADCP) or distance (H-ADCP) for valid measurement must be chosen before measurements can be exported. This can be problematic as a single record may be as long as a year, containing thousands of ensembles, and water level or sedimentation may change appreciably over this period of time. If a baseline depth or distance is chosen that is too low, this can result in valid data being excluded from the output. Also, if a baseline depth or distance is chosen that is too high, invalid measurements may be included in the output. In order to avoid the limitation of WinADCP, a Linux program was written to process each ensemble individually in a record after selecting the bin that contains the last valid measurement. This poster will illustrate how ADCPs measure current direction and magnitude and explain how the Buffalo River ADCP data were processed.

**Presentation Type and Session:** Poster VI

### **Analysis of Detox Pills Composition: Effects on the Human Body**

**Carl Desir** and **Nalyja Wolfe**, CHE 406: Analytical Toxicology  
Faculty Mentor: Professor Alexander Nazarenko, Chemistry

Detoxification is a process aiming to eliminate all the negative effects on our body from the environment, such as industrial chemicals, pesticides, additives in our foods, secondary smoke, pollutants, or heavy metals. Detoxification refers mainly to the removal of toxic substances and cleansing of the kidneys and colon, as these are organs involved in the detoxification of chemicals and toxins from the body. Detoxification is performed in a variety of ways including nutritional supplements, herbal mixtures, oral agents, safe mercury removal, intravenous injections, colonics, etc. The form of detoxification we are especially interested in would be the detox pill. Multiple methods were used such as liquid chromatography, liquid chromatography, UV spectroscopy, infrared spectroscopy and Raman spectroscopy. These methods help us to figure out all active components of detox pills and estimate the effects it can have upon the human body.

**Presentation Type and Session:** Poster VI

### **An Application of the Intermediate and Mean Value Theorems**

**Bethany Beckwith**, MAT 491: Research in Mathematics  
Faculty Mentor: Professor Daniel Cunningham, Mathematics

I will present the proof of a mathematical theorem using tools from Real Analysis. The theorem can be stated as follows: Let  $f$  be a differentiable real valued function with domain  $\mathbb{R}$ , the set of real numbers. I will assume that the derivative,  $f'$  is continuous. Let  $a < b < c$  so that  $f(a) < f(b)$  and  $f(c) < f(b)$ . Then, there is an  $x$  in the closed interval  $[a, c]$ , such that  $f'(x) = 0$ . I will use the principles of the Intermediate Value Theorem and the Mean Value Theorem, along with additional concepts from Calculus and Real Analysis to prove this theorem. The proof will be written formally and will be thoroughly explained during my presentation.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: II

### **An Application of the Mean Value Theorem**

**John Driscoll**, MAT 491: Research in Mathematics  
Faculty Mentor: Professor Daniel Cunningham, Mathematics

In my presentation, we are going to take a look at a theorem that I intend on proving utilizing concepts developed in Real Analysis. We are going to use some basic concepts such as limits and derivatives from Calculus I, while using Real Analysis to develop those concepts further. The theorem that I will prove can be summarized as follows: Suppose that  $f$  is differentiable on the open interval  $(a, b)$  and  $a < x_0 < b$ . Then we have the following: For any  $\epsilon$  greater than zero and  $\delta$  greater than zero there is a  $c$  in  $(a, b)$  so that  $|c - x_0|$



is less than delta and  $|f'(c) - f'(x_0)|$  is less than epsilon. Also, if the limit from  $x$  to  $x_0$  of  $f'(x)$  equals  $L$ , then  $f'(x_0) = L$ . Therefore,  $f'$  is continuous at  $x_0$ . To prove this theorem I will use ideas such as the Mean Value Theorem, whose proof is established in Real Analysis at Buffalo State. I will present a formally written proof that provides all of my work in great detail.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: II

## Application of Sediment Trend Analysis in the Examination of Sediment Transport Dynamics of Missisquoi Bay

**Matthew Kraft**, Geology

Faculty Mentors: Professor Jill Singer, Earth Sciences, Patricia Manley, Middlebury College Department of Geology, and Professor Thomas Manley, Middlebury College Department of Geology

Missisquoi Bay is located between Vermont and Quebec in the northeast sector of the Restricted Arm of Lake Champlain. The average depth of the Bay is slightly less than 3 meters with a surface area covering 77.5 km<sup>2</sup>. The Bay receives water from eastern and western catchment basins, most notably via the Missisquoi, Rock, and Pike Rivers. Circulation within Missisquoi Bay has been altered by the construction of railroad causeways in the late 19th century and highway construction in the early 20th century. Over the past several decades there have also been changes in land-use practices, including the intensification of agriculture, increased animal husbandry, and urbanization. As a consequence of construction and changing land use, loadings of nitrogen and phosphorus to the Bay have increased seasonal oxygen depletion causing eutrophication. Since monitoring began in 1992, Missisquoi Bay has displayed the highest mean total phosphorus concentrations and chlorophyll concentrations in Lake Champlain. Various efforts have taken place to reduce nutrient loading to Missisquoi Bay, but persistent release of phosphorus from bottom sediments will continue to delay for decades the recovery from nutrient diversion. To better understand the causes and timing of eutrophication in Missisquoi Bay, one component of a 5-year integrated VT EPSCoR – RACC program included an examination of N and P loadings and their distribution throughout the Bay. Internal circulation patterns are also being studied. To determine the pattern of net sediment transport and determine sediment behavior (erosion and accretion), a Sediment Trend Analysis (STA) was performed using 369 grab samples collected in the Bay. Grain size distributions for the surface sediment samples were determined using a Malvern Mastersizer 2000 particle size analyzer. Sediment maps showing the proportion of gravel, sand, and mud show that near major river distributaries sand-sized sediment was dominant with muds becoming more common in the interior of the bay farther from sediment sources. Water velocity measurements have also been obtained using Acoustic Doppler Current Profilers (ADCPs). Combining STA results with ADCP data will assist in a better understanding of circulation patterns and the

sediment transport processes occurring within Missisquoi Bay.

**Presentation Type and Session:** Poster VIII

## ArcGIS-Based Accessibility Study to Define Ash Deposit Sampling Locations for Ash Distribution Mapping

**Chelsea Tavormina**, Geology

Faculty Mentors: Professor Bettina Martinez-Hackert, Earth Sciences and Professor Jorge Bajo, Geography and Planning

Researchers dedicate their time in order to create new findings in the scientific world. Most research can be time consuming and expensive, this includes traveling time and cost. Once researchers have traveled to the field unexpected experiences sometimes happen which can bring significant setbacks to the research. To have an already mapped out pathway in the area being researched would be of the upmost benefit. This research consists of creating an Accessibility Map for Santa Ana Volcano in El Salvador. This map distinguishes particular areas of the volcano as ideal places to sample ash deposits. Looking at landownership, groundcover, slope steepness and infrastructure through ArcGIS a better, more thorough understanding of the area is acquired pre field season. Using as base a topographic map, ArcGIS is used to digitize each of these features creating different layers. These layers were overlaid on one another in order to create an accurate depiction on what pathway is the most accessible. This map will be used in the field by helping researchers travel to the safe sites designated by the digitized layers. Traveling to Santa Ana brings a concise overview on how the map relates to the area in real time. With new information the Accessibility Map would change over time and be updated on a consistent basis. This is the first Accessibility Map for Santa Ana Volcano and, when proven successful, will open doors for other volcanoes surrounding Santa Ana and other areas around the world to be assessed for accessibility.

**Presentation Type and Session:** Poster VII

## Automorphic Equivalences: Or, How I Learned to Stop Worrying and Love Group Centers

**Benjamin Briskey**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

I will be proving that if  $G$  is a group and  $Z(G)$  is the center of group  $G$  and  $a, b$  are in  $G$  then two defined automorphisms,  $\phi$  and  $\sigma$ , are equivalent if and only if  $ba^{-1}$  is in  $Z(G)$ . To prove that these two automorphisms are equal, we will show that elements of each automorphism (distinct elements of the parent group) must be in the center of the parent group. We will likewise show that if distinct elements from each automorphism are in the center of the parent group, then the automorphisms are equal. I will be utilizing concepts in Abstract Algebra, including the center of a group, automorphisms, and commutativity in group centers.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: II

## **Bengal Space Launch: Ballooning to 100,000' Above the Earth**

**Edward Bryant** and **Mike Zoubi**, PHY 111: University Physics I  
Faculty Mentors: Professor Daniel MacIsaac, Physics and Professor Stephen Vermette, Geography and Planning

At 6:43 am on May 13th 2013, we launched an instrumented helium weather balloon from G lot on Buffalo State Campus as part of our final class project for PHY111: University Physics I. The crushable, survivable, insulated instrument package included two GPS position tracking instruments – a passive position logger and a reporting SPOT GPS satellite transponder; sensors logging barometric pressure, package internal and external temperature; a GoPro Hero 3 digital video camera; as well as a sonic recovery locator signal, chemical hand warmers and small personal effects. Bengal 1 undertook a roughly two and a half hour flight ascending to 101,239ft altitude, traveling over Grand Island before moving North with the balloon bursting at apex just short of Lake Ontario where recovery took place. At apex Bengal 1 was over 30,000m altitude, the atmospheric pressure was below 1% of ambient surface pressure and exterior temperature was -40F (chemical hand warmers kept the internal batteries and electronics functional at +40F). The digital video camera captured spectacular video of the curvature of the earth from space (the blue-white marble), as well as an exciting descent with a deployed but partially entangled parachute. We will present our flight data including projected computer modeled flight paths and the 3D flight path actually flown, together with a detailed description of the extensive preparations and procedures (including FAA exemptions and airport notifications) required to replicate such a launch. Our short 6m23s video is at <http://tinyurl.com/bengal1balloon>.

**Presentation Type and Session:** Poster IV

## **A Biotelemetric Study of Habitat Use and Behavior of Map Turtles in the Upper Niagara River**

**Brian Haas**, Biology and **Jeremy Henderson**, Biology  
Faculty Mentors: Professor Ed Standora, Biology and Professor Wende Mix, Geography and Planning

Biotelemetry will be used to study habitat use and behavior of northern map turtles (*Graptemys geographica*) in the upper Niagara River. During the last field season three different types of traps were deployed for almost 1500 trap nights. This effort resulted in the capture of four map turtles and 57 other non-target turtles representing three other species. This season we will use only basking traps because of their species specific effectiveness. Radio and sonic transmitters and temperature/depth data loggers will be affixed to each map turtle. Red-eared slider turtles (*Trachemys scripta elegans*) that are sympatric with our target species will be outfitted similarly. Data will be used to analyze potential competition between the two species. Turtles will be tracked using GPS, and GIS software will be used to generate home ranges. Preliminary data collected

from last year indicate that both species spend much of the summer months in areas with no natural shoreline and limited boat traffic. Preferred sites have deep slowly moving water with an abundance of floating vegetation and a high density of mussels. In the fall, female map turtles moved long distances, up to 20 km downstream to multiple locations for brumation. Turtles have been monitored over the winter months and will be actively tracked when they resume movements this spring. Sonar mapping and underwater video will be used to precisely define underwater features. Our goal is to define key habitat requirements for basking, feeding, nesting, and brumating. Findings will be incorporated into conservation and management efforts, with a focus on habitat enhancement and restoration.

**Presentation Type and Session:** Poster IV

## **Bounded Derivatives and Uniform Continuity**

**Molly Reedy**, MAT 491: Research in Mathematics  
Faculty Mentor: Professor Daniel Cunningham, Mathematics

A theorem concerning uniform continuity will be presented. I will show that a function  $f$  whose derivative is bounded on the open interval  $(a,b)$  is uniformly continuous on this interval. A function  $f$  is uniformly continuous if for every  $\epsilon > 0$  there will exist a  $\delta > 0$  such that for any two elements  $x$  and  $c$ , in the interval, if  $|x-c| < \delta$  then  $|f(x)-f(c)| < \epsilon$ . Using the Mean Value Theorem and other topics covered in Real Analysis at Buffalo State College, a formal proof will be given. After the proof, I will show that the converse fails to hold; namely, I will identify a function  $f$  which is differentiable and uniformly continuous on the interval  $(-1,1)$  and yet the derivative  $f'$  is unbounded on this interval.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: II

## **Bridging the Gap: Role of Extracellular Loop Cysteine Residues in Gap Junctions**

**Brandon Kelly**, Biotechnology and **Dave Carstensen**, Biotechnology  
Faculty Mentors: Professor I. Martha Skerrett, Biology and Professor Derek Beahm, Biology

Gap junctions allow direct transport of molecules between cells and perform a variety of functions dependent on tissue type and developmental stage. These include metabolic coupling, transmission of electrical signals, and chemical communication. In humans, 20 different connexin proteins, with specific and overlapping patterns of expression, form gap junctions with a wide range of properties and functions. Connexin50 (Cx50) is expressed in the lens of the eye, and mutations in the gene encoding Cx50 cause a congenital form of cataract. Cataracts are the leading cause of blindness in the United States. While it is known that Cx50 is essential for normal lens function, its specific role is poorly understood and complicated by the observation that the protein forms transmembrane channels (hemichannels) as well as intercellular gap junction channels. The



contributions of hemichannels and intact gap junction channels have not been separated. The goal of this research is to create a Cx50 molecule that will function as a hemichannel but not a gap junction channel. It is well known that cysteine residues in the extracellular loops are essential for the formation of gap junction channels, and are recognized as a hallmark for these domains. This knowledge directs our research focus towards the replacement of these cysteine residues with amino acids that hold similar properties. The modified connexins will be studied using the *Xenopus* oocyte expression system, and in future projects to differentiate the role of transmembrane and intercellular channels.

**Presentation Type and Session:** Poster V

### Cell Tower Placement and the Four Color Theorem

**Kayla Henry**, AMT 495: Applied Mathematics

Faculty Mentor: Professor Hongliang Xu, Mathematics

The goal of the research is to find a real life application of the four-color theorem and look into how the theorem was proved. The four color theorem states that when coloring a map, only four colors are needed to color the map such that no two touching regions are the same color. The theory was proved using graph theory and was also proved by computer. It was the first computer proved mathematical proof. The theorem is not only useful to cartographers, but also to cell towers companies for placement. If they view cell towers or transmitters as colors, they can place each cell such that no two cells near each other have the same frequency and therefore guarantee no intervention. The goal is to minimize costs while still covering enough area with each tower.

**Presentation Type and Session:** Oral — Sciences, Mathematics, and Health: II

### Change in Antibiotic Resistance and Plasmid Content in *Escherichia coli* in a Waste Water Treatment Facility Before and After Chlorination

**Nicole Ashman**, BIO 498: Honors Research

Faculty Mentors: Professor Gary Pettibone, Biology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Antibiotics may reach the environment in a variety of ways including through discharge from wastewater treatment facilities. Wastewater Treatment Plants (WWTP) receive antibiotics and antibiotic-resistant bacteria in their influent from various sources including hospitals and through home disposal into the sewer system. Chlorination of WWTP final discharge is effective in eliminating most of these bacteria. However, antibiotic-resistant enteric bacteria, including *Escherichia coli*, may survive the chlorination process. Antibiotic resistance may occur because of resistance genes that are located on extra chromosomal DNA, especially plasmids. Little research has been conducted to investigate

whether *E. coli* that survive chlorination carry a lower plasmid load than bacteria isolated immediately before chlorination, and how plasmid carriage may affect the survival of antibiotic-resistant bacteria. In this study, approximately 70 *Escherichia coli* strains which had been collected from the Bird Island WWTP before chlorination and approximately 70 strains collected after chlorination were evaluated for antibiotic resistance and whether or not they contained plasmid DNA. These isolates were confirmed through biochemical testing as *E. coli* after which they were tested by the disk diffusion method for resistance to the antibiotics ampicillin and tetracycline. The isolates were subsequently evaluated for their plasmid content using agarose gel electrophoresis. We found strains collected before and after chlorination that were resistant to either one or both of the test antibiotics. Plasmids were present in many of the isolates regardless of their collection site. The size and number of plasmids in these bacteria will be compared to assess the impact of chlorination on plasmid carriage.

**Presentation Type and Session:** Poster V

### Characteristics and Behavior of a Two-Hour Oscillation in the Buffalo River

**Ashley Perez**, Earth Sciences

Faculty Mentor: Professor Jude Sabato, Earth Sciences

The Buffalo River discharges into Lake Erie near the upper end of the Niagara River. The lower 9.2 km of the river has been designated as a Great Lakes Area of Concern due to environmental problems associated with poor water quality, degraded riparian and river habitat, and contaminated sediments. The U.S. Army Corps of Engineers maintains a navigational channel at a depth of 6.7 m below mean lake level by periodic dredging. In 2011, extensive dredging took place within the upper portions of the river to remove some of the most contaminated sediments. This dredging resulted in both widening and deepening of the channel. The Buffalo River's gradient is low and current velocities generally are  $< 10$  cm/sec. The low flow conditions coupled with the orientation of the river allows Lake Erie waters to enter the Buffalo River reversing its flow. The largest episodic lake-driven flow reversals were found during strong westerly wind events that setup an elevated water level at the eastern (Buffalo) end of the lake. Lower amplitude flow reversals could also be associated with subsequent Lake Erie surface seiches or other phenomena. They also occur during times when no seiche conditions are present. The interaction between river flow and reverse (lake-driven) flow was investigated using Acoustic Doppler Current Profilers (ADCPs), temperature sensors, and water level recorders deployed for the past five years at various locations in the lower 9 km of the river. The collected data record the periodic reversals associated with Lake Erie seiches, but also reveal an oscillation within the river. This 'river seiche' has a period of  $\sim 2$  hours and occurs continuously, persisting even during high flow events and during times of strong lake-driven flow reversals.

To better understand the characteristics and behavior of this 'river oscillation', time-series plots and Fourier power spectra were produced from the ADCP data. These data show that the magnitude of the oscillation is on the order of 5-10 cm/s. There are three coherent spectral peaks with significant power above the noise. These peaks have periods centered on 1.8, 2.0 and 2.2 hours. Our preliminary conjecture is that the oscillation is similar to a forced resonance in a closed basin.

**Presentation Type and Session:** Poster IV

## Characterization of Failing Pens

**James Martin**, HON 400: Muriel A. Howard Honors Colloquium  
Faculty Mentors: Professor Douglas Ridolfi, Chemistry and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Forgery related crimes are a major problem in this country as it accounts for about five percent of all property crimes. The document examination unit is given the task to decipher these questionable documents and determine if more than one pen was used in the writing of these documents. When a pen is near its failing point it appears chemically different than when it was first used, thus complicating a document examiners ability to perform their job with great efficiency. Through this research the life cycles of five pens (four black and one blue) was outlined and analyzed from its beginning to end in twenty percent increments of total use. The results showed that during the pens second half life cycle (fifty percent use to the end), those pens that contained dye had a gradual decrease in its content. Further exploration on this finding can perhaps bring us one step closer to determining how long an ink sample was on a page.

**Presentation Type and Session:** Poster VIII

## Climate Change Prompts Upward Migration of Ant Hybrid Zone

**Victoria DeStefano**, Biology  
Faculty Mentor: Professor Robert Warren, Biology

Climate change imparts substantial impacts on species distributions. Many species already have responded to the warming of the past century by moving upward and poleward in elevation. Here I examine whether the disappearance of cold-adapted *Aphaenogaster picea* ants with the upward (elevation) shift in warm-adapted *A. rudis* ants is consistent with individual ant replacement through competition or gene replacement through hybridization. I quantify morphological traits (e.g., coloring, head width) of ant sampled along elevation gradients in the Southern Appalachian Mountains of north Georgia, USA. I find that the morphology of the highest (*A. picea*) and lowest (*A. rudis*) ants is discrete, indicating distinct species; however, at middle elevations where the species distributions overlap, I find individuals that either blur characteristics (particularly coloring) or exhibit morphology

altogether different than the 'pure' species. These results indicate that as *A. rudis* colonies move upward in elevation they interbreed and eventually replace *A. picea* colonies. I demonstrate hybridization as an important mechanism of species loss with climate change.

**Presentation Type and Session:** Poster IV

## Codon Bias in Ginger Plants: Why Are Ginger Cysteine Proteases Different From Other Plant Proteases?

**Rasheed Bailey**, BIO 303: Genetics  
Faculty Mentor: Professor Amy McMillan, Biology

Ginger root, *Zingiber officinale*, is used in a variety of ways. It has been used in Asian foods, as a medicine, and as a spice for cookies and other baked goods. Ginger has two cysteine proteases in the papain family that have been isolated from its rhizome. Cysteine proteases are enzymes that degrade proteins. For example, meat proteins are broken down by these proteases, making ginger root a good meat tenderizer. One of the ginger cysteine proteases is unique in that it has an unusual preference for cleaving proteins with proline at the P2 position. The normal papain cysteine proteases cleave polypeptides with an aromatic amino acid at that position such as phenylalanine and tyrosine. Research on codon bias may explain this unusual pattern. Codon bias is the preference of one codon over others coding for the same amino acid. I investigated the codon use in the proline amino acid in published genes, including cysteine proteases, from *Zingiber officinale* to determine if there is codon bias. The ginger genes investigate showed significant bias towards the codon CCC and CCT in proline. Codon bias in other plants was also investigated and will be reported on. Bias in codon usage may have important evolutionary consequences.

**Presentation Type and Session:** Poster IV

## Computer Simulation Survey: A Hands-Off Approach to Solving Life's Problems

**Andrew Henning**, AMT 495: Applied Mathematics  
Faculty Mentor: Professor Joaquin Carbonara, Mathematics

Computers create a virtual world by simulating the real one. Within this artificial environment, researchers across various fields can test hypotheses without the expense of time and money normally required to organize experiments. We will study and analyze the world of mathematical simulations. Our examples include the use of cellular automata to simulate the spread of invasive plant species *Spartina alterniflora* and other discrete dynamical systems like Conway's Game of Life; one-compartment models and differential equation computational data to simulate drug concentration in a person's bloodstream; linear congruential generators (LCGs) and other techniques to simulate random number generation; Markov chain matrix models to simulate weather forecasting and other stochastic processes; and the use of physics and differential equations to simulate motion (e.g. Hooke's Law to simulate spring motion).

Our study will analyze, summarize, and classify these simulation techniques (discrete/continuous, deterministic/stochastic, whether or not it involves user interaction) and discuss each method's benefits and drawbacks. We will then use what we have learned to investigate, and possibly improve, the precision and usefulness of one simulation. As a result of this study, we hope to provide a better understanding of the relation between mathematics, computer simulation, and real life. This will lead to advances in the field.

**Presentation Type and Session:** Oral — Sciences, Mathematics, and Health: II

### A Curious Integral Equation

**Emily Cloud**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

In my presentation, I will prove a theorem in Real Analysis. Given a continuous function  $f$  in the real numbered system, I will establish an equality between two distinct definite integrals both involving the function  $f$ . The proof applies techniques used in real analysis. Specifically, I will utilize the fundamental theorem of calculus and the definition of continuity. Moreover, I will be using the fact that if two functions have the same derivative, then the two functions differ by a constant. In this case, the constant will be zero. I will present a formally written and detailed proof that shows all my work and research.

**Presentation Type and Session:** Oral — Sciences, Mathematics, and Health: II

### A Curious Limit Equation

**Joseph Will**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

This presentation will apply what I have learned in Real Analysis. I intend to prove that if a function is differentiable, and the limit, as  $x$  goes to infinity, of  $f'(x)$  equals zero, then the limit, as  $x$  goes to infinity, of  $[f(x+1) - f(x)]$  will also equal zero. I will be using techniques of Calculus, as well as Real Analysis, that I have learned in my academic career at SUNY Buffalo State, to tackle the problem at hand. The Mean Value Theorem is a critical tool in Real Analysis. I will start by using the Mean Value Theorem to show that any sequence of the form  $< f[a_n + 1] - f(a_n) >$  converges to 0 when  $< a_n >$  is a sequence that converges to infinity. I will then explain why this implies that the limit, as  $x$  goes to infinity, of  $[f(x+1) - f(x)]$  equals zero. I will conclude the talk by presenting a corollary to the proof the theorem.

**Presentation Type and Session:** Oral — Sciences, Mathematics, and Health: II

### Daphnia's Nutrient Allocation in Soft Water-High Food Conditions

**Hulgrid Gourgue**, Biology

Faculty Mentor: Professor Alicia Perez-Fuentetaja, Biology

The cladoceran *Daphnia* is a freshwater crustacean that inhabits

lakes and ponds. *Daphnia* populations are declining in boreal lakes as a result of logging and acid rain. Low water pH levels and calcium loss from tree removal have resulted in poor conditions in these lakes for many cladocerans, which are an important food for fish. Researchers have linked calcium in *Daphnia* to their ability to reproduce, grow, contract their muscles, development of soft tissues, etc. Because *Daphnia* take the calcium from the water, not the food, we investigated the relationship between food quality and limiting calcium in these animals. We found that food quality played an important role in *Daphnia*'s reproduction, and could mitigate the effects of low calcium in the lakes. Conversely, when calcium levels were adequate, *Daphnia* could survive on low quality food. In conclusion, boreal lakes with modest levels of calcium may be able to support *Daphnia* populations if they also support seasonally grazable algal communities.

**Presentation Type and Session:** Poster IV

### Development of an RT-qPCR Assay for ER Chaperone GRP170 Gene Expression in *Caenorhabditis elegans*

**Anthony D'Auria**, Biology

Faculty Mentor: Professor Gregory Wadsworth, Biology

In order for a protein to become functional, its polypeptide chain must be folded into its proper three-dimensional state. Most proteins require a special class of proteins called chaperones to facilitate proper folding. Chaperones are particularly important during states of cell stress, especially stresses that result in misfolding or unfolding of polypeptide chains. A well-conserved response to this type of stress is the unfolded protein response (UPR) where cells inhibit general protein synthesis while increasing the production of chaperones. An important class of chaperones is the glucose-regulated proteins (GRPs) located in the endoplasmic reticulum. The ER is a major site of protein synthesis and the largest of the ER chaperones is GRP170. Interestingly, unlike other eukaryotes, the nematode *Caenorhabditis elegans* possesses two genes that encode distinct forms of the protein, namely GRP170a and GRP170b. Our lab designed a protocol to evaluate expression of *grp170a* and *grp170b* genes in response to the cell stress. The protocol was based on a technique called Reverse Transcriptase — Quantitative Polymerase Chain Reaction (RT-qPCR). It was designed to specifically measure mRNA levels for each gene under non-stress and stress conditions. To induce protein folding stress and UPR, we exposed adult N2 strain nematodes to tunicamycin, a fungal toxin that inhibits ER protein folding. An initial analysis showed the two genes respond differently to cell stress; *grp170b* was induced by ER stress, while *grp170a* was less affected.

**Presentation Type and Session:** Poster V



## **Differentiable Functions Whose Zero Sets Have No Accumulation Points**

**Michael Ciraolo**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

In this presentation I will be using techniques and ideas introduced throughout real analysis. Recall that if a function  $f$  is differentiable, then  $f$  is continuous and the derivative exists at each point in its domain. The theorem that will be established can be summarized as follows: Let  $f$  be a differentiable function with domain  $\mathbb{R}$ , the set of real numbers. If  $f$  and its derivative  $f'$  have no common roots, then the set  $\{x \in \mathbb{R} : f(x) = 0\}$  has no accumulation points. For this theorem I will use proof by contradiction. I will also apply the Mean Value Theorem, an important result that is proven in MAT 417 (Real Analysis) at Buffalo State.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: II

## **Do Quagga Mussels (*Dreissena rostriformis bugensis*) Found in Shallow and Deep Environments Differ in Their Wet to Dry Weight Ratios?**

**Keith Pawlowski**, Great Lakes Ecosystem Science

Faculty Mentors: Professor Lyubov Burlakova, Great Lakes Center and Professors Alexander Karatayev, Great Lakes Center

As ecosystem engineers, *Dreissena* mussels have changed the benthic structure of the Great Lakes, increasing benthic biomass. When estimating mussel biomass in a sample, dry weight measurements are more accurate than wet weight measurements, but are more time consuming to process. Often, when working with large samples, researchers first obtain the wet weight and then use a mathematical conversion factor to calculate the dry weight. Quagga mussels exhibit different morphological features throughout their range and may subsequently have differing wet to dry weight ratios. This may influence inaccuracies when calculating mussel dry weight in samples. The goal of our study is to determine if quagga mussels have different wet to dry weight ratios at different depths in the Great Lakes. We will compare wet and dry weight ratios of quagga mussels found in shallow ( $<20$  m) and deep ( $>40$  m) sample sites. Samples were collected in 2012 in Lake Erie and Lake Michigan using a Ponar grab aboard the R/V Lake Guardian within the EPA-funded project “Great Lakes Long-Term Biological Monitoring”.

**Presentation Type and Session:** Poster V

## **Do You Know Your Energy Drink?**

**Owen Ruppert** and **Cody Lippincott**, CHE 406: Analytical Toxicology

Faculty Mentor: Professor Alexander Nazarenko, Chemistry

In this research project, we researched several energy drinks, including Red Bull and 5 Hour Energy, and their contents. The goal was to examine the compositions of the energy drinks. The drink samples were investigated by broad range of analytical methods

that included pH measurements, titrations, UV-vis, Raman, and IR spectroscopy methods. In some cases derivatives were necessary to prepare the ingredients for examination. Various chromatography methods (GC-MS, HPLC with UV and MS detection) were applied for quantitative assay. The main ingredients we examined quantitatively were taurine, caffeine, vitamins (B5, B6, B12), and the sugars these energy drinks contain. We compared the concentrations of each of these ingredients and discussed the effects caused by the different concentrations. This research was done for Analytical Toxicology CHE 406.

**Presentation Type and Session:** Poster VII

## **Does Second-Home Building with Canopy Intact Mitigate the Deleterious Effects of Forest Fragmentation?**

**Michael Olejniczak**, Biology

Faculty Mentor: Professor Robert Warren, Biology

Fragmentation disrupts healthy forests by degrading habitat and by disrupting migration and dispersal. As a result, forest fragmentation generally causes decreases in biodiversity. Most fragmentation research focuses on anthropogenic disturbances such as land clearing and road building, but the most common current form of fragmentation is exurbanization. Exurban landscapes refer to secondary homes in an area left more ‘natural’ than a suburb. That is, homes and structures are built across a landscape with large portions of forest remaining intact. There is some suggestion that healthy ecosystem mechanics remain intact within forested exurban sites, and so we ask if exurban landscapes mitigate the effects of fragmentation. As *Aphaenogaster* ants are the most common and abundant arthropod in eastern deciduous forests, as well as keystone seed dispersers for woodland plants, we examine *Aphaenogaster* presence, abundance and colony health in intact and exurbanized forests in the southern Appalachian Mountain region. *Aphaenogaster* ant colonies were collected in artificial nests and colony demographics were measured. Whole-colony health was analyzed by measuring ant lipid content.

**Presentation Type and Session:** Poster VI

## **The Effect of Gene Flow on the Rates of Evolution of *Drosophila***

**Lauren Grunzweig**, Biology

Faculty Mentor: Professor Robert Warren, Biology

Invasive species are known to disrupt native environments and outcompete indigenous species because they are able to adapt quickly and produce more favorable traits than native organisms. A possibility as to why this occurs is that invasive species lack the presence of maladaptive gene flow from their native populations. Using two fly strains, I am investigating how differences in gene flow impact rapid evolution in novel and native habitats and the effect it has on competition between species. Using incubators, flies were placed in three different temperatures. With no competition,



fitness of individual strains greatly increased at higher temperatures and decreased at lower temperatures. Two fly strains with different thermal tolerances will be placed in a culture with limited food supply. Gene flow from a population raised at a different temperature will be introduced for one strain only and the fitness of each fly strain will be determined. I expect the strain that has continuous gene flow to adapt less rapidly than the strain that has no gene flow. This project was designed to emulate an exotic species invasion in a habitat where continued introduction of new genes from a different temperature population should limit the evolution of advantageous genes in novel temperatures.

**Presentation Type and Session:** Poster VII

### Examining Integrals of Continuous Functions

**James Burns**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

This presentation will focus on establishing a specific result in Real Analysis concerning the integral of a continuous function. I will prove that under certain conditions that a specific uniqueness property holds with respect to integration. Namely, let  $a < b$  be real numbers and let  $f$  be a continuous function from  $[a,b]$  to the set of all real numbers. If for every element  $x$  in the interval  $[a,b]$ , the integral of  $f$  from  $a$  to  $x$  equals the integral of  $f$  from  $x$  to  $b$ , then the function evaluated at  $x$  is equal to 0 for every element  $x$  in the interval  $[a,b]$ . In other words, I will be proving that the only way for this integral equation to hold true is if the function is always equal to 0. A key tool that will be used in the proof is the Fundamental Theorem of Calculus. In addition, I will use the knowledge gained from previous mathematics courses, which I have taken during my studies here at Buffalo State College, to clearly show that this theorem holds true.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: II

### Expression of the Chaperones GRP170a and GRP170b During the Unfolded Protein Response of *Caenorhabditis elegans*

**Antonio Louis Rockwell**, Biology

Faculty Mentor: Professor Gregory Wadsworth, Biology

The Unfolded Protein Response (UPR) is a homeostatic response of eukaryotic cells triggered by the accumulation of misfolded proteins in the ER. A major component of UPR is the induction of a suite of ER molecular chaperones. Chaperones are proteins that assist other proteins in refolding. GRP170 is the largest of the ER chaperones. The nematode *Caenorhabditis elegans* has two genes encoding GRP170, grp170a and grp170b. Previous studies using microarray chips indicate that grp170b is highly induced by UPR while grp170a is not. For my thesis I propose to use a qPCR assay to further characterize expression of these two loci. First, qPCR will

allow me to quantify the degree to which grp170a and grp170b genes are induced by UPR and compare their induction to other ER chaperones. Second, I will explore which UPR signal transduction pathway is most responsible for the induction of grp170 in *C. elegans* by measuring the expression of these loci in worms with known genetic deficiencies for each of the UPR signal transduction pathways. Third, I will characterize the expression of each grp170 locus in a strain of *C. elegans* deficient for the other locus. This will allow me to determine whether the nematode compensates for loss of one grp170 locus by inducing expression of the remaining locus. Finally, I will explore whether any compensating expression observed is due to UPR by studying compensation in strains deficient for UPR.

**Presentation Type and Session:** Poster VI

### Global Population and Accelerated Climate Change

**Rebecca Reczek**, AMT 495: Applied Mathematics

Faculty Mentors: Professor Bruce Sun, Mathematics and Professor Saziye Bayram, Mathematics

Prior to the Industrial Revolution, the primary causes of climate change were natural events such as changes in solar energy, volcanic eruptions, and the natural fluctuations of greenhouse gases. Climate dynamics can no longer be explained by natural causes alone. Over the last century our population and global temperature have been rapidly increasing in tandem. Since the mid-twentieth century, most warming has been caused by human activities. Humanity's increase in population has led to an increase in greenhouse gas emissions, which trap heat in our atmosphere instead of releasing it into space. These gases have always been present in our atmosphere but have substantially increased due to human activities. This research will investigate the relationship between population growth and climate change by using linear regression and stochastic modeling to analyze data and predict population and climate in the future.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: II

### Half a Channel Makes a Whole: Investigating the Role of Hemichannels in Lens Physiology

**John Lang**, Biology

Faculty Mentor: Professor Derek Beahm, Biology

Intercellular gap junction channels play a critical role in maintaining vertebrate lens transparency by providing a pathway for ion, solute, and water flow through the tissue. Disruption of these channels results in cataract formation. Gap junctions between lens fiber cells are composed of two different connexin proteins, Cx46 and Cx50. These connexins are unique in their ability to form functional hemichannels in the nonjunctional membrane of single cells. We are characterizing structure/function properties of Cx50 hemichannels to help identify their potential roles in normal lens physiology. Unlike

Cx46, Cx50 forms hemichannels that are very sensitive to external pH in the same pH range (pH 6.1-7.4) known to exist in lens tissue. This study focuses on identifying the structural determinants of external pH sensitivity, and we are targeting histidine residues first, due to their pH sensitivity. We used site-directed mutagenesis to alter externally accessible histidine residues that are unique to Cx50. Six different mutations have been made at three different histidine sites. The effects of these mutations are currently being assayed using a *Xenopus* oocyte expression system. A Two-Electrode-Voltage-Clamp technique is employed to measure current flow through the mutant hemichannels at different external pH conditions. Preliminary findings will be presented.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### **Health Risk: Heavy Metals in Water in Organic versus Non-Organic Farm Runoff**

**Meghan Hospedales**, GES 460: Environmental Field Methods and Analysis

Faculty Mentor: Professor Elisa Bergslien, Earth Sciences

This project is to test and compare water pollution in stream samples to compare the level of contaminants in the water near an organic farm versus a non-organic farm. The first sample area is a lake near Delaware Park. Delaware Lake is located less than 2 miles from a non-organic farm called Michigan Riley Farm. The second sample location is Martin Luther King Jr. Park Lake located near Wilson Street Urban Farm. Wilson Street Urban Farm is an organic chemical-free farm. To test this samples will be taken from different sections of each lake. The samples will be testing for heavy metals that may have entered the water from the farm soils. N These metals include Mercury, Arsenic, and Lead. Nutrient levels will also be tested. The data collection will be managed using Microsoft Access or Excel. Judging from our understanding, we assume runoff from the non-organic farm will contain more pollutants than runoff from the organic farm.

**Presentation Type and Session:** Poster VIII

### **Hormone Replacement Therapy and Postmenopausal Breast Cancer**

**Kayla Morrell**, AMT 495: Applied Mathematics

Faculty Mentor: Professor Chaitali Ghosh, Mathematics

Breast cancer is the second leading cause of cancer related deaths in women, exceeded only by lung cancer. About 1 in 8 U.S. women will develop invasive breast cancer over the course of her lifetime. In 2013, an estimated 232,340 new cases of invasive breast cancer were expected to be diagnosed in women in the U.S., along with 64,640 new cases of non-invasive (in situ) breast cancer. Hormone Replacement Therapy (HRT) includes the use of estrogen alone or in combination with progesterone in postmenopausal women to alleviate conditions like osteoporosis, type 2 diabetes,

certain cardiovascular pathologies and colorectal cancer. However, issues regarding use of HRT are unresolved and require ongoing consideration. This project investigates the relationship between HRT use and breast cancer incidence in a retrospective cohort study of 1200 postmenopausal women between the ages of 43 and 70 years identified from the Nurses Health study. Other risk factors for breast cancer such as ages at menarche, first birth, and menopause, benign breast disease, family history of breast cancer, BMI, smoking status and alcohol consumption are also considered using standard statistical analysis.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### **How Does the Rate of Unemployment and Active Police Enforcement Affect the Crime Rates in Buffalo, NY?**

**Lonisa Sledge**, AMT 495: Applied Mathematics

Faculty Mentors: Professor Saziye Bayrum, Mathematics and Professor Bruce Sun, Mathematics

In 2012, Buffalo, NY had the 11th highest violent crime rates in the United States. In 2012, Buffalo, NY had the 11th highest violent crime rates in the United States. Why are these crime rates so high? Although, crime rates in the past decade have decreased, what could contribute to the rise and fall of these crime rates? Unemployment rates and the amount of police enforcement present are factors that have been looked at that might have an influence on crime rates. So my question is: do these factors also affect the crime rates in Buffalo? My study will look at crime rates in Buffalo between the years of 2002 to 2012. My data that is provided by the Division of Criminal Justice services, the Bureau of Labor Statistics, and the Buffalo Police department will be analyzed using the spreadsheet software, Excel 2013 as well as mathematical computing software, Mathematica. In an attempt to understand and explain crime rates in our region, I will use multiple linear regression models with unemployment rates and quantity of police enforcement as our statistical variables, and share my preliminary results during my presentation.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: II

### **Impacts of Salinization on Soil Microbial Respiration**

**Raven Baxter-Christian** and **Rebecca Jo Johnson**, BIO 495: Soil Microbial Respiration

Faculty Mentor: Professor Daniel Potts, Biology

Soil salinization, the accumulation of salts in soils, is a widespread phenomenon associated with irrigated agriculture. The negative impact of salinization on agricultural productivity is widely documented; however its effect of soil microbial respiration (SMR) is less known. We addressed the question: Does salinization's effect on SMR depend on soil type? By influencing SMR, salinization may

in turn affect the carbon balance of agroecosystems. We collected soils from the desert and rainforest exhibits at the Buffalo and Erie County Botanical Gardens. In the laboratory, we measured soil specific changes in soil water potential ( $\Psi_s$ ) and SMR in response to additions of  $\text{CaCl}_2$  solutions of increasing concentration. Predictably, in both soil types,  $\Psi_s$  became increasingly negative as soil  $\text{CaCl}_2$  concentrations increased. Desert SMR was insensitive to changes in  $\Psi_s$ , whereas rainforest SMR had a strong negative response to declining  $\Psi_s$ . Our results suggest that the carbon cycling consequences of salinization may be biome dependent. The increased sensitivity of rainforest SMR to salinization and its contribution to regional carbon budgets may be of greater concern as irrigated agriculture in equatorial regions becomes more prevalent.

**Presentation Type and Session:** Poster VIII

### **An Investigation of Causes and Characteristics of Water Elevation Changes in the Buffalo River, Buffalo NY**

**Kari Clayton**, Earth Sciences

Faculty Mentor: Professor Jill Singer, Earth Sciences

The Buffalo River, an urbanized watershed, discharges into the east end of Lake Erie. The lower  $\sim 9\text{km}$  of the river is a navigation channel with a depth of  $\sim 9\text{m}$ . Due to the orientation of Lake Erie, prevailing winds often pile water up producing seiches. The deepening of the Buffalo River through dredging, combined with its low gradient and generally low flows, makes the river susceptible to rapid rises in lake elevation due to lake seiches. To understand the effects of lake seiches, water level recorders measuring the variance and change in water elevation were placed at the mouth (0 km), mid-river (4.5 km), and up-river (9 km). These data were collected at 5-minute intervals for the period 2010 - 2012. This record allows the behavior (frequency and magnitude) of water level changes in the river to be investigated for three flow conditions: 1) high flow events characterized by elevated water levels propagating downriver; 2) seiche events characterized by elevated water levels propagating upriver; and 3) periods marked by low flow/no lake seiche. During these times, the river's own  $\sim 2$  hour oscillation is observed.

**Presentation Type and Session:** Poster VI

### **Investigating the Essential Oils in Shampoo**

**Colleen Martin, Laura Stone, and Margo Weber**, CHE 406: Analytical Toxicology

Faculty Mentor: Professor Alexander Nazerenko, Chemistry

In this research project, we analyzed various samples of Bath and Body Works shampoo. Our target components were the active essential oils in the shampoo composition. These essential oils contain numerous natural organic compounds such as terpenes, alcohols, esters, aldehydes, ketones, and phenols. With further studying of the compounds, we quantitatively compared our findings with that of the FDA allowances of essential oils. The extraction

of the oils from the shampoo was done by various methods. Several samples were tested to produce accurate results. Possible physiological and toxicological effects of various essential oil components will be discussed. This research project was done for Analytical Toxicology (CHE 406).

**Presentation Type and Session:** Poster VII

### **Kayaking in Chemicals?**

**Samantha Stone, Kelly Whelan, and Alex Crumlish**, GES 460: Environmental Field Methods and Analysis

Faculty Mentor: Professor Elisa Bergslien, Earth Sciences

The Buffalo River has a long industrial past. This has resulted in the accumulation of metals, PCBs, chlordane, ammonia, and PAHs over the past century. Despite the remediation efforts we are concerned about the premature uses of the river and land for recreational purposes. With a watershed that includes 45 inactive hazardous waste sites, we don't think dredging has improved the river enough for recreational use. We want to take soil and water samples in the area before the dredging region, inside the region, and after where the new kayak launch site is located. We believe we will see increased levels of contaminants in areas where the sediments have been disturbed. This should also affect areas downstream from the dredging region. We will then compare our data from inside and downstream the dredging area to the water and soil samples upstream. We think there will be a trend of higher levels of contamination downstream, making the safety of the public questionable. We will also compare our findings to data collected on the river before remediation began to see if the conditions have improved. With the majority of the hazardous waste sites still present we don't think there will be much, if any improvement. The purpose of this experiment is to see if contamination levels are above exposure limits and if limiting the amount of time a person uses this site is necessary.

**Presentation Type and Session:** Poster VII

### **Managing Blood Inventory: A Study of Forecasting Models**

**Amy Hoffman**, AMT 495: Applied Mathematics

Faculty Mentors: Professor Saziye Bayram, Mathematics and Professor Lorena Mathien, Mathematics

Managing blood inventory is a difficult process due to its variability in supply and demand. One of the challenges is to make sure that there is enough blood supply when it's needed. However, due to the fact that the blood supply is a perishable item and has a short shelf life, we have to be careful not to order too much and dispose the unused ones. Keeping all these in mind, along with the fact that there are different types of costs associated with ordering inventory, this study will focus on creating various forecasting models to determine which method is most valuable in the process of ordering blood units. The data being analyzed includes monthly

blood demand from hospitals throughout the US. We will utilize descriptive statistics on the data that ranges from January 2010 through December 2012. We will consider and study all blood types in six different models. Within certain models we will explore different customer service levels to discover if there is an optimal level that will closely match supply with demand while keeping costs at a minimum level.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

## **Mathematical Analysis of Heartbeat Oscillations**

**Antonio Galbier** and **Steven Tarasek**, AMT 495: Applied Mathematics

Faculty Mentor: Professor Saziye Bayram, Mathematics

Our research focuses around heart activity during time periods when the parasympathetic (rest and digest) and sympathetic systems (fight or flight activity) govern cardiovascular stimulation. We are interested in finding the characteristics of transition between these two governing systems. Our research encompasses graphical, statistical, and mathematical analysis of blood pressure data allowing us to understand and breakdown heart beat oscillations. In our study, we analyze a total of 24 hours of data, with data gathered at a frequency of 100 Hz (100 data points per second) using computational software, MATLAB and Kubios HRV as well as mathematical transformations such as fast Fourier and wavelet transforms.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

## **Maximal Cliques in Intersection Graphs of Quasi-Homothetic Trapezoids**

**Joshua Terhaar**, Mathematics

Faculty Mentors: Professor Joaquin Carbonara, Mathematics and Professor Valentin Brimkov, Mathematics

This work extends previous results related to max-tolerance, semi-square, and convex polygon intersection graphs, which have been found relevant to certain problems of computational biology. More specifically, I consider the max-clique problem on intersection graphs of quasi-homothetic trapezoids. I show that the number of maximal cliques in such graphs is  $O(n^3)$ , which improves the  $O(n^4)$  bound known previously. Next, I present an in-place algorithm for finding all maximal cliques on quasihomothetic trapezoid intersection graphs. I also report experimental results of a computer implementation of our algorithm on randomly generated sets of polygons of the considered type. The experiments confirm the expected cubic regression for the number of maximal cliques in semi-square graphs, which has been proved only for an artificially constructed class of instances. Other experiments show that the well-known Lovasz theta function approximates very well the clique

number for the considered classes of graphs. Finally, I discuss some open questions and future work.

**Presentation Type and Session:** Poster IV

## **The Maximum of Two Continuous Functions is Continuous**

**Robert Buyea**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

In my presentation, I will prove a theorem in mathematics using concepts from real analysis. The theorem that I will prove can be summarized as follows: Let  $f: \mathbb{R} \rightarrow \mathbb{R}$  and  $g: \mathbb{R} \rightarrow \mathbb{R}$  be continuous functions and let  $h: \mathbb{R} \rightarrow \mathbb{R}$  be the function defined by  $h(x) = \max \{f(x), g(x)\}$ . Then  $h$  is continuous. To prove this theorem, I will use ideas and concepts of continuity, functions, inequalities, and absolute values. These ideas and concepts are used across the math curriculum here at Buffalo State. I will present a formally composed proof that justifies each step of my argument and will thereby formally establish the truth of this theorem.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

## **The Mean Value Theorem and the Limit of a Derivative**

**Michael Filipowski**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

One of several important theorems in the realm of real analysis is the Mean Value Theorem, which states that given a function that is continuous on the closed interval  $[a,b]$  and differentiable on the open interval  $(a,b)$ , we have a point  $c$  in  $(a,b)$  such that  $f'(c) = (f(b)-f(a))/(b-a)$ . We examine the role that the Mean Value Theorem plays in determining a sequential limit of the derivative of a function. First, we define a sequence that converges to a desired real number, and then we use that sequence, as well as the Mean Value Theorem, to define a new convergent sequence that will provide us with the desired result.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

## **Measuring Photosynthetic Light Responses of Mosses**

**John Lang**, Biology

Faculty Mentor: Professor Daniel Potts, Biology

There is a growing appreciation for the role of mosses and other bryophytes in mediating nutrient cycles and carbon balance in terrestrial ecosystems. However, relatively little is known regarding the physiological ecology of these nonvascular plants. The objectives of this study were to: (1) develop a protocol to collect mosses from the field and culture them in the laboratory, (2) develop an operating protocol for photosynthesis measurements of moss colonies, and (3) to characterize photosynthetic light response



curves for two common moss genera. We collected colonies of *Anomodon* and *Campyliadelphus* mosses growing in similar north facing microsites from Delaware Park in Buffalo, NY and cultured them in the laboratory. We configured a portable photosynthesis analyzer to measure the response of moss photosynthesis to changing light availability. From the resulting light response curves, we estimated dark respiration ( $R_d$ ), the light compensation point (LCP), photosynthetic light use efficiency (AQE), and the light saturation point ( $Q_s$ ). *Anomodon* had a greater  $R_d$ , LCP, and  $Q_s$  than *Campyliadelphus*. Given that the overall pattern of *Campyliadelphus* photosynthetic light response was consistent with adaptations for low light, it is surprising that *Campyliadelphus* had a lower AQE than *Anomodon*. The existence of strong contrasts in functional traits related to photosynthetic light response among mosses found growing in similar microhabitats suggests the possibility of physiological tradeoffs associated with drought tolerance, temperature, or nutrient acquisition. Future studies will use this protocol to investigate the effect of declining moss water content on the rate of photosynthesis.

**Presentation Type and Session:** Poster IV

### Nicotine: Chemical Delivery from Cigarettes versus Electronic Cigarette

**Osayomwonbor Algedo, Anthony Luta, and Rebecca Piskor**, CHE 406: Analytical Toxicology

Faculty Mentor: Professor Alexander Nazarenko, Chemistry

Electronic Cigarettes (e-cigs) have become more and more popular over the last couple of years. Some of the reasons people seem to drift over to e-cigs is to quit smoking, to avoid relapse, reduce urges to smoke, or is perceived as a lower risk than smoking normal cigarettes. In this project, High Performance Liquid Chromatography (HPLC), FTIR, HPLC-MS, UV-vis, are being used to analyze the liquid nicotine pack used in the electronic cigarettes. Specifically, we are comparing the reported value(s) versus the experimentally determined value. Gas chromatography (GC-MS) is being used to analyze the aerosol released from both the electronic cigarettes as well as the standard cigarette. The aerosol is being quantitatively analyzed for the amount of nicotine being delivered. This project was preformed in CHE 406.

**Presentation Type and Session:** Poster VII

### Olin-Dupont: Contamination into Gill Creek and the Niagara River

**Zach Adams and Andrew Migliazzo**, GES 460: Environmental Field Methods and Analysis

Faculty Mentor: Professor Elisa Bergslien, Earth Sciences

In recent years, the government has paid more attention to our industrial past and the threats it has posed to human health. The Olin/Dupont Site in Niagara Falls, NY is a prime example of industrial activity that has led to potential exposure of chemicals

and heavy metals into our precious freshwater resource. We will be focusing our study around Gill Creek, which runs through the Olin/Dupont plant properties between Buffalo Avenue and the Niagara River. This allows us to focus our study area in the most relevant location for groundwater transport as well as soil runoff and gives us a natural barrier for our study. It has come to our attention that the Olin/Dupont Site has been the main source of mercury into the groundwater surrounding Gill Creek. Although it's categorized as a safe level, our goal is to test whether or not mercury, benzene and other industrial chemicals are present in the water, sediment and surrounding soil and if it is in fact at a safe level. In addition to contamination levels in the creek, we would also like to see how far these chemicals have traveled within the creek/river system by collecting surface water and sediment samples. As of now, the EPA has stated that the current contamination levels of the groundwater at this facility are "under control", however, we would like to determine whether or not that is actually true.

**Presentation Type and Session:** Poster VII

### On Computing Distance in the Curve Complex

**Kayla Morrell**, Applied Mathematics

Faculty Mentor: Professor Joaquin Carbonara, Mathematics

The curve complex  $C(S_g)$  is a simplicial complex whose vertices are homotopy classes of simple closed curves on an oriented closed surface of genus  $g$ . A collection of  $k+1$  vertices form a  $k$ -simplex when their homotopy classes have pairwise-disjoint representatives. Assign length 1 to every edges in the 1-skeleton of  $C(S_g)$ . The distance between a pair of vertices corresponds to the length of a shortest path in the 1-skeleton between the pair. The distance function is subtle and interesting. For large distances it was established by H. Masur and Y. Minsky that the function behaves like a hyperbolic metric. For short distances, vertex pairs of distance 1, 2, and 3 are readily produced. However, until recently only one example of a distance 4 vertex pair had been found by J. Hempel. Fortunately, J. Birman, D. Margalit and W. Menasco have recently established a simple test for determining whether a vertex pair is distance 4 or greater. This talk will discuss a computer program implementation of this test. In particular, using this program we have been able to determine that the minimal intersection number for a distance 4 vertex pair on a genus 2 surface is 12 and that there is a vertex pair realization.

**Presentation Type and Session:** Poster IV

### On the Order of an Element in a Group

**Courtney Greenway**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

In my presentation, I will prove a theorem using ideas and concepts from Abstract Algebra. I will use the knowledge that I have gathered from Number Theory and Algebra to prove the

theorem. I will state and prove an interesting theorem that involves the Quotient-Remainder Theorem. This proof is done through contradiction. I will let  $G$  be a finite group and let  $g$  and  $h$  be elements in  $G$ . Then I will suppose that the positive natural number  $m$  is the smallest such that  $h^m$  commutes with  $g$ . Then  $m$  will evenly divide the order of  $h$ . I will present this theorem in an organized and detailed proof that shows all of my reasoning and work.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### **One Step, Two Step: A Two Step Power Ranking of the NBA**

**Kevin Esposito**, AMT 495: Applied Mathematics

Faculty Mentor: Professor Hongliang Xu, Mathematics

There are many ranking systems throughout sports to produce weekly power rankings of sport teams. Some use strength of schedule and record, others use score and score differential, etc. Each sport has a different, refined system that suits its needs. Regardless which power ranking system being used, it is quite often that the power rankings in the early season are quite different than the ranks near the end of the season. This research project is aimed to improve the rankings in the early stage of the season by developing a new kind of ranking system. It applies linear algebra and graph theory to individual sport, taking into the consideration of team records directly and indirectly. The project will use 2013-14 NBA season as a test case, generate a new weekly power rankings and compare them with other weekly power rankings.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: II

### **Petrographic Analysis of Fabrics and Porphyroblasts in the Wissahickon Schist, Philadelphia, Pennsylvania**

**Kasandra Barten**, Geology and **Melissa Bennett**, Earth Science

Faculty Mentor: Professor Gary Solar, Earth Sciences

Specimens collected from the type locality of the Wissahickon Formation in the Southeastern Pennsylvania Piedmont (Philadelphia) were analyzed for mineral patterns relative to metamorphic grade. The formation is composed of interlayered pelitic schist (shale origin), psammitic gneiss and quartzite (sandstone origin), and has a complete record of Barrovian metamorphic zones that formed during continent-continent collision about 450-300 million years ago (Taconic and Alleghanian orogenies). In the field, these zones range up temperature to the south from chlorite (low grade metamorphism) to second sillimanite (very high grade metamorphism). In the same direction the rocks are increasing farther from a major deformation zone. We analyzed hand specimens and corresponding thin sections of the specimen

suite. Most of our analyses are using the petrographic microscope to study microtexture of the metamorphic minerals that make up the rocks' matrix and porphyroblasts (larger crystals surrounded by matrix minerals). Structural and mineral analyses of the fabrics show multiple deformation periods in the form of crenulation. Crenulation is a fabric formed in metamorphic rocks by two or more strains (multiple deformation episodes). We also focused on orientation, deformation, inclusion trails, and evidence for possible rotations of porphyroblasts during or after their growth.

**Presentation Type and Session:** Poster VIII

### **The Physiological Role of ER Chaperone GRP170 in *Caenorhabditis elegans***

**Yuanyuan Li**, Biology

Faculty Mentor: Professor Gregory Wadsworth, Biology

The goal of my thesis research will be to investigate the physiological role of the large endoplasmic reticular chaperone GRP170. Chaperones are essential proteins that help other polypeptides fold into their functional three-dimensional shapes. GRP170, a large chaperone found in the ER of all eukaryotes, has been proposed to play several important roles in protein folding including directing chaperone activity through interaction with unfolding proteins to indirect chaperoning as a nucleotide exchange factor for other chaperones. The nematode *Caenorhabditis elegans* has two genes encoding GRP170: T24H7.2 and T14G8.3. I propose to explore the physiological roles of these two grp170 genes in *C. elegans* by analyzing the phenotypes associated with deletion alleles. I have conducted backcrosses to move deletion alleles for the grp170 genes into the genetic background of a standard laboratory strain of *C. elegans*. For my thesis research I will compare worms homozygous for deletions alleles at T24H7.2 or T14G8.3 with the standard laboratory strain. Specifically, I will analyze whether loss of either grp170 gene is associated with changes in the lifespan, rate of development, egg hatching and sensitivity to poisons that interfere with protein folding. I will also investigate whether either gene is essential for normal folding in any of the nematode's tissues by using reporter gene that causes cells to fluoresce when unfolded proteins accumulate. The physiological effects of loss of GRP170 will provide insight into the general importance of protein folding for normal physiology as well as insight into the role of GRP170 to normal protein folding.

**Presentation Type and Session:** Poster VI

### **A Phylogenetic and Evolutionary Analysis of the TAS2R38 Gene**

**Dominic Scarpine**, BIO 495: Research

Faculty Mentors: Professor Amy McMillan, Biology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

The TAS2R38 gene encodes a receptor for one type of bitter taste. This gene and its analogues can be found in a wide range of

species. In humans, individuals characterized as “tasters” notice a more bitter taste in some vegetables and other plant material, whereas “non-tasters” do not recognize these same foods as bitter. An investigation into the origins and evolution of this gene can provide useful information about culturally-based diets. Also the gene sequences of closely related species, like the chimpanzee and other primates will be compared with human genes. This information will be attained through the NCBI database (National Center for Biotechnology Information) and JSTOR databases for the cultural investigation. BioServers will be used to compare the DNA sequences of the respective genes. The sequences of the TAS2R38 gene will be compared by collecting human and other primate DNA sequences, and then seeing how the protein sequences differ. There is information that the different regions in the world have different concentrations of tasters. The main goal of this project is to see how much of the protein sequence is conserved over time and across different species. Some evidence suggests evolution and conservation of the TAS2R38 gene was driven by detection of poisons in the environment. The impact of having a highly conserved protein gene sequence can show that this bitter taste gene is very important for the evolutionary viability of species.

**Presentation Type and Session:** Poster VI

### Properties of Cx31, a Human Gap Junction Protein Expressed in *Xenopus* Oocytes

**Shelby Rarick**, Biology

Faculty Mentor: Professor I. Martha Skerrett, Biology

In multicellular organisms, adhesion complexes and junctions mediating cell-to-cell communication are vital for normal tissue function. Connexin proteins constitute the communicating form of these junctions in vertebrates and about twenty connexins have been identified in mammals. Connexins form gap junctions that allow ions and small molecules to be directly exchanged between adjacent cells (such as  $\text{Ca}^{2+}$  and siRNA used for signaling). Gap junctions can be studied in various ways, and exogenous expression in *Xenopus* oocytes is a common method for studying properties such as connexin interactions, regulation by ions and metabolites, and voltage-sensitivity, as well as the effects of mutations on function. In this study we focused on two connexins that are expressed in skin, Connexin31 (Cx31) and Connexin32 (Cx32). In humans, Cx31 is expressed in skin and also in the inner ear and mutations are associated with both skin disease and deafness. Cx32 is expressed in skin, the inner ear, the liver, and in myelinating Schwann cells and mutations cause a neurodegenerative disease known as CMTX (X-linked Charcot-Marie-Tooth Disease). While Cx32 expresses robustly in oocytes and is fairly well characterized, Cx31 is difficult to express and there is no published information on the properties of Cx31 in oocytes. My results show that connexin 31 can be successfully expressed in oocytes, if inserted in an appropriate vector. Expression in oocytes has thus far allowed detailed characterization of Cx31, as well as its interactions with Cx32.

**Presentation Type and Session:** Oral — Sciences, Mathematics, and Health: I

### Raman Microscope Detection of Drug and Drug Metabolites from Fingerprints

**Megan Niesy**, HON 400: Muriel A. Howard Honors Colloquium  
Faculty Mentors: Professor Jinseok Heo, Chemistry and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

The goal of this research is to detect a drug and its metabolites from a fingerprint using confocal Raman microscopy. Fingerprints are a residue remained on a surface after the evaporation of sweats transferred from fingers to the surface. Fingerprints are important in forensic science not only because their unique patterns can help identify a person, but also they may provide the evidence of an illicit drug use. The presence of drug metabolites from the fingerprints strongly suggests that they resulted from consumption of a drug, not contamination. Raman scattering is an optical phenomenon when an incident light gains or loses its energy by coupling with the vibrational motions of a molecule. The unique Raman frequencies of the molecule can help identify it. Since the Raman microscopy is a non-destructive method that does not require a sample preparation step, it is regarded as an attractive tool to characterize fingerprints. But, the intrinsically weak Raman signals make it difficult to apply the Raman microscopy for detecting micromolar or submicromolar concentrations of metabolites. Here we propose to use a surface enhancing Raman scattering (SERS) substrate to achieve our research goal. The SERS signal has been reported to be  $10^3$  to  $10^6$  times greater than a normal Raman signal. I will present the test results of two different SERS substrates including the SERS enhancement factor, the reusability and stability of the SERS substrate, and the coffee-ring effect and our future research plans.

**Presentation Type and Session:** Poster V

### Rapid Evolution Favors Invasion by Isolated Species

**Victoria De Stefano**, Biology

Faculty Mentor: Professor Robert Warren, Biology

It has long been recognized that the process of speciation requires genetic isolation and is considered a slow arduous process. We propose that localized adaptation in altered habitats where both native and exotic species occur can be fast, rather than always slow. Darwin long ago suggested that invasive species would do best when they arrived in habitat with few ecologically similar species; however, fewer similar species may be caused by widespread anthropogenic disturbance. Introduced exotic species can quickly overrun native environments, causing declines in native species diversity and changes to ecosystem functions. These successes often have been attributed to an escape from natural enemies or inherent, unique abilities against new competitors. Despite these advantages we suggest invasive success strongly correlates to an escape from conserved gene flow, leading to rapid evolution. It is noteworthy



that rapid evolution requires the cessation of genetic flow from the main population and multiple introductions to overcome the long odds against survival – the exact conditions created by the introduction of exotic species. We ask how the interaction of gene flow with environmental shifts impact localized adaptation in altered environments. For this project we set up preliminary data and established observational mecosystems. In doing so we used the water flea, *Daphnia pulicaria*, to examine the theory of rapid evolution. The reproduction cycle of daphnia functions as a great model for this project because daphnia are cyclically parthenogenetic, they cycle between asexual and sexual reproduction. We quantify the interaction of gene flow with environmental shifts by testing temperature preferences among four populations of daphnia. Establishing mecosystems at four distinct temperature profiles creates altered environments, therefore allocating localized adaptation within following generations. The challenges faced included procuring the species, setting up husbandry, identifying genetic lineages, and preliminary temperature and competition experiments. This study observes several longstanding biological principles to face obsolescence: (1) evolution may be fast, rather than always slow, (2) increased gene flow may not always facilitate adaptive evolution, and (3) invasive species may not be special. We tackle all three of these cutting-edge ideas at once by testing whether interrupted gene flow provides a mechanism giving exotic species an advantage over native species.

**Presentation Type and Session:** Poster VIII

### **Research in Scorpionate Ligands: Chiral Tris(pyrazolyl)methanes**

**Margo Weber**, Chemistry

Faculty Mentor: Professor M. Scott Goodman, Chemistry

Tris(pyrazolyl)methanes (tpms) are a class of tridentate, heterocyclic, nitrogen-donating ligands, sometimes also referred to as “scorpionates”. As part of our on-going efforts to synthesize and study chiral tris(pyrazolyl)methane ligands, a chiral pyrazole derived from camphor was used to synthesize several chiral tpm ligands. The initial synthesis produced a mixture of two regioisomeric tpm ligands in moderate yield. These isomers were separated, purified, and characterized by NMR spectroscopy and X-ray crystallography. Equilibration of the crude tpm mixture using p-toluensulfonic acid lead to an unexpected isomerization of only one of the regioisomers to a third regioisomer, which was also fully characterized. The three new tpms were used to form metal complexes with Fe(II) and Cu(I), which have also been investigated. Metal complexes of chiral tpms have potential to function as catalysts in a variety of asymmetric chemical transformations.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### **The Role of Connexin31 Mutations in Skin Disease and Deafness**

**Linxuan Wu**, Bio 314: Advanced Cell Biology

Faculty Mentor: Professor Martha Skerrett, Biology

Gap junctions play essential roles in cell communication, regulation of growth and development, signal transduction and synchronization. Connexin31 (Cx31) is one of twenty gap junction proteins expressed in humans and is expressed in the skin and inner ear. Mutations in Cx31 are associated with a rare skin disease known as erythrokeratoderma variabilis (EKV), characterized by hyperkeratosis and transient patches of redness. Mutations in Cx31 also cause sensorineural hearing loss. A unique set of mutations is associated with these two diseases suggesting that Cx31 plays different roles in skin and inner ear. Site-directed mutagenesis was used to create mutations in the Cx31 gene. Utilizing mutagenic primers eleven missense mutations and two amino acid deletions were created. Following in vitro transcription, RNA will be microinjected into *Xenopus* oocytes. The oocytes will express the connexin protein and gap junctions will form between oocytes when they are placed together in shallow wells. Properties of the junctions can be assessed using dual cell two-electrode voltage clamp procedures. It is expected that some of the mutants will have properties different from those of wildtype Cx31, leading to a better understanding of skin disease and deafness.

**Presentation Type and Session:** Poster VII

### **Scajaquada System Contamination: Sneaking in?**

**Timothy Thrift**, GES 460: Environmental Field Methods and Analysis

Faculty Mentor: Professor Elisa Bergslien, Earth Sciences

Where do contaminants go after measures are taken to remove them from an area? I propose that the contaminants are being transferred into a different medium instead of being destroyed. This is an important topic to explore because the point of the installments (fountain, dams) to Scajaquada Creek and Hoyt Lake are to rid the system of its contamination, but it may just be spreading it across a wider area. My hypothesis is that the soil between the creek and the lake is contaminated by the creek, and that the contamination is transferring over into the lake. I plan to test this by testing the creek, the soil above Forest Lawn, the soil between the creek and the lake, the part of the lake far from the fountain, and the part of the lake near the fountain for PCBs and *E. coli*. Then I will measure the levels of these contaminants in each sample and compare them to each other. If the levels of contaminants in the soil are between the levels of contaminants in the creek and the lake, it suggests that materials are being transferred. If the levels of contaminants in the part of the lake near the fountain are lower than the levels in the part far away from the fountain, then it suggests that the fountain is getting



contaminants out of the lake. I will present the data and what I think it means.

**Presentation Type and Session:** Poster VIII

## **Snow Spotting in the Polar Vortex and I Survived**

**Justin Blicharski**, GEG 495: Campus Snow Spotter

Faculty Mentor: Professor Stephen Vermette, Geography and Planning

Through the Fall 2013 and Spring 2014 semesters, snowfall and snow depths were measured to establish a record of the 2013-14 Campus snowfall, and to compare with snowfall from previous years. Measurements end when the season begins to warm up and there is no snow left on the ground. The process of measuring snowfall may seem like a complicated task, but it is fairly simple. The major issues when it comes to measurements are more environmental, including aspects like location and winds, and how those elements affected measurements here at SUNY Buffalo State. Aside from the cold and snowfall, many people became aware of a phenomenon that has existed for as long as the planet has, and that is the Polar Vortex. What are the mechanisms to its formation? How did it affect the winter here on campus? With all this going on, does this winter prove that global warming is in fact a myth, or is the global warming the cause of the polar vortex affecting our region? These questions can be answered through the study of the Jetstream and how the world can be affected through teleconnections of weather and pressure systems.

**Presentation Type and Session:** Poster I

## **Spatial and Temporal Changes of Parking Lot Land Use at Buffalo State Applying Unmanned Helicopter Remote Sensing**

**Jiazhen Zhang**, Geography

Faculty Mentor: Professor Tao Tang, Geography and Planning

Abstract On campus parking during a school day is one of major problems for the universities in the United States; in particular for those urban campuses. In essence, this is a land use and land use change problem that is impacted by many factors. In this research, we apply unmanned helicopter that carries a video camera to monitor the land use changes on hourly bases during typical school days, such as Monday or Tuesday. The original frames of images were interpreted in extracting the parking lot occupation data with a time stamp. The digital maps of parking lot land use changes by hours were compiled. Meanwhile, the database of all course offerings with classroom location, time, and student quota was collected from the Associate Dean's office. This database was geo-coded to the Buffalo State building base map in order to demonstrate the land use occupation rates based on hours during a typical school day. Statistical analysis of class occupation of buildings and parking lot occupations was conducted. Distance of one parking lot to a particular class offering building was measured as one of the

major factors influencing the parking lot occupations. The survey and spatial and statistical analyses were conducted to comparing situations of beginning, middle, and the end of the Spring semester of 2014.

**Presentation Type and Session:** Poster III

## **Study of Mineral Patterns in Wildcat "Granite," Northern New Hampshire: Meta-sedimentary Rock or Igneous Intrusive?**

**Sherman Wisor IV**, Geology

Faculty Mentor: Professor Gary Solar, Earth Sciences

Granite and partially-melted rocks that form during continent-continent collisions are considered the record of magma flow at that time, and the feeders of volcanoes at the surface. In the Appalachians (about 400 million years ago, Acadian orogenic period) the Wildcat "granite" now found in Pinkham Notch, NH (Mount Washington area), are of a tonalitic composition. The presence of meter-scale calc-silicate pods called schollen, and centimeter-scale wisps of biotite called schlieren, when coupled with regional geology, support the interpretation of in-place partial melting of country rock resulting in residual enrichment of Wildcat rocks with the recrystallized minerals. The outcome of this project is to determine whether the Wildcat "granite" is instead the result of in-place melting of country rocks that used to be of sedimentary origin through migmatite formation (anatexis and diatexis). So, instead the rocks are diatexite. As such, the Wildcat rocks would represent extensive melting in place, and then recrystallized (also in place), rather than of an igneous origin. A combination of field and laboratory studies was conducted to methodically re-map outcrops within the field area, and in doing so produce an updated and more in-depth, structurally-focused map. This map is used for comparison with rocks found in the field area, and with rocks typical of the Central Maine Belt, and has permitted an interpretation of regional tectonic significance. Further extrapolation of regional geology can be used to evaluate models of crustal dynamics involved in Acadian migmatite petrogenesis in the Northeastern United States.

**Presentation Type and Session:** Poster VI

## **Textural and 3-D Mapping of Melt Structures in Pinkham Notch Migmatite, New Hampshire**

**Alexandra Fletch**, Geology

Faculty Mentor: Professor Gary Solar, Earth Sciences

The analysis of textural and structural mineral patterns found within Pinkham Notch Migmatite, as exposed in the Peabody River along the western side of Mt. Washington, New Hampshire, reveals an interpretable structure. Pinkham Notch migmatite is defined by its strong stromatic (layered) pattern that likely recorded deformation and melt flow to produce the structure, noticeable as dark-gray rock with some very light-colored vein-like granitic

layers within. The migmatite is of note as an example of excellent preservation of this structure, and therefore a good record of magma flow networks (plumbing) as centimeter-scale granitic leucosomes (igneous veins) and decimeter-scale granitic dikes. So, this project was designed to document the paleo-plumbing. Field work consisted of mapping contacts of leucosomes with the host rocks, recording structural data of the outcrop erosion surfaces, documenting in detail the granitic composition mineral aggregates and photographic documentation at millimeter- to meter-scale. Specimens for laboratory analysis were collected for planned microanalysis. The exposure was divided into individual square meters (53 blocks) in which I analyzed each in great detail with the plan of reintegrating the squares graphically into a full orthographic projection for 3-D reconstruction. The blocks are oriented NE-SW along the length of the long aspect of the outcrop. Each block image is imported into graphics software, and tracings of the contacts of leucosomes and dykes are realigned in correct orientation to recreate the whole pavement outcrop. Results show three classifications of granitic rocks based on textural contexts, and a plumbing is suggested by their map patterns.

**Presentation Type and Session:** Poster VI

### **Tonawanda Creek Surface Water: Genesee County**

**Jenni Maurer and Jessalyn Payne**, GES 460: Environmental Field Methods and Analysis

Faculty Mentor: Professor Elisa Bergslien, Earth Sciences

Tonawanda Creek, a tributary to the Niagara River, stretches 101 miles and crosses four counties: Wyoming, Genesee, Niagara, and Erie. The river can be split into three segments, lower, middle and upper. The cause for concern in the upper portion of the river (anything above Batavia) is silt/sediment loads, stream bank erosion, and agricultural activities. The water supply is also susceptible to pathogen contamination, which had caused the City of Batavia to switch its primary drinking water source to groundwater wells. In this portion of the river, there are sewage treatment plants that discharge wastewater into the creek. We believe contamination of surface water in Batavia is potentially due to municipal discharge of waste from Batavia Sewage Treatment Plant as well as from the high concentration of agricultural activities. We will collect water samples where the Batavia STP discharges into Tonawanda Creek and compare those results with samples collected upstream above the plant and downstream below it. There is known to be silt/sediment and nutrient pollution so we plan to test for phosphates in fertilizer, E. coli, dissolved oxygen and thermal pollution. We believe the data will show higher concentrations of contaminants near the Batavia STP discharge area compared to samples taken above the plant.

**Presentation Type and Session:** Poster VII

### **The Uniform Continuity of Composite Functions**

**Xin Dong**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

In this talk I will prove a theorem using ideas and concepts from real analysis, a significant branch of mathematics. Uniform continuity is an important concept in real analysis, as is the notion of continuity. Epsilon-delta proofs play an important role in the definition of uniform continuity. In my presentation, I will prove that the composition of two uniformly continuous functions is also uniformly continuous. Prior to my proof, I will discuss the definition of uniform continuity. Then I will present a formally written and detailed proof that clearly identifies all of my reasoning.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### **Uniformly Continuous Functions and Cauchy Sequences**

**Hongmei Lin**, MAT 491: Research in Mathematics

Faculty Mentor: Professor Daniel Cunningham, Mathematics

The objective of this research project is to investigate a relationship between uniformly continuous functions and Cauchy sequences. I intend to prove a theorem in mathematics by using concepts from real analysis. The theorem that I will prove can be summarized as follows: Let  $D$  be an open interval  $(a, b)$  where  $a < b$ . Suppose that a function  $F$  from  $D$  to the set of real numbers is uniformly continuous. Let  $x_n$  be a sequence of elements in  $D$ . If  $x_n$  is Cauchy sequence, then the sequence  $F(x_n)$  is also a Cauchy sequence. In other words, I will prove that a uniformly continuous function preserves Cauchy sequences.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### **Urban Dumping Site: Scajaquada Creek**

**Vanessa Pereira, Spencer Leet, and Jason Threet**, GES 460: Environmental Field Methods and Analysis

Faculty Mentor: Professor Elisa Bergslien, Earth Sciences

Scajaquada Creek is one of the seven tributaries that enter into the Niagara River. According to the ecological standing committee, about 300 million gallons of raw sewage makes its way into the creek every year. This contamination is caused by various reasons; sediments contained in storm water, contamination due to sewer runoff, and the dumping of garbage and contaminants by locals. This has led to poor aesthetic conditions, combined sewer overflow issues, contamination, excess sedimentation and flooding. There have been a number of agencies that have conducted water sampling and cleanup activities to help restore the quality of the creek. This project will focus on the current status of the creek, specifically collecting water and soil samples where the creek resurfaces underneath Route 198. (Scajaquada Expressway) The goal for

this project is to collect water and soil samples in three locations surrounding the constructed finger dam, which has unintentionally trapped garbage and debris that has drifted downstream. The garbage has resulted in a buildup of sewage sludge on the stream bottom that is contaminated with heavy metals and synthetic compounds. We will sample directly above and below the dam, and 600 meters downstream and upstream of the dam. With these samples we can get an idea of what contaminants are in the creek and assess if the creek is progressing with clean up and restoration. We will compare our findings with the findings of other scientists sampling the area to see what the largest area of concern is in the creek.

**Presentation Type and Session:** Poster VIII

### Using Ground Penetrating Radar to Assist in Archaeological Excavations: Part 1

**Trevor Jennings**, Earth Science and **Brandon Luther**, Earth Science

Faculty Mentor: Professor Kevin Williams, Earth Sciences

Ground Penetrating Radar (GPR) is a non-invasive and non-destructive technology that can be used to examine the subsurface. GPR uses radar antennas dragged across a surface to send electromagnetic waves into the ground. The waves detect differences in electrical properties making objects appear as hyperbolas in the data resulting in a 2D image of the subsurface. The data can then be processed and used to create a 3D view. In this project, GPR was used to assist in the planning of future archaeological excavations at Old Fort Niagara in Youngstown, New York. GPR data collected at the fort was processed into a 3D view of the northern and central sections. The primary goal of identifying the buried foundations of the Red Barracks was met. Many other features were identified in the 3D view and, through the use of historic maps, were studied to interpret their origin. Data were collected over the summer of 2013 over 2 days using a GSSI, Inc. SIR-3000 system with a survey wheel. In order to create the 3D view, the data were collected in 20 m x 20 m grids of transects spaced 0.5 m apart.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### Using Ground Penetrating Radar to Assist in Archaeological Excavations: Part 2

**Brandon Luther**, Earth Science and **Trevor Jennings**, Earth Science

Faculty Mentor: Professor Kevin Williams, Earth Sciences

Ground Penetrating Radar (GPR) is a non-invasive, non-destructive tool that is used to study the subsurface. This technology works by detecting the reflections of electromagnetic waves sent into the ground by an antenna on the surface. The reflections are caused by a difference in electromagnetic properties of the material. The result is a 2D transect of data that uses hyperbolas to represent the strength of reflections; data can be combined to create a 3D view of

the subsurface. This technique to create a 3D map of the subsurface was used at Old Fort Niagara to detect buried foundations of old buildings and structures at the fort. This part of the project included data from the southern and central sections of data collected at the fort during the summer of 2013. Data was collected in 20 m parallel transects spaced 0.5 m apart and was compared to maps from several periods in the fort's history. Data revealed the foundation of the Red Barracks and other possible structures at the Fort. These results will be used to plan future archaeological digs in the fort. This will allow for an accurate location of structures that will lead to better location of artifacts in the fort's subsurface.

**Presentation Type and Session:** Oral – Sciences, Mathematics, and Health: I

### What Does the Fox Say? An Investigation of the Behavior of the Lower Fox River

**Brandon Franks**, Physics

Faculty Mentor: Professor Jill Singer, Earth Sciences

The Fox River includes the highest concentration of pulp and paper mills in the world and currently is the site of the largest cleanup of PCBs from a waterway in the US. This cleanup involves sediment removal by dredging and required several legal steps including judicial orders and a bench trial (the judges ruling in favor of the Department of Justice currently is in the appeals process). Several key issues in the trial related to sedimentation patterns in the river, particularly the lowermost stretch of the Fox River. This investigation builds upon prior studies about sediment transport in the Fox River and an oscillation behavior documented in the Buffalo River. It aims to answer the question: Does the Lower Fox River oscillate and if it does, is its pattern similar or different than the oscillation that occurs in the Buffalo River? To answer these questions, two water level recorders were deployed in the Fox River from June 21 to November 16, 2013. These recorders measured the elevations of the river every 5 minutes. One recorder was placed near the mouth of the river. The second recorder was placed ~3.5 miles upriver. An analysis of the data reveals that multiple seiches occurred when water entered the river from Green Bay and raised the elevation in the river. A seiche on October 27 raised river levels an average of 45.91" near the mouth of the river, increasing to an average height of 68.08" upriver. Between October 27-28, the recorder near the mouth of the river recorded a change from 35.6" to 64.0" over a period of ~6 hours. A similar pattern was observed at the upriver recorder where the height increased from 57.6" to 89.6" over the same period of time. Preliminary findings will be presented along with some possible ideas about the hydrodynamic behavior of the Lower Fox River.

**Presentation Type and Session:** Poster VI

## **Who's Your Daddy? A Parentage Analysis of Buffalo Zoo Eastern Hellbenders**

**John Lang**, Biology

Faculty Mentor: Professor Amy McMillan, Biology

*Cryptobranchus alleganiensis alleganiensis*, also known as the Eastern Hellbender, is a large aquatic salamander native to cool streams and rivers, such as the Allegheny River. The hellbender populations in the Allegheny region are declining, likely due to factors such as disturbances and introduced species. In 2009, a cohort of more than 600 Eastern hellbender eggs was retrieved from the Allegheny River mainstem. This population is being raised in the Buffalo Zoo for reintroduction to the wild. It is unknown how many hellbenders parented this one cohort, but population genetics techniques can be employed to uncover this information. Microsatellite markers are useful tools for understanding a population's genetic structure. Fifty-three Buffalo Zoo hellbender samples were genotyped at ten microsatellite loci. This data was compiled with that collected from two graduate students and used to perform a parentage analysis using the program, COLONY. The analysis inferred six mothers and seven fathers parented this population. However, various typing errors may result in an overestimation of parents. Although possible, it seems unlikely that a great majority of a site's population would breed under the same rock. On the other hand, if these results are true, this would provide insight to an interesting behavior that would deserve further investigation.

**Presentation Type and Session:** Poster VI

## **Working Methods: The Howard D. Beach Photography Studio of Gelatin Dry Plate Negatives**

**Noelle Wiedemer**, Museum Studies

Faculty Mentor: Professor Cynthia Conides, Museum Studies

In the spring of 2011, the Buffalo History Museum received a donation of over 30,000 gelatin dry plate negatives from the Howard D. Beach Photography Studio located in Buffalo, New York and in operation in various manifestations from 1896 to 1954. This research serves to explore the various physical and chemical properties of the gelatin dry plate negatives in order to understand Beach's photographic working methods and compare them to the industry standards. Answers to numerous questions are sought in conducting the research necessary to grasp a somewhat complex and often contradictory story. What brands of dry plates did Beach use for his portraits? Do they have different characteristics? Why may he have preferred one brand over another? How did it affect his working methods? A survey of the manufacturers' original boxes served to identify the numerous companies in competition in an increasingly growing market. Scientific methods were used to analyze whether or not plates from different manufacturers can be distinguished

from each other. Using support from Beach's actual journals, it is hypothesized why Beach may have preferred one particular manufacturer's brand to the other.

**Presentation Type and Session:** Poster V



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## *Psychology and Social Sciences*

### **The Acculturation of Burmese Refugees to Buffalo Society**

**Brittney Singletary**, Journalism

Faculty Mentor: Professor Lisa Marie Anselmi, Anthropology

This research examines the acculturation (cultural adjustment) of Burmese Refugees to Buffalo society. The study investigates fundamental changes in clothing, food, common rituals, family tradition, and overall adherence to Burmese culture. Two criteria have been used to define the study population: (1) Burmese refugees assumed experiences in refugee camps prior to their migration to Buffalo, and (2) the differences among refugees residing in a rural or urban refugee camp. John W. Berry's psychological framework assists to measure social, moral, and societal differences effects on refugees' acculturation; in analyzing the qualitative responses given by refugees in America, the response data will outline which of the four-fold model of acculturation strategies: Assimilation, Separation, Integration and Marginalization, Burmese refugees experience in Buffalo. My work argues that Burmese Refugees are being marginalized within Buffalo. This argument is drawn from the predicted connection between 19th century America's deeply rooted philosophy of restrictionism toward immigrants and recent policies. Delineating different aspects of restriction can show how these aspects of restriction influence Burmese refugees' acculturation by resulting in marginalization on a micro-scale. The study measures changes in cooking, clothing, tradition, and economic adaptations, all areas customarily addressed by Burmese women. It is expected that social and economic roles can be better evaluated by researching strictly Burmese women. They are the agents of acculturation through changes in the Burmese domestic and cultural spheres.

**Presentation Type and Session:** Poster V

### **American-Russian Relations: Warming Interaction Amidst Lingering Cold War Dogma**

**Graeme Eagles**, PSC 330: American Foreign Policy

Faculty Mentor: Professor Kyeonhi Baek, Political Science

Russian-American relations, despite the fresh start implemented by the Obama administration, are strained. Programs exist that attempt to provide an understanding of each nation's culture and to ease tension between the two countries. However, the most effective action that could achieve this goal, I argue, is expansion of trade. The bilateral trade agreement proposed by Russia, could further expand commerce between the two nations, which amounted to \$41 billion last year (Stent, 2014). However, there are many obstacles; first, the U.S. wants Russia to join a pre-existing multilateral trade agreement; second, there are numerous political issues that both

nations need to address--instability in Syria and Ukraine, just to name a few. Thus, I plan to examine political supporters and veto players of the bilateral trade agreement, proposed by Russia. First, I will rely on prior research completed on the beneficial results on diplomatic relations between nations engaged in trade agreements. Second, I will examine which sectors of the economy that stand to benefit the most and which sectors might stand to suffer. I will apply the Expected utility formula ( $EU = \text{Goal} - \text{cost} \times \text{probability of success}$ ); in order to calculate the likelihood of mutual, successful economic integration of Russia as well as warming of diplomatic affairs. This research will identify stakeholders and veto players of a bilateral trade agreement between the two nations. By identifying those actors and their expected utility, I believe this study can raise awareness on the issue and help U.S. policy makers make an empirical driven and evidence based decision.

**Presentation Type and Session:** Poster VII

### **Amputation and Subsequent Change in Bone Tissue**

**Erin Baccari**, Anthropology and Psychology

Faculty Mentor: Professor Julie Wiecekowsky, Anthropology

Wolff's Law states that bone tissue will adapt to loads under which it is placed. In cases where one limb is amputated, changes in the bone structure of the paired, unaltered limb may occur due to compensation of muscles. This research investigates changes in non-amputated limbs based on Wolff's Law. Due to the way bone remodels with increased force, I hypothesize that increased demands on the unaltered limb will result in morphologic changes to skeletal tissue, causing growth. This research was conducted using the Hamann-Todd Osteological Collection at the Cleveland Museum of Natural History. Specimens with a documented history of ante-mortem amputation were used (23 lower, 4 upper). Measurements were taken of the limb on both the amputated side and the non-amputated side, and upper limb measurements included the shoulder girdle. Standard measurements were taken. Limb measurement data was collected for 27 individuals matched in sex and age to all amputee specimens as a control. Scapular measurements (anatomical breadth/length) in amputated limbs were significantly smaller ( $z = 2.3805$ ,  $p = 0.01729$ ), as were clavicular measurements (maximum length/anterior diameter at mid-shaft) ( $z = 2.0396$ ,  $p = 0.041389$ ). The medial-lateral diameter of the femur in those with a lower leg amputation (measured one inch above amputation or at mid-shaft) were significantly smaller ( $z = 1.8827$ ,  $p = 0.059739$ ), but not in those with a femoral amputation ( $z = 0.35564$ ,  $p = 0.72211$ ). There were no differences in anterior-posterior diameter in either sample. There were no differences in the control sample overall. Little literature exists pertaining to Wolff's Law after amputation; this research suggests greater demands on non-amputated limbs.

**Presentation Type and Session:** Poster V

## **Ancient Artisans: Totem Poles of the Northwest Coast**

**Nicollette Winiewicz**, ANT 400: Ancient Materials

Faculty Mentors: Professor Lisa Marie Anselmi, Anthropology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Beautiful artwork has blossomed from ancient Northwest Coast Native American cultures. Groups such as the Tlingit, Haida and Kwakwaka'wakw have crafted magnificent works using materials directly from their surrounding environment. With Red Cedar in abundance, it's no wonder that woodworking became a distinguished art form in the region. Totem poles were built to tell stories, commemorate certain events and to even display tribal and family lineages. Native American totem poles were always hand-carved in the past, and the tradition has mostly continued into modern times. My project will explore the ancient technologies, methods and techniques of totem pole carving, the history behind totem poles and I will attempt to carve my own small-scale totem pole using shells, stone adzes, beaver jaws and crooked knives in the ancient way. With this project I hope to gain a better understanding of the labor, patience and skill required to complete this task on a much larger scale. My goal is to extend this knowledge to others and to help preserve and promote these ancient techniques.

**Presentation Type and Session:** Poster VI

## **Anxiety and Avoidance Behavior in Rats as a Result of Exposure to Cat Dander**

**Kathryn Przybysz**, Psychology and **Jennifer Hacker**, Psychology

Faculty Mentors: Professor Jean DiPirro, Psychology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Advancement of our understanding of post-traumatic stress disorder (PTSD) is limited by the lack of an ecologically valid animal model that can capture the complex stimuli surrounding a traumatic event that lead to the disorder. Our laboratory has been systematically exploring the possibility that predator-scent exposure (i.e., cat-dander exposure) in rats may model critical aspects of combat-related contexts that are important for induction of PTSD in humans. The current study is designed to evaluate the psychophysical properties of our predator-scent stimulus to drive defensive avoidance behavior, indicative of fear, and defensive approach-avoidance behavior, indicative of anxiety. A long test cage and an elevated plus maze will be used to measure avoidance and anxiety-like behaviors, respectively. Cat dander will be obtained by rubbing a terry cloth on two separate cats for varied amounts of time. The levels of cat dander concentration are: control = no rubbing; low = 1 day of rubbing; medium = 3 days of rubbing; and high = 10 days of rubbing. We hypothesize that a linear relationship will be found between concentration of the cat dander stimulus and the resultant avoidance and anxiety-like behaviors.

The data collection process is currently underway. In the event that our data support our hypothesis, we will be able to construct a more ecologically valid rat model of PTSD.

**Presentation Type and Session:** Poster IV

## **The Aztec Empire and Their Post-Contact Legacy**

**Joseph Reed**, ANT 498: Honors Research

Faculty Mentor: Professor Lisa Marie Anselmi, Anthropology

The Aztecs, who probably originated as a nomadic tribe in northern Mexico, arrived in Mesoamerica around the beginning of the 13th century. From their magnificent capital city, Tenochtitlan, the Aztecs developed an intricate social, political, religious and commercial organization that brought many of the region's city-states under their control. At the time of Spanish contact in the sixteenth century, the Aztec were the preeminent power in Mexico, Tenochtitlan being nearly two hundred years old. The Aztec left behind historical records, in the form of codices, which give us an idea of the impact they had on world history. Ultimately however, invaders led by the Spanish conquistador Hernan Cortes overthrew the Aztecs by force and captured Tenochtitlan in 1521, bringing an end to Mesoamerica's last great native civilization. Even still, the Aztecs left a durable stamp upon modern Mexican culture. Much of what is considered modern Mexican culture derives from the Aztec civilization: place-names, words, food, art, dress, symbols, and even the name "Mexican".

**Presentation Type and Session:** Poster VI

## **Behavioral Aggression: Sending a Healthy Message**

**Charles Pacholski**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor Jean DiPirro, Psychology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

I will be testing to see if methods known to be effective in producing positive changes in health behaviors associated with obesity and alcoholism are effective in producing positive changes in behaviors associated with aggression. The inspiration for this study is Gary Slutkin, who has been using epidemiological methods to decrease levels of violence in Detroit, MI, treating violence as a disease. I will first conduct a survey assessing participants' levels of aggression and situational/personal factors thought to affect behavior. Participants will then be asked to attend a lecture conducted either by a professional in health psychology/behavioral epidemiology or by a stooge who is acting as such a professional. The lecture will present a message designed to positively change listeners' aggressive behavioral patterns and convey what can be immediately gained from this change in behavior. Approximately two weeks after the lecture, participants will be surveyed again, testing the same measures. Some models and theories that will

be used to interpret the findings of this study are the health belief model and Ajzen's theory of planned behavior. I expect to find that methods effective in treating health behavioral patterns associated with disease will be useful in treating behavioral patterns associated with aggression. Although this study is designed to assess short-term effects, the data should be useful in suggesting efficacious ways to change long-term behavior.

**Presentation Type and Session:** Poster IV

### **Blood Coffee: The Socio-Economic Struggle of the Indigenous Coffee Farmers of Guatemala, 1970-1985**

**Gabriel Maldonado**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

During the tragic Guatemalan Civil War, behind every cup of coffee there was a story, a history of bloodshed among the indigenous coffee farmers. As a result, by looking at the Guatemalan Civil War during 1970-1985, the violent state of repression against the indigenous communities proves the coffee beans cultivated and exported from Guatemala financed a violent military insurgency. Moreover, research will convey the idea of Guatemalan coffee beans being considered as a blood commodity of its time during the horrific civil war in Guatemala. In addition, what will be added to the discussion on the Guatemalan Civil War is a focus on coffee culture in regard to the Mayan peoples and an understanding of their contribution to the economy in Guatemala. Thus, in the statistics of production and exportation of coffee beans in Guatemala during the civil war what evidence will show additionally, are exported coffee beans having a history of violence. Ultimately, by then looking at specific accounts of massacres and disappearances carried out against the indigenous farmers will prove the coffee beans contribute to this idea of a hidden history of genocide in Guatemala. More specifically, unveiling documented stories of the violent military insurgency from the perspective of notable individuals such as Noble Peace Prize winner, Rigoberta Menchu.

**Presentation Type and Session:** Poster V

### **Can NATO Survive?**

**Christopher Garozzo**, PSC 330: American Foreign Policy

Faculty Mentor: Professor Kyeonghi Baek, Political Science

Is the United States able to ensure NATO cooperation against Al-Qaeda and the Collective Security Treaty Organization? Neo-realists believed NATO would dissolve without a worthy rival to face after the collapse of the Soviet Union. Since the end of the Cold War, NATO, however, has expanded its membership to many Eastern European nations and engaged in various military operations such as Kosovo and Afghanistan. Whether or not these missions have been successful is a question posed by the international community. Some believe NATO is efficient in conducting the War on Terror while

others disagree and call it a "Cold War relic." I argue that NATO is an efficient organization, but more and deeper cooperation is needed to succeed in Afghanistan.

**Presentation Type and Session:** Poster VII

### **Career and Technical Education for Social Economic Justice**

**Akin Wilson**, SOC 389: Community Perspectives and Experiences

Mentors: Professor Maureen McCarthy, Sociology, Ms. Aurora Schunk, VSLC Associate, and Mr. Darryl Carter, STEP

As a part of the Community Service Peer Leader Program (SOC 389) I am working with the STEP Program that works with underserved youth and tries to get them involved and prepared for college. STEP services include tutoring, special course work, enrichment activities, and the opportunity to work alongside a Buffalo State faculty member in a research setting. In addition to being a tutor with STEP, I hope to offer my service as a Career Development and Occupational Studies mentor for students. In the rest of my semester of service I plan to adapt a Money Matters curriculum to use with students in the STEP program. The key takeaways as outlined by the Money Matters guide include setting your goals, including financial, and creating a plan to reach them. The purpose of my project is designed to advocate for Career and Technical Education as an ally for Social Economic justice by Career development and occupation studies.

**Presentation Type and Session:** Poster I

### **Cheers! Prohibition in Buffalo New York: 1920-1933**

**Troy Climenhaga**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

This research activity will focus on prohibition, why it failed in Buffalo New York, and the impact its failure had on Buffalo's history. Primary and secondary sources will be utilized to compile a poster with pictures and text portraying people, events, and places that led to the failure of prohibition. The city of Buffalo had many unique variables that led to the failure of prohibition that will be explored. The poster will also display the supporters of prohibition so the viewers will sense the magnitude of the alcohol debate. Viewers of the poster will be transported to Buffalo in the 1920s. A timeline of events and places will be displayed. The many factors leading to prohibitions failure will be presented. Illegal actions like alcohol smuggling and speakeasies will be featured. The poster will be an informational and entertaining look into Buffalo's past. The failure of prohibition had an impact on the development of the city of Buffalo. The poster will also examine the city of Buffalo and explore how prohibition has made Buffalo the drinking town it is today.

**Presentation Type and Session:** Poster VII



## **Civic Engagement: Partisanship versus Altruism in the Context of Rational Choice**

**Dan Benson**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

Civic engagement, namely voter turnout, has enjoyed renewed interest in the political science community. Authors both acknowledge its importance (e.g., Berry, 2005; Dudley and Gitelson, 2003; Muller, 2012) and agree that its practice is declining (e.g., Putnam, 2000; Stolle and Howard, 2008), with some stipulations (Dalton, 2004). Generations of rational choice theorists have attempted to explain this phenomenon in a variety of ways, not the least of which Downs's utility model based on partisanship (Wang, 2013). Yet contrary evidence suggests that altruism may play a part in human political behavior (Fowler, 2006), potentially undermining the fundamental concepts behind rational choice. I pit the two variables against one another in a logistic regression. I find that partisanship is a better predictor of voter turnout than altruism, though both have a significant effect.

**Presentation Type and Session:** Poster V

## **College Students and ADHD Medication**

**Tessa Bechtold**, PSY 499: Independent Study

Faculty Mentor: Professor Jill Norvilitis, Psychology

The misuse of prescription stimulants is widespread, with prevalence rates ranging from 0 to 25% in prior research among universities throughout the United States. The present study examined the association between illicit stimulant use and level of grit, which is trait-level perseverance, and self-deception. Because those who use stimulants are likely to view them as a shortcut to academic achievement, it was predicted that there would be a correlation between the misuse of stimulants and a lower level of grit. Further, because such shortcuts are often not associated with long-term success, it was also predicted that stimulant use would be positively related to self-deception. Data were collected from a nationwide sample of 579 students through Amazon's M-Turk platform. Among the participants, use of stimulants without a prescription was common, with 27.9% reporting use. The most common reasons were academic (68.1%) and social reasons (16%). As expected, there was a correlation between the misuse of stimulants and lower self-reported grit and greater self-deception.

**Presentation Type and Session:** Poster V

## **Color Me America: One Nation Under Diversity**

**Jade Mills**, Sociology

Mentor: Ms. Gail Wells, Community Specialist

"Color Me America: One Nation Under Diversity" first began as a short film that I directed as a positive reaction to the negative feedback that the Coca-Cola commercial "America the Beautiful" received when aired during the 2014 Super Bowl. The ad featured

various Americans singing "America the Beautiful" in their native tongue and spurred a national boycott of Coca Cola. After completing the film I felt the concept of a "New America" merited further exploration. I wanted to explore the concept of "belonging", creating communities of inclusion and equity and the struggles and valuable information we would need to know to make a "New America" beautifully diverse. I am using stories captured in taped interviews and a group process known as caucus reporting as the research method for this qualitative study. The findings from my research will be displayed in a poster presentation and will include clips from my short film and selected stories from the taped interviews. This research project will be of interest to those who want to learn how Buffalo State (students, faculty and staff) view "America" as it is adapting to accommodate a changing demographic take will evolve into "One Nation Under Diversity".

**Presentation Type and Session:** Poster I

## **Consociation, Federation, and the Prevention of Ethnic Conflict**

**Megan Connelly**, PSC 204: Political Statistics

Faculty Mentor: Professor Kyeonghi Baek, Political Science

The history of the 20<sup>th</sup> century and the beginning of the 21<sup>st</sup> has been marred by devastating struggles for power between rival ethnic groups. Most political scientists agree that conflict in divided societies is reduced through federal institutions, but there is considerable disagreement on how federalism should be applied. Lijphart (1985) recommends a consociational system whereby political power is devolved from the center to segmentally autonomous ethnolinguistically-based constituent units. Others, Horowitz (2002), propose a more majoritarian style of federalism with procedural mechanisms to ensure legislative moderation. As a reply to the controversies of nation-building in ethnolinguistically divided regions, the current research will examine how consociation or majoritarianism within a federal system affects incidence of ethnic conflict. Using VanHanen's (1999) scales of Institutionalized Ethnic Conflict and Violent Ethnic Conflict and other data sources, this research examines whether consociational states are more likely to prevent ethnic conflict than majoritarian federal states.

**Presentation Type and Session:** Poster VI

## **The Crack Cocaine Epidemic: The Medias Perceptions and the War on Blacks from 1986-1989**

**Fabiola Castro**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

I plan to discuss how the Media, used crack cocaine to target African Americans during the crack cocaine epidemic of 1986. The media entered the deprived communities of these major cities to film, report, and witness the meager conditions caused by crack cocaine.



Because of the media's attention to the crack cocaine epidemic the politics and law making of the United States surrounded the Drug problem for about four years. Its negative attention caused a nationwide scare that targeted the African Americans living in the improvised cities of New York, L. A., and Miami. I hope to bring attention to the influence media has on major topics in the United States has a dangerous effect on the groups of people it targets. Media, because it is a direct source to the masses is able to secure persuasion and validity to topics it may or may not be able to prove. Crack cocaine did not target African Americans, the media did. The effects of crack cocaine on African Americans became a long-term issue and created a cycle that has lasted till this day.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

### **Cross the Invisible Barrier to Grant Street: Increasing Student, Faculty, and Staff Awareness and Engagement**

**Allison Hyman**, Dietetics and Nutrition

Mentor: Ms. Laura Hill Rao, Coordinator, Volunteer and Service Learning Center

Through a Buffalo State Faculty Student Association Founders Fund grant, a student leader conducted a program exposing students to local businesses and community organizations on Grant Street. Fifty students participated in a tour, service activity, and conversations with local business owners as part of Spring Community Service Day on April 12. The perception of Grant Street among students and, to a lesser extent, faculty and staff is decidedly negative and this program intended to expand their horizons and challenge their perspectives. At the beginning of the afternoon, students were asked to fill out a survey that asked them to express their feelings about Grant Street and when the tour was completed, they were asked to again fill out a survey. The results were analyzed to determine the impact on student perceptions. This presentation will discuss the activities of the day and the results identified through the student surveys. Participants will gain an understanding of opportunities in the Grant Street neighborhood and connections that can be expanded between the campus and community.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

### **The Culture within a Child Care Facility: Daily Life Inside a Day-Care Center**

**Lindsey Bryant**, ANT 498: Honors Research

Faculty Mentor: Professor Kimberly Hart, Anthropology

I conducted a semester of ethnographic fieldwork at the Buffalo State Child Care Center as part of my anthropology honors research. Parents question whether or not to send their children to day-care and whether it is the best choice for their families. In order to understand the environment and culture within a child-care center, ethnographic research was used to observe routines and

activities within the classrooms of the Buffalo State Child Care Center. The study aims to address some of the questions that parents and guardians have including dietary practices, emotional availability of caregivers, disciplinary actions and educational aspects.

**Presentation Type and Session:** Poster IV

### **The Differences between Honors and Non-Honors Students**

**Emily Marshall**, PSY 499: Independent Study

Faculty Mentor: Professor Pamela Schuetze, Psychology

Educational institutions distinguish between honors students and non-honors students. Honors students are often assumed to have a higher intelligence than those who are not honors students. However, grade point average may not be the best indicator of intelligence or academic success. Parental involvement, parenting styles, locus of control and self-esteem have shown to be predictors of academic success. 15 participants (x honor students) completed measures of cognitive ability (Peabody Picture Vocabulary Test), parental involvement, parenting styles, locus of control and self-esteem. Results indicated that despite the fact that there were no significant differences in study habits, self-esteem, family support, and locus of control, honors students had a significant higher GPA than non-honors students. They also scored significantly higher on the Peabody Picture Vocabulary Test, indicating higher cognitive ability. These results suggest that cognitive ability may be the biggest differentiating characteristic between honors and non-honors students.

**Presentation Type and Session:** Poster VII

### **The Disaster at Love Canal: The Rise in Female Activism During the Late-Twentieth Century**

**Danielle Smerda**, HIS 300: Methods of Research and Writing

Faculty Mentors: Professor Bridget Chesterton, History and Social Studies Education and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Lois Marie Gibbs began her fight in 1978 to discover the causes behind her son's illness. After reading an article that detailed the discovery of chemicals buried beneath Michael's elementary school in Niagara Falls, New York, Gibbs was determined to prove the exposure caused his severe illness. By creating the Love Canal Homeowners Association, Gibbs and other area housewives began calling for action against Hooker Chemical Company, the city of Niagara Falls, New York State, and even the federal government. Lois Marie Gibbs paved the way for female activism with her efforts at Love Canal. Her courageous acts inspired a generation of females to take a stand against injustices within society, including the Grandmothers of the Plaza de Mayo. Gibbs' altruistic actions and beliefs brought female activism to the forefront in not only American society, but also the world.

**Presentation Type and Session:** Poster V

## **A Disparity Problem: A Comparison between Developed and Developing Nations**

**Amanda Darcangelo**, PSC 204: Political Statistics

Faculty Mentors: Professor Peter Yacobucci, Political Science and Professor Kyeonghi Baek, Political Science

Standard of living, though thought to be a key measure of how a population lives, has no real definition. In this paper, an index has been created to measure the standard of living of various countries, to show the effect wealth disparity may have on it. Wealth disparity is the gap between the rich and the poor of a country. A significant negative relationship between standard of living and wealth disparity has the potential to show the benefits of a more social economic system. Results show a discrepancy between developing nations and developed nations, indicating some reason as to why wealth disparity is significant in the latter but not the former.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

## **Does the Legalization of Medical Marijuana Affect Society?**

**Michael Murphy**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

The field that I am studying in is Political Science in social sciences and how does medical marijuana affect society in certain ways. I believe that medical marijuana does not affect society in any negative ways. Research done by others has found that marijuana does not affect the health of humans and also the economy. The economy actually has improved with the sale of medical marijuana. The sales tax from medical marijuana has help out with the states that do have it. The methodology that I will be pursuing is a cross-sectional study but with a set up a dichotomous design. Data is collected from other studies and data sites. The research that I have done should be able knowledgeable to the field for various reasons. The data collected is valid because the researchers are themselves are valid. The field will be able to validate this research because the United States that is the Unit of analysis has this as an issue in their country with the federal government. This research may be able to help the argument of medical marijuana its affect on society.

**Presentation Type and Session:** Poster VIII

## **During the 17th Century How Tobacco Cultivation Settled the Chesapeake Bay**

**Ryan Samuels**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

Settlement of the Chesapeake Bay began on the banks of the deep, wide rivers leading off the bay. This allowed planters to directly load their crops onto vessels. The abundance of creeks and other lesser bodies of water made the region easily navigable. A sweeter strain of tobacco, introduced by John Rolfe in 1609, led to the

emergence of a new cash crop in the Chesapeake Bay. A strain of tobacco was already native to the region; however, this particular strain was disliked by the English because of its bitterness. Tobacco cultivation in the 17th century was laborious, and the soil was often exhausted quickly. Furthermore, tobacco cultivation requires several acres of land, which would facilitate local isolation; neighbors would often be located miles from one another. Outside pressures, such as the church and politics worked to overcome local isolation. Because of tobacco production, a trading network was created, which would continue shaping interpersonal relationships of the region. The success of tobacco began the trend of private land ownership. Because of the increased production of tobacco, residents began moving out of villages and into the countryside, allowing for further cultivation of tobacco. As tobacco exportation began to increase, the Chesapeake Bay began the transformation from a forest to self-contained community.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

## **Educational Outcomes and Institutional Arrangements: Public, Private, Home and Charter Schools Battle for Supremacy**

**Suzanne Jacobs**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

The educational system in the United States is undergoing a significant reformation as an explosion of innovative instructional arrangements has blossomed along side the traditional public and private school models. The expansion of both home schooling and charter schools has been unprecedented in the last two decades as dissatisfaction with our public school system has grown throughout the populace. Only recently has there developed outcome measures that assess the impact of these new innovations on the learning provided our students. It is at this point that we can add statistical analysis to the antidotal evidence of both success and failure. My research examines the educational outcomes of students throughout New York State with an emphasis on their schooling institution. I hypothesize that even with the expansion of private, home and charter schools, when other factors are properly included, public schools students still out perform others in the basic measurements of educational outcomes. My research will show this result through a statistical analysis of a large dataset of high school graduation rates that controls for important intervening factors. Discussion of these results and what steps can be taken to increase the educational

**Presentation Type and Session:** Poster VIII

## **Energy is the New Foreign Policy**

**Kyle Newman**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

Countries around the world are making moves towards creating sustainable sources energy, in which they can fulfill their national energy needs with energy produced inside the country. This is reshaping foreign policy globally, policies that once were constructed to ensure open trading of energy sources are being reevaluated

now. Studies are showing a shift away from current production of hydrocarbon-based fuel and a shift toward more efficient and abundant forms of energy such as nuclear power, natural gas, and renewable sources of energy. This shift has reduced the influence some nations may have once had in their foreign policy negotiations. This shift toward self-sustainable energy for nations is shaping the way future foreign policy will be established. Main factors such as energy demand and energy created are the first steps to see how self-sufficient a nation is, and then one must look at how the nation's government is structured and how they obtain their energy to understand current foreign policy. Nations are currently in the stages of developing and deploying these new sources of energy. No one nation is ready to meet its energy demand from self-sustainable sources of energy, which is why there are new doors opening up between countries.

**Presentation Type and Session:** Poster VII

### **Environmental Racism and its Impacts on the Refugee Population in Buffalo, New York**

**Sophie Herrman**, GEG 430: Senior Thesis

Faculty Mentor: Professor Vida Vanchan, Geography / Planning

There is substantial research to show the unequal distribution of environmental hazards among races in the United States, with Buffalo, New York (NY) being no exception to this trend. Minority groups tend to experience these hazards more frequently and with greater health and safety consequences than the rest of the population, a phenomenon referred to as environmental racism. This study is designed to gain insights into the challenges faced by refugees resettling in areas designated by the United States Environmental Protection Agency (EPA) as hazardous waste sites in Buffalo, NY. This is defined by the EPA as a "location where hazardous wastes are stored, treated, incinerated, or otherwise disposed." By creating a layered map using ESRI ArcMap, areas concentrated with refugee groups will be compared to these EPA designated sites. This will involve collecting geographic data showing the areas of each, and then comparing it to existing data of the same nature from other minority groups. This will provide an opportunity to potentially demonstrate how environmental racism affects refugees differently from other minority groups. Ultimately, this study seeks to better understand the unequal distribution of environmental racism in Buffalo, NY.

**Presentation Type and Session:** Poster I

### **European Influence on the Culture of Plains Indian Tribes and Their Lasting Effects**

**Joseph Reed**, ANT 499: Spanish-Indigenous Contact

Faculty Mentor: Professor Lisa Marie Anselmi, Anthropology

The immigration of European settlers from England, Spain, France, Russia, Sweden and the Netherlands during the early 1500s

set off a series of consequences that washed like a wave across the entire continent. The contact between Native American tribes and European cultures changed life so much that scholars divide human history in the Americas into the Pre-contact Period and the Post-contact Period, which began in the 16th century. These explorers and settlers came looking for various resources but almost immediately began to impose European values upon Native Americans. European usage of metal tools altered Indian ways of life, especially the rifle. Additionally, the introduction of horses to Plains tribes revolutionized entire cultures. Some tribes abandoned a relatively sedentary life style to become horse nomads and hunting became more important for most tribes as ranges were expanded. More frequent contact with distant tribes increased the likelihood of competition and warfare. Tribes with the greatest access to horses and firearms could expand their territory and power at the expense of those tribes with fewer guns and horses. This resulted in an ever fluctuating balance of power among the Plains tribes and formed a cultural dependency for European goods. The longer this dependency lasted, the more evident was the level of cultural change among the Plains tribes.

**Presentation Type and Session:** Poster VIII

### **An Exploratory Analysis on Socio-Economic Outcomes of Land Use and Sprawl**

**Sarah Caputi**, PLN 430: Senior Thesis

Faculty Mentor: Professor Jason Knight, Urban and Regional Planning

Within the last half-century, urban planners and policy makers have been attempting to deal with the negative effects that sprawled growth has caused across the United States. Sprawled growth is rapid, low-density development that generally occurs in less developed, less regulated areas outside of the urban core. Problems resulting from sprawl include negative environmental impacts, harms to human health, economic decline, de facto segregation and exclusion, fiscal inefficiencies, and resources inefficiencies. Essentially, sprawl is harmful and unsustainable. Various planning procedures have been proposed and implemented to address these issues, but sprawl remains a huge problem. Nevertheless, some literature suggests that regional planning may help address these problems by coordinating cooperative planning between the local municipalities within a multi-county region. In an attempt to test the claim that regional planning can positively affect a region's ability to address the consequences or causes of sprawl, this case study will analyze quantitative and qualitative data from three separate regions across New York State. Looking at the Buffalo-Niagara Region (Buffalo), the Genesee/Finger Lakes Region (Rochester), and the Central New York Region (Syracuse) this study explores how socio-economic and land use patterns differ between regions with differing regional regimes.

**Presentation Type and Session:** Poster VIII



## **External Factors that Contribute to Low Body Self-Esteem in Female Adolescent College Students**

**Riannon Banas, Christine Obringer, and Kayla Lanzalaco,**  
Psychology Club Research Team

Faculty Mentors: Professor Jean DiPirro, Psychology and Professor Robert Delprino, Psychology

Research indicates that viewing an attractive woman negatively alters one's perception of their own body. The proposed study is designed to examine the influence on body self-esteem of being in the presence of a photograph of an attractive slim woman versus a control photograph. Participants will be 50 female students, 18-25 years old, who attend SUNY Buffalo State. Participants will be randomly assigned to one of two groups: an experimental group or a control group. Body self-esteem will be measured using the Cooper et al. (1986) self-report Body Shape Questionnaire (BSQ-34) in a room where a picture of an attractive slim woman (experimental group) or a control picture (control group) is saliently displayed. The questionnaire is designed to measure different levels of body self-esteem and satisfaction using a Likert-type scale. Results from this study will indicate whether the presence of a slim attractive female will negatively affect one's attitude towards their body; such information will be important in advancing our understanding of how body-esteem is modulated by social/external factors.

**Presentation Type and Session:** Poster VI

## **Eye Tracker and Art Perception: Do Art Students See Better?**

**Kathryn Przybysz,** Psychology and **Sonille Liburd,** Psychology  
Faculty Mentors: Professor Howard Reid, Psychology, Professor Stephani Foraker, Psychology, and Professor Lin Jiang, Fine Arts

Our study is using an eye tracker apparatus to compare the perception of drawings by art students and non-art students. Specifically, we are tracking the eye movements of these students while they view various line drawings. Half of the drawings include incorrect perspective and shadow. The goal of the study is to determine whether there is a difference in where the students focus. There are twelve pairs of drawings; each pair includes one correct drawing and one drawing with an error in perspective or shadowing. In addition, each subject completes a brief questionnaire that probes the amount of art experience they have. At the conclusion of the study, we also present the pairs of drawings side-by-side and ask the subjects to select the correct drawing. Our dependent variables are: the amount of time spent looking at the error in each drawing, the amount of time it takes the student to initially notice the error, and the total percentage of time looking at the error compared to the rest of the drawing. Our hypothesis is that students with experience in drawing or painting will notice the errors more quickly, will focus on them longer, and will spend more time overall looking at the errors compared to the non-art students. Data are still being collected, but thus far, the trends are as we predicted.

**Presentation Type and Session:** Poster V

## **Fear of Infanticide Among Captive Western Lowland Gorillas in the Buffalo Zoo**

**Chelsea Dashnaw,** ANT 322: Research Methods in Primatology  
Faculty Mentor: Professor Julie Wieczkowski, Anthropology

Infanticide is a concern among western lowland gorillas (Gorilla gorilla gorilla) in the wild. The Buffalo Zoo's gorilla group consists of five individuals: the silverback Koga, an adult female Sidney with a juvenile daughter Amari, and an adult female Lily with an infant Baby Gorilla. In an area where Baby Gorilla is not exposed to threats of infanticide outside of the group, does Lily still seek protection from the silverback due to fear of infanticide? I predicted that Baby Gorilla's mother will spend more time in proximity to the silverback than the other mother, whose daughter is already a juvenile. I conducted 30-minute focal animal samples on the two adult females, recording their behavior and proximity to the silverback every minute. I also conducted 30-minute focal samples on the silverback, recording his proximity to all other gorillas every minute. I collected 30 hours of data between March 2 and April 12, 2014. Preliminary results show that the mother and her infant spend more time in proximity to the silverback than other individuals do. Additional analyses will determine if the mothers engage in different behaviors when they are in proximity to the silverback versus when they are not.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

## **Female Genital Mutliation**

**Katherine Lee,** ANT 305: Peoples of Africa  
Faculty Mentor: Professor Lisa Marie Anselmi, Anthropology

Circumcision is a religious or cultural ritual for many Jewish and Islamic families in the western world as well as for certain indigenous people in Africa and Australia. Circumcision can also be a matter of family tradition, religious beliefs, personal hygiene, or preventive health care and may be performed at home or in a hospital. When we think of circumcision, we think of men and not women. Female circumcision also referred to as Female Genital Mutilation (FGM), is the cutting away of the external genitalia; this ritual is used to mark the transition from young girl to woman, and prepare her for marriage. While the majority of cases of FGM are carried out in Africa, parts of the Middle East, India, and amongst Muslim populations in Malaysia and Indonesia. Women also still practice FGM in Canada, New Zealand, the United States, Australia, and Europe. The procedure is traditionally carried out by an older woman with no medical training and may be performed in a cattle barn, or mud hut, but never a sterile environment. Antiseptic treatments are not generally used, and the practice is usually carried out using expedient tools. The young ladies are often tricked into this procedure that is passed down by the mothers, tribal women, and tradition. Complications of FGM include severe pain, shock, infection, and urine retention. Injury to adjacent tissues, damage to the reproductive system, psychological issues, and DEATH!!! By



showing the harm that can arise from this tradition we can address the injustice faced by women.

**Presentation Type and Session:** Poster II

### **From Family Men to Ferocious Beasts: The Transformative Power of the "Green Fairy" on Frenchmen in the Late Nineteenth Century**

**Daniel Flynn**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

On August 28, 1905, Swiss farmer Jean Lanfray, left his farmhouse in Commugny, a small village in Vaud, Switzerland, after drinking his morning shot of absinthe, a strong green-colored liqueur distilled from a bouquet of herbs including anise, fennel, and wormwood. When he returned home, he savagely murdered his pregnant wife and two daughters in an alcoholic rage. The newspapers of the day claimed Lanfray was a victim of "absinthism," an illness that allegedly caused hallucinations, epileptic seizures, and madness. In actuality, Lanfray was a full-blown alcoholic who consumed up to five liters of wine per day. The two ounces of absinthe he drank the day of the murders, however, was blamed for his shocking behavior. Absinthe originated as a medicinal tonic before it was discovered by Bohemian artists living in France whom popularized the liqueur by claiming it could alter one's consciousness. Some artists even claimed to be possessed by the spirit of absinthe, the muse known as the "Green Fairy." By the turn of the twentieth century, absinthe was blamed by Conservatives for most of what ailed French society during a time when alcoholism was epidemic. Fearing the subversive nature of the "Green Fairy" as a mind-altering substance, Conservatives in France opposed absinthe because it was favored by the dregs of society as a means to escape reality, subvert societal norms, and undermine the traditional patriarchy of France.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

### **Gay Marriage Covered Under Due Process and Equal Protection?**

**Leonel Parada**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci Political Science

Equal Protection and Due Process clauses in the United States Constitution do protect gay rights. The Supreme Court has been hearing various cases that deal with gay rights issue for over three decades and Justices Kennedy, Ginsburg, and Scalia have written important majority opinions, Concurrences and dissents of cases *Romer v. Evans*, *Lawrence v. Texas* and *Windsor v. United States*. The Windsor Decision removed the provision in the DOMA law that allowed the federal government to classify marriage as a union between a man and women. Under the DOMA law there was another

Amendment to the bill that allowed the states to classify marriage however they see fit and don't have to recognize other states marriage laws under the DOMA law. LGBT organizations have the precedents they need to tackle laws in states that don't recognize gay marriage to remove the other provision in the DOMA law.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

### **Helicopter Parenting and Adjustment to College**

**Veronica Darlow**, PSY 499: Independent Study

Faculty Mentors: Professor Jill Norvilitis, Psychology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

This study focuses on the role of helicopter parenting and its effects on anxiety, depression, self efficacy and social adjustment to college. It is hypothesized that students with parents who are overly controlling will have higher levels of anxiety and depression. Also, students with overbearing parents will have a harder time adjusting to college and a harder time thinking independently. The extra pressure placed on them by their parents will be related to students being unprepared for the challenges of adulthood, such as being organized and being able to handle problems on their own. On the other hand, students with parents who are not overly protective will be more self sufficient. Students are also being asked about drug and substance abuse to see if parenting plays a factor in that aspect. Data are currently being collected from Buffalo State students and the results will be presented.

**Presentation Type and Session:** Poster V

### **Hey! Take a Look in the Mirror: The Magnitude of Intrapersonal Skills in College**

**Naomi Skarupinski**, Individualized Studies

Faculty Mentor: Professor Jo Yudess, Creative Studies

Developing interpersonal skills has to do with learning how to work well with others; developing intrapersonal skills has to do with learning how to work well with yourself. Getting to know yourself before you get to know anyone else is the basic idea behind intrapersonal skill development. At the collegiate level, students are at the point of their lives in which they are truly figuring out who they are and who they want to be. A secure sense of self, and knowing what their strengths and weaknesses are, leads to a more stable path of success. Analyzing how they function in certain situations allows for changes toward quick thinking, creative problem solving, and confidence. In this session, participants will learn and practice three of the most critical intrapersonal skills for college students. Exercises working with values, self-regulation, and stress management will allow participants to reflect on changes they may make to improve their college experiences.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

## **How and Why do Ethnic Minorities Vote**

**Milagros Bonifacio**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

The electoral and non-electoral processes of the United States are assumed to be available to all through mobilizing institutions. Socioeconomic status though affects how mobilizing institutions actually reach certain people. Voter turnout numbers from ANES will allow me to see the amount of ethnic minorities that actually voted and significance-measuring regressions will allow me to see the statistical significance of the above named factors and others. The strength between socioeconomic ties and voter turnout are what are going to be most importance, because these are what determine the attitude that minorities have towards the government. My research will bring to light more factors about cynicism and civic engagement- through Socioeconomic Models, Political Exposure Models and the Resource Model of Participation. The process of involving those who have been historically marginalized is important to what this Democracy is and should be a priority to in mobilizing factors. Socioeconomic status, political socialization, electoral and non-electoral participation, locale, partisanship and civic engagement- alongside cynicism are the most important factors in determining whether why and how ethnic minorities register to vote and vote.

**Presentation Type and Session:** Poster V

## **How to Clean Dirty Data**

**Jeff Oyo**, Economics

Faculty Mentors: Professor Theodore Byrley, Economics and Finance, Dr. Sandra Washington, Director, McNair Scholars Program, and Ms. Jennifer Johnson, McNair Scholars Program

This paper identifies specific procedures for locating what might be data errors in a longitudinal data set, and finding solutions for such occurrences. Through the Education Management Information System (EMIS), the Ohio Department of Education (ODE) collects data from public schools in the state of Ohio on a number of variables. The Center for Human Resource Research (CHRR) has created a data team to reorganize the data tables, so it may be used for future research. Primarily, this paper will explain what is being done with the data. In turn, I will develop a procedure outlining the steps to addressing and fixing inconsistencies in data tables. The variables for which the ODE collects data are listed and defined annually in the EMIS Manuals. Both the variable names used in the EMIS Manuals and the precise definitions of these variables evolve over time. It is very likely that errors are present throughout the data tables. For example, one identification number that appears to represent the same student has several different demographics. As a result, there appears to be a number of cases where there is no agreement on gender, race, and date of birth for what is supposed to be a unique observation. Establishing a preliminary variable to address inconsistencies is a likely solution to such problems. I will

also discuss the importance of documentation to support data sets that evolve over reporting periods. Finally, I will identify patterns in the data, and compose a procedure on how to clean raw data sets. This will yield a series of decision rules to be used to program codes to address such issues in a data set. Numeric variables provide a unique challenge in the data cleansing process. Because most numeric variables contain values that are continuous rather than categorical, we need to approach the problem of identification and correction in a different way. There are many procedures that can be used to check numeric variables. Data is collected and stored in a database. Before the analysis begins, the data must be checked for accuracy. Each variable must have valid values and any duplicates must be removed. There are some general methods that can be used to check the data and make sure that the data is as accurate as possible.

**Presentation Type and Session:** Poster VII

## **Human Trafficking: Distinguishing Destination Countries**

**Lynise James**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

Involuntary servitude hierarchies consist of servants and masters. Modern day slaves are now being trafficked in and out of countries in order to commit illegal sexual exploits and forced labor. Trying to identify the vulnerable aggregate for human trafficking development is one of the key components of lessening the blow of human trafficking. This falls on the question itself as to what increases the role of human trafficking, or more specifically to my research; the imported trafficked victims. If we knew each country's exact involvement it would diminish the continuance of locating specific trafficking rings. As different governments around the world change their laws about prostitution and stripping, it helps us conclude that trafficking is more rampant in countries where prostitution is legal, and the opposite when illegal. There are also the studies that show data on prostitution being legal but the procuring of actors illegal. Researchers Aghatise (2004) and Siegel (2009) both discuss the "brothel law" in Europe which is a legislation made by certain countries legalizing brothels. They described them as undermining the idea of safety, because behind brothels there is the prospect of illegal human trafficking where slaves are brought to work "legally". Some other results suggest that if a government were to ban the intentional criminal the act of buying, selling and or promoting sex, it will reduce the amount of human trafficking in a country.

**Presentation Type and Session:** Poster VIII

## Hybrid Principles of Macroeconomics Course

**Samantha Stauch, Anthony Appiani, Maya Foose, Esther Ekong, and Ryan Winegarde**, ECO 201: Principles of Macroeconomics

Faculty Mentor: Professor William Ganley, Economics and Finance

In the Principles of Macroeconomics hybrid course (Economics 201) undergraduate Teaching Assistants are used in a variety of ways throughout the course. They each have their own group of students within the course and are available to assist the students in the learning process. The hybrid course has a significant (approximately fifty percent) on-line components through an instructional package named CONNECT, produced and published by McGraw-Hill. The undergraduates TAs create weekly assignments for the class; monitor their groups' performance on the on-line activities of their respective teams. Also, the Teaching Assistants hold office hours three times a week for one-on-one tutoring for students in the course. In addition the Teaching Assistants hold review sessions before all of the in-class examinations given by the professor. The Teaching Assistants are also responsible for the attendance process and record-keeping system as well. The Teaching Assistants aid the instructor by recording all of the exam results, the attendance records and the results of the on-line assignments onto Blackboard, the online component of Buffalo State. Additionally, the undergraduate Teaching Assistants benefit from the peer-to-peer instruction they provide to students. It gives them a new experience in the learning process. The Teaching Assistants gain new perspectives on learning challenges for students. In addition they learn to take on new responsibilities in the assistance they provide to students, and gain a deeper sense of the structure of learning in a unique course setting.

**Presentation Type and Session:** Poster V

## The Impact of Regulations on Cannabis Consumption

**Ohanes Kalayjian**, Political Science

Faculty Mentor: Professor Mayra Velez-Serrano, Political Science

Are criminal legal restrictions on cannabis usage effective in preventing or decreasing drug usage? From the year 1996 to 2012 legal restrictions on cannabis have become more liberalized in the United States. The current literature in this topic fails to understand variation between and within states on state regulation and its possible effect. Research into this issue is limited in both scope and accuracy, most statistics rely on voluntary admission of usage and the threat of legal ramifications could deter some from reporting their usage accurately. Data used for this work was collected from the Substance Abuse and Mental Health Services Administration (SAMHSA). I expected to show that liberalized drug laws would not produce a significant increase in reported consumption the rationale was that while adult consumption may increase youth consumption will likely go down because legal models have regulations like age restrictions which are not found in the black market. However,

the findings indicated that as regulations are liberalized, reported consumption increases. Another finding of note was that perception of risk was the strongest predictor of reported consumption. Finally the data revealed an unexpected result that was that as time passes perception of risk decreases regardless of the severity of the laws in place. This observation has yet to be addressed in the current literature and points to other factors determining both perception of risk and consumption.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

## Interpersonal Space on the Road: A Driver Space Study

**Richmond Wills**, Psychology, **Brendan Roman**, Psychology, and **Kristen Corbran**, Psychology

Faculty Mentor: Professor Dwight Hennessy, Psychology

What factors affect interpersonal distance on the road from driver to driver? In this study we investigate the relationship between locus of control, stress and other personality factors and their effects on a driver's interpersonal distance. Interpersonal distance, or personal space, has been defined as the distance component of interpersonal relations. This means that personal space serves as an approximate area around a person that causes a certain level of discomfort when breached. Methods used to collect data involved recruiting college students from various psychology classes who initially completed a battery to measure personality factors. Immediately afterwards, they viewed two videos filmed in real traffic conditions as one vehicle approached a second vehicle from behind on a four lane divided highway with a speed limit of 60 mph. The first video was shot through the windshield of the vehicle approaching the second vehicle to measure front space preference. The second video was filmed through the rear-view mirror of the vehicle being approached to measure rear space preference. The "stop method" was used where participants stopped each video at the distance that they would generally feel most comfortable when they drive. Distances were then calculated to represent indirect indicators of preferred driver space in front of and behind the vehicle. Preliminary analyses suggest that personality factors (Locus of Control and Stress) are related to greater desire for driver space. What can be expected at our poster presentation is a better understanding of the relationship between personality factors and a driver's personal space preferences.

**Presentation Type and Session:** Poster VIII

## Lackawanna: A Yemeni American Suburb

**Kaitlyn Parrino**, Social Studies Education

Faculty Mentor: Professor Susan Randaccio, History and Social Studies Education

The growing population of Yemeni immigrants in the Buffalo area, particularly in Lackawanna, is changing the makeup of the community. The immigrants face numerous challenges like most



immigrants such as language barriers, economic opportunity, and cultural behavior differences. These challenges make it extremely difficult to assimilate/adapt to the American culture, which has caused the Yemeni people to create a transplanted community of their own. Central research questions include: population data- how large is the community, immigration statistics over the last 25 years, why Buffalo was chosen as a place to settle, what has been their educational and employment experience since arrival. The goal was to develop a fuller understanding of the immigration patterns, as well as the cultural, social and economic issues of integration and assimilation that this immigrant community has faced. This type of historical research has been conducted, and much has been published, on other immigrant communities that have arrived in Buffalo over the last century, including Irish, Italian, German, and Polish immigrant communities. Little has been written about more recent immigrant populations such as those from Burma and Yemen, which are changing the face of the neighborhoods where they settle.

**Presentation Type and Session:** Poster II

### **Lesbian-Identity and the Male Gaze: A Study of Exotic Dancers**

**Aileen McCluskey**, Sociology

Faculty Mentor: Professor Staci Newmahr, Sociology

I examined the ways in which a lesbian exotic dancer, Alex, performs gender differently inside and outside of the exotic dance club. These performances are closely linked to how she relates to and understands her identity. Alex believes her authentic self is outside of the club and views her time inside the club as a performance. This dichotomy is particularly interesting because Alex performs gender in starkly different ways inside and outside the club. I will be exploring how she manages these different performances and their relationship to her identity through the work of Erving Goffman and Judith Butler, specifically their work on the self, identity, dramaturgy and stigma. In this presentation I will also be looking at what, if any, benefit Alex gains from having spaces to perform gender in such contrasting ways. The case study is based on extensive open-ended interviewing with Alex about her time working at the exotic dance club, sexual orientation and general life experiences and history.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

### **Living Situation and Academic Success**

**Hannah Bronstein** and **Sarah Lippert**, PSY 499: Independent Study

Faculty Mentors: Professor Howard Reid, Psychology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Buffalo State, the only urban comprehensive college in the SUNY system, has a large proportion of commuter as well as residential students. While previous research has identified numerous

predictors of student academic success, relatively little research has differentiated between success in commuter and residential students. The present questionnaire expands upon previous research by examining a number of emotional and social variables to determine whether they equally influence both groups of students. Among these variables are stress, depression, anxiety, social involvement, extraversion, and alcohol consumption.

**Presentation Type and Session:** Poster V

### **Making the Connection between Research and Application**

**Christopher Miller, Amanda Schiedel, Adam Milton**, and members of PSY 367: Organizational Behavior

Faculty Mentor: Professor Robert Delprino, Psychology

Organizational Behavior (OB) as a field of study is focused on the behavior, attitudes and performance of people in organizations. OB can be viewed as a sub-section of Industrial/Organizational Psychology that is recognized as one of the applied areas of psychology by the American Psychological Association. As part of the course on OB, students acquire skills and tools that will allow them to be effective participants in any organization in which they are a member. However there is a great deal of science that has been conducted to support the applied aspects of this field. This aspect of the field may be lost by students. To more fully appreciate the research that goes into the development of applications, a group of students enrolled in a section of PSY367, Organizational Behavior, participated in the development, data collection and interpretation of results of a research study created by the class on leadership. Leadership was a topic identified by the class as a topic of interest and also was germane to the area of study. By going through this experience students gained greater insight into the science practitioner model and how both complement each other. In addition they gained an appreciation of the work required to develop a quality research study as well as the consequences of making assertions based on poorly formalized research.

**Presentation Type and Session:** Poster VI

### **Mathematicalizing a "Mathematical" Definition of Creativity**

**Michael Filipski**, Mathematics

Faculty Mentor: Professor Jo Yudess, International Center for Studies in Creativity

The definition of creativity, debated for years by many researchers, is questioned even today. And the idea of connecting creativity and mathematics might also be a cause for debate by some. Others, such as Sriraman (2004), believe that creativity in mathematics is what enables the field to grow. Dr. Ruth Noller, an early important contributor to the study of creativity at Buffalo State, was also a teacher of mathematics who proposed a definition of creativity using mathematical terminology,  $C = f(K, I, E)$ ,



saying that “Creativity is a function of attitude toward knowledge, imagination and evaluation.” However, Dr. Noller made it clear that this was not meant to be a true mathematical representation, knowing that many would not understand it, but wanting a model to help students remember the elements she felt were keys to creativity. In this session, the words representing her definition will be used to demonstrate a fully mathematical representation with explanations of real numbers, variables and the mathematical term “function” to see how it would actually look. Going further, additional ways of expressing creativity mathematically, including other variables and some definitions from other researchers will be demonstrated.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

### **Media Exposure, Cynicism and Political Participation: Does Knowing More Suggest You Do Less**

**Sean O'Connor**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

Recent advancements in technology and information availability have changed knowledge on the sources of Political Cynicism drastically. This study is intended to find, at least in part, the ultimate cause and effect of political cynicism on the American Electorate and whether the increased access to information via the Internet plays any role. A survey given to American voters was used to test three hypotheses: (1) increased use of the internet media sources is positively related to increased cynicism among voters, (2) perceived lower Political Efficacy would be negatively related to political cynicism, (3) distrust of media sources and portrayal of politicians and politics increases voter cynicism, by measuring Media Use from various sources, Media Exposure, Trust in Media Outlets, Trust in Political Institutions, and perceived Political Self-Efficacy.

**Presentation Type and Session:** Poster VI

### **Memory and Multitasking**

**Jennifer Hacker**, Psychology

Faculty Mentor: Professor Stephani Foraker, Psychology

Hand gestures play an important role in how we think and communicate ideas to others, and these gestures require the use of working memory. Other tasks, such as describing object locations or reading a sentence, also require the use of working memory. Previous research demonstrates that the use of hand gestures facilitates working memory capacity during a verbal task (Cook et al., 2010; Goldin-Meadow et al., 2001), which could suggest that gesturing decreases cognitive load during verbal encoding and/or recall. However, gesturing effects on working memory during a visual-spatial task are mixed. This study is designed to investigate whether gesturing during verbal and visual-spatial tasks helps or hinders memory recall, and to observe whether an individual's independent working memory capacity predicts his/her performance on these

recall tasks. Participants completed an initial working memory task that was either verbal (letters) or visual-spatial (squares) in nature. They were then presented with verbal (letters) or visual-spatial (dot pattern) stimuli to remember while describing a picture. Some trials of the picture description task allowed for hand gestures while gesturing was restricted in others. We hypothesize that gesturing will interfere with working memory during visual-spatial tasks and facilitate memory recall during verbal tasks. We also hypothesize that participants' independent working memory scores will serve as predictors for their performance on these tasks, where higher working memory capacities predict higher scores on subsequent tasks. Data collection is currently underway. Overall, results of this study could provide insight on how gesturing may help or hinder our memory.

**Presentation Type and Session:** Poster VII

### **Motherly Love: Social Interactions between Mother and Infant in Western Lowland Gorillas and Saki Monkeys**

**Erin Baccari**, ANT 322: Research Methods in Primatology

Faculty Mentor: Professor Julie Wiczowski, Anthropology

Among all primate species, interbirth intervals and life history traits differ based on a range of variables, including food availability, number of offspring in the litter, and maternal styles of primates. The western lowland gorilla (*Gorilla gorilla gorilla*) has an interbirth interval of 4.2 years (Stoinski et al., 2013), while the white-faced saki (*Pithecia pithecia*) has an interbirth interval of ~1.8 years (Norconck, 2006). In addition, gorillas have a slow life history. This indicates that gorilla infants may spend more time in social contact with their mothers. Both gorillas and sakis are housed at the Buffalo Zoo, and both groups include a mother and her ~3 year old infant. Focal samples and ad lib data were recorded. Thirty-minute focal samples on the two juveniles were collected. Behavior of the focal animal as well as the nearest neighbor within five feet was recorded every minute. Thirty hours of data were collected between March 2 and April 5. Equal number of hours of data was collected on each juvenile. Preliminary results suggest that the gorilla infant spends more time in social contact with its mother than does the saki infant. This may be due to timing of life history and development.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

### **Olympic Hockey and the Media**

**Brayton Wilson**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor Jack Karlis, Communication and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

The purpose of this research is to observe the framing of men's and women's ice hockey during the Sochi Winter Olympics. With sources from NBC, CBS, ABC, CNN, MSNBC, and FOX News, we look

at how much and how often Olympic hockey was talked about and how it was discussed. Using qualitative content analysis, we have acquired 510 broadcast transcripts from these six networks to get the information. With the transcripts, we will look to frame what the networks covered in Olympic hockey. One thing that is looked to do is to frame is how much the networks talked about the 1980 US Hockey team and the miraculous win over the Soviet Union. The reason for this project is to bring to light how important Olympic hockey is in the media and how the major networks cover the games.

**Presentation Type and Session:** Poster III

## **Origins of the Muslim Brotherhood**

**Hakeem Jackson**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor York Norman, History and Social Studies Education and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

The Muslim Brotherhood is Egypt's oldest and largest Islamic organization. This religious organization has caused a lot of controversy throughout the Arab world, especially among Sunni Muslims. Whatever people may think about this group they are far different from the more radical Islamic groups (such as Hezbollah, Al Qaeda, and the Taliban). Unlike these groups, the Muslim Brotherhood calls for peace in the Middle East, and they are willing to adapt to the new modern politics that takes place in the region. Up until recent years the Muslim Brotherhood has not been allowed to participate in Egyptian politics, and till this day it is a constant struggle between them and the conservative Egyptian army. Some of the sources I used to support my evidence are from The New York Times, The Council of Foreign Relations, and The Modern Middle East by Akram Khater.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

## **The Perception of an Epidemic: The Effect of the Perceived Crack Epidemic on Los Angeles Crime and Violence between 1982-1992**

**Zachery Hyland**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

One of the worst epidemics the United States has ever encountered had nothing to do with communicable diseases. During the 1980s, America was going through a period of national disarray. President Ronald Reagan was elected to his first term in 1980 taking on double-digit inflation, the spread of communism, and a rival in the Soviet Union. In 1982, President Reagan furthered President Nixon's declaration of war on drugs by declaring illicit drugs to be a threat to U.S. national security. In the coming years the expansion of powder cocaine to a highly addictive crack form would sweep across the nation, originating in California. The spread of crack

cocaine had a direct effect on the city of Los Angeles, both related and unrelated to drug life. The perception of a crack "epidemic" contributed to a rise in crime and violence in the city. Despite its supposed nature, the "epidemic" brought a mass of negative changes to Los Angeles that were real. Crack cocaine lead California, and more specifically Los Angeles, into a drug-fueled decade of turmoil. Provided in this research will be violent crime rates in Los Angeles from 1960-2007, Los Angeles Uniform Crime Reports from 1985-2005, and Juvenile Justice Reform Initiatives from 1994-1996. Primary sources will include local newspaper articles and reports in Los Angeles from the early 1980s, until the early 1990s about the alleged crack "epidemic". Primary sources will also include interviews from Los Angeles residents during the "epidemic" providing a detailed look at life during the researched time period.

**Presentation Type and Session:** Poster VI

## **Personality and Facebook: What Motivates Social Media Use**

**Taylor Chavanne**, HON 400: Muriel A. Howard Honors Colloquium

Faculty Mentors: Professor Jurgis Karuza Jr., Psychology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

Social Media has become a large influence in society's everyday life. As of March 2013, there are currently 1.11 billion Facebook users worldwide. Recent research has been conducted to determine what motivates people to use social media. The goal of this study is to determine whether or not personality plays a role in how we use Facebook. The study will particularly focus on the relationship between introversion and extraversion, as defined by the Big Five Factor Theory, and a person's Facebook practices. Data will be collected from a questionnaire to be administered in psychology classes to determine whether a person is introverted or extraverted as well as gather information about their online practices. The results of this study may provide valuable information on how one aspect of our personalities affects our social media use.

**Presentation Type and Session:** Poster VII

## **Personality Predictors of Driver Personal Space Preference**

**Abby Criswell**, Psychology

Faculty Mentor: Professor Dwight Hennessy, Psychology

A driver's personal space is best measured by psychological "preference" rather than exact distances. This is due largely to the fact that personal space is an invisible boundary that is rapidly moving and people are rather poor at judging distance (e.g. we typically think people are closer to us and that we are typically farther from others than we actually are). Past events can trigger certain personality traits while driving, which in turn can determine the distance at which a person might feel comfortable. This study

will be useful in understanding general driver tendencies and the way personality can predict that distancing. In this study, participants were recruited from classes where they were first asked to complete a questionnaire on personality and driving type, and then they were asked to sit behind the steering wheel in a traffic simulator and watch two short real life driving videos: one from the front view through the windshield and one from the rear view mirror. They were told to stop their vehicle when they felt at the point they would do so in real driving. The results supported that driver fatigue was related to less front driver space preference and hazard monitoring was related to greater rear driver space preference. It was confirmed that personality does impact personal driving space. Those high in hazard monitoring preferred a larger distance between their car and the car behind them.

**Presentation Type and Session:** Poster V

### **Population, Population Density, Access to Medical Care, and Suicide Rates: A Test of Durkheim's Theory with the County Data of New York State**

**Adonis Kernen**, Sociology

Faculty Mentors: Professor Jie Zhang, Sociology and Professor Thomas Weinberg, Sociology

Suicide is a persistent social problem in all societies. According to certain schools of thought, it is correlated with mental illness, which may result from social problems and may be treated with medical care. Although the prevalence of suicide within the State of New York is the lowest among all the 50 states in our country, a geographical survey indicates that there are certain areas in which suicide is more prevalent than others. Utilizing a quantitative approach with data from the National Center for Disease Control (CDC), and New York State health records, the study posits the following hypotheses. First, the prevalence of suicide within the 62 counties correlates with "distance of living" or "social isolation." The smaller the number of people living in every square mile, the higher the risk of suicide for the residents living in the county(-ies), which is the unit of analysis. Second, the prevalence of suicide within the counties correlates with access to health care facilities, such as clinics and hospitals. The farther the health care facilities are, the higher the suicide rates in the area.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

### **Raising a Criminal: Patterns in the Early Life of Serial Killers**

**Aveary Menze**, FOR 122: Scientific Criminal Evidence Analysis

Faculty Mentors: Professor Anthony Epps, Chemistry and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

For nearly a century, the topic of serial killers has both horrified and intrigued everyone from the general public to the criminal justice community. One of the most common questions

is: "why"? What factors within one's upbringing or traits within their personality or perhaps even their genetic make-up, brings an individual to disregard the importance of life and the fear of punishment to the point of committing murders? In this study, the focus will be on the early to adolescent lives of serial killers in the United States. I will examine notoriously known high profile cases such as Jeffrey Dahmer and Charles Manson; I will study relationship patterns between family members, early drug abuse, and crimes leading up to their first known murder. This study will also discuss the "homicide triad", a pattern of arson, bed-wetting, and cruelty to animals, and why this pattern is connected to these phenomena. Furthermore, I will search for biological factors that could scientifically contribute to the serial killers' violent tendencies. In it is my intention that, through this study, I will bring the reader and myself one step closer to understanding the mind of a serial killer.

**Presentation Type and Session:** Poster VII

### **Recidivism: Playing Detective**

**Seth Friedlander**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

Treatment exposure of non-violent drug using offenders encompasses a significant causal link to offender recidivism. Existing research completed on offender recidivism has focused on individual treatment factors of recidivism, without determining the significance of other causal trends. Research in this field has yielded results depicting a causal trend between treatment exposure and offender recidivism, however the causal trend has not been compared to the significance of other variables affecting offender recidivism. Using an aggregate data analysis looking at sample cases from more than five hundred non-violent drug using offenders, this research statistically analyzes the significance of eighteen variables from three separate categories affecting offender recidivism.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

### **The Relationship between Student Loans and Loan Attitudes and Locus of Control**

**Meghan Batt**, PSY 488: Internship

Faculty Mentor: Professor Jill Norvilitis, Psychology

This study examined the role of locus of control, self-handicapping, delay of gratification and student loan attitudes in predicting student loan debt among 143 undergraduate students. Locus of control, self-handicapping, and delay of gratification did not correlate with the amount of student loan debt but were related to attitudes toward student loans. Specifically, loan initiative (the belief that they can work to pay off their loans) and loan helplessness (loans are needed to live) correlated with locus of control. Students' likelihood to self-handicap was related to loan initiative. Delay of gratification was related greater loan priority (loans are a burden that get pushed aside) and greater loan initiative. However, student



loan amounts were related to student loan attitudes such that a greater amount of student loan debt was related to greater feelings of loan helplessness and lower loan priority. These results suggest that although students' loan attitudes relate to locus of control, self-handicapping, and delay of gratification, other factors, such as the financial situation of the students, may influence their actual levels of debt and debt repayment habits.

**Presentation Type and Session:** Poster VI

### **Sigmund Freud: Personal Cocaine Use 1884-1896**

**Holly Schenk**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

During the late 1800s Sigmund Freud, a medical doctor and a professor began to use and prescribe cocaine. During the month of April 1884 Sigmund Freud first tried cocaine. This first use of cocaine changed Sigmund Freud's attitude about the way he practiced medicine. Sigmund Freud's personal use of cocaine gave light to new ideas about practicing medicine, and began his research into psychoanalytical thought and therapy. Without Freud personally using cocaine he would have never began looking at the mind in an alternative way. Freud's concepts of talk therapy, dream analysis, and free association all begin with his cocaine use. Many historians have argued that Freud's cocaine use made him an unpredictable doctor and that even though his personal cocaine use led to his theories and concepts, it was still clouding his mind and creating questionable decisions. This research will argue that Sigmund Freud's personal cocaine use was essential to his findings and was not a negative aspect. Using Freud's journals and publishing's it will be proven that using the drug cocaine, Freud came up with concepts that are still practiced today.

**Presentation Type and Session:** Poster VII

### **Social Interaction Among a Captive Western Lowland Gorilla Group**

**Zakiyyah Simmon**, ANT 322: Research Methods in Primatology  
Faculty Mentor: Professor Julie Wieczkowski, Anthropology

Previous research on the social interactions of western lowland gorillas (*Gorilla gorilla gorilla*) in the wild has led to the question of who interacts with whom among a captive western lowland group. I investigated social relationships among the Buffalo Zoo's gorilla group, which includes a silverback, two adult females, a juvenile, and an infant. The mother cares for dependent offspring almost entirely so I predicted that mother and offspring would interact more than any other dyad. Infanticide has been seen in wild populations; I therefore predicted that the new mother would spend more time with the silverback than the other female would. Thirty hours of data were collected between March 2 and April 12, 2014. I conducted 30-minute focal animal samples, with data collected every minute,

on all non-infant members of the group, and 30-minute all occurrences samples. Ethograms consisted of social interactions. Data will be analyzed using descriptive statistics, determining the quality and quantity of social interactions among group members. Preliminary results support the hypotheses of high mother and dependent social interactions and of the new mother spending more time near the silverback than the other mother does.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: III

### **Social Media and Academic Outcomes**

**Emma Marioles**, PSY 499: Independent Study

Faculty Mentor: Professor Dwight Hennessy, Psychology

The present study examined the potential relationship that exists between the frequency of use of social media and academic performance in college students. Previous research has found that as college students' electronic media usage increased, the academic performance among students decreased. The present study also investigated any potential link that may exist between social media use and whether or not the user is more inclined to use social media due to certain personality traits they may possess. Previous research reported findings that those who score higher in the personality traits of conscientiousness and openness were inclined to use social media. Participants completed a questionnaire designed for this study which included demographic questions, questions about their use of social media sites, use of other digital entertainment (television, video games, YouTube, web surfing), personality (openness, conscientiousness, neuroticism, agreeableness, extraversion), and questions about their GPA from the previous semester. A significant relationship was discovered between the participant's previous semester GPA and the amount of time spent watching television, using YouTube, and surfing the Internet. A significant relationship between conscientiousness and Twitter usage was also found. No significant relationship between academic success and social media usage was found. Reasons why certain entertainment distractors were related to GPA but social media was not will be discussed.

**Presentation Type and Session:** Poster VI

### **South American Oil and American Capitalism**

**Russell Luke**, PSC 330: American Foreign Policy

Faculty Mentor: Professor Kyeonghi Baek, Political Science

Today's global economy relies on the ability for resources to travel freely throughout the globe. The quest for oil has left an ugly mark on American history. Particularly in South America, American oil conglomerates have a long history of exploitation and greed. This has left a residual feeling of anger towards the United States among the citizens of the nations that possess oil. America's quest for oil has impacted many nations around the globe and has left a sentiment of distrust in many of these. This project will examine the impact



of multinational corporations seeking oil in South America and the residual effects, both political and social, that this has led to.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

### Suppression of Opium in China and China's Causing of the Opium Wars 1839-1860

**Sarah Bearor**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

For anyone who knows of the Opium Wars between Great Britain and China, one idea comes to mind; Great Britain started both wars due to the want of a larger British Empire and more influence in China, this however is not the case. There is valuable information that has yet to be evaluated which concludes that the Chinese brought the Opium Wars on themselves. To understand this, one needs to understand some background of the Opium Wars. The Opium Wars were a series of two wars fought on Chinese soil by China and Great Britain. The wars were fought between 1839-1860 and were the cause of China's suppression of Opium throughout the country and the closing off of trading ports to Great Britain. In turn, Great Britain began smuggling Opium into China through the only trading port left open at Canton. Emperor Daoguang along with Commissioner Lin could not end the smuggling, so the only direct action left was war. To approach the idea that China began the Opium Wars, extensive examination of treaties, letters and newspapers will be necessary to collect all valuable information. Along with this information, information and arguments from other historians in favor of Great Britain being the culprit in the beginning of the Opium wars will too be examined to give viewers a solid conclusion that Great Britain did not actually begin the Opium Wars but it was the Chinese who brought the wars on themselves.

**Presentation Type and Session:** Poster VIII

### Through the Looking Glass: Visitor Influences on the Welfare of Captive Western Lowland Gorillas

**Sarah Twardowski**, ANT 322: Research Methods in Primatology

Faculty Mentor: Professor Julie Wieczkowski, Anthropology

Recent studies on the social welfare and group dynamics of captive western lowland gorillas (*Gorilla gorilla gorilla*) have focused on environmental factors and diet, but few studies have analyzed visitor effects on captive gorilla groups. The primary purpose of this study is to analyze visitor influences on gorilla behavior and proximity. Subjects were a mixed-sex group of five captive western lowland gorillas at The Buffalo Zoo. Thirty hours of data were collected between March 2 and April 12, 2014. Forty-minute focal animal samples, with data collected every two minutes, were conducted on the four non-infant members of the group. These samples measured visitor crowd size; frequency of affiliative, aggressive, and anomalous behaviors; and proximity of

the group members to each other. Data were analyzed to determine relationships between crowd size and gorilla behaviors as well as crowd size and proximity. Preliminary results show a negative relationship between crowd size and proximity, showing that as crowd size increases, the gorillas have a larger group spread. Additional analysis will investigate the relationships between crowd size and gorilla behavior. The results of this study can increase our understanding of gorilla behavior, group dynamics, and social welfare of western lowland gorillas in captivity.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: II

### Title IX: Then and Now

**Cassandra Ball**, Sociology

Faculty Mentors: Professor Stephen Schwartz, School of Natural and Social Sciences and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

This project explores the resulting impact that the implementation of Title IX had on the world of women and sports in American schools. While Title IX greatly improved the lives and experiences of female athletes, in addition to increasing accessibility of sports for women, the actual effects may be more limited than suggested. Implemented during the second wave of the feminist movement, Title IX was a huge achievement for activists and women on a broad scale. However, once the initial implications of the act greatly improved the situation, equality in the sports arena has yet to be achieved. Despite dramatic increases in women athletes both in schools and in the professional realm, men and men's sports still receive the most media coverage, the most funding, receive higher salaries, and are more well known. The inequalities that still exist are remnants of what was, before Title IX, and yet still represent what is, post Title IX. This paper asks the question of what exactly Title IX did for women, whether it still impacts female athletes, and examines the inequalities that are still evident in sports between men and women.

**Presentation Type and Session:** Oral – Business, Computer Information Systems, Education, and Engineering Technology

### Tobacco and Slavery: The Evolution of the Chesapeake Bay Region, 1600-1750

**Tracy Callahan**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

Tobacco production in the Chesapeake Bay region began in the early 1600s. John Rolfe was the first individual to cultivate tobacco in the newly settled colony of Jamestown and as a result, Jamestown thrived. With the demand for tobacco increasing in Europe, the demand for inexpensive labor also increased. The introduction of slave labor in the Chesapeake Bay region increased the production of tobacco and produced wealth and power for the Chesapeake Bay gentry. Using academic historical journals and articles researched so far, many historians have concluded that the colony evolved once

the method of cultivating tobacco was perfected. The introduction to slave labor was the main result of this evolution. Secondary sources, such as articles written by historians John C. Coombs and Douglas Bradburn, have further supported the argument that slave labor and the production of tobacco have resulted in shaping various colonies in the Chesapeake Bay region. Although not thoroughly utilized to date, primary sources such as letters, data records, and pictures will help clarify how life was for various individuals living in the Chesapeake Bay region. From slaves to the wealthiest men in Jamestown, primary sources will enhance learning and understanding of the topic of tobacco and slaves.

**Presentation Type and Session:** Poster VII

### **Tracking Health: Impact of Substance Abuse Prevention Activities**

**Joelle Del Monte**, Higher Education and Student Affairs Administration, **Bianca Cornelius**, Dietetics, **Jenna Del Bove**, Sociology, **Jenny Nunn-Stanley**, Sociology, **Racquel Praino**, Health and Wellness, and **April Benitez**, Health and Wellness  
Faculty Mentors: Professor Kelly Marczynski, Center for Health and Social Research and Professor Robert Skutnik, Center for Health and Social Research

The Prevention System Impact Study is designed to track public health impact of substance abuse prevention activities in Erie County, NY. The Erie County Department of Mental Health (ECDMH) Comprehensive Prevention Plan identifies subarea data on public health outcomes as key measures of program impact. For example, do areas with a greater level of services show a differential impact as compared to areas with fewer services? Current prevention impact data lacks information on substance use, problems, and mental health issues directly from adolescents, the main target of current prevention services. This survey provides population-level data on actual behaviors of adolescents aged 14-20, which is the gold standard for assessing prevention impact. Inclusion of the entire population is also critically important because of the increased utilization of environmental prevention approaches (e.g., enforcement, norm changes), which target the entire population. The survey topics include key measures of mental health and substance abuse, including alcohol/illicit drug/prescription drug use initiation (age of first use), current use, perception of harm, parental interaction/rules, and various demographic information. The survey will be conducted using a multi-method approach. The methods include postal mailings, telephone calls, and electronic mailings. The adolescents can respond anonymously over the telephone using an audio computer-assisted-self-interviewing (A-CASI) system via the Internet to a web-based survey. A total of 150-200 participants in each of the County subareas will be recruited into the survey, to make valid statistical comparisons between subareas and over time.

**Presentation Type and Session:** Poster IV

### **Traditional Dyes and Weaving Techniques of the Nasca**

**Kristin Hatch**, ANT 400: Ancient Materials

Faculty Mentors: Professor Lisa Marie Anselmi, Anthropology and Professor Andrea Guiati, Director, Muriel A. Howard Honors Program

The Nasca culture flourished from around 100 BC to around 800 AD. They lived along the southern coast of Peru, near the Inca valley. The Nasca people are most well known for their intricate and beautiful textiles. This project explores Nasca textiles through experimental archaeology. Research will be conducted with academic journals and books to gain information about ancient Nasca dyes and weaving. This research will be applied in a hands-on way in an attempt to recreate Nasca dyes with their traditional materials and technology. These dyes will then be used to color yarn. This yarn will be made from alpaca fur, a material that would have been readily available to ancient Nasca weavers. The final stage of the project will be to use the dyed yarn to weave a small piece again using traditional Nasca techniques.

**Presentation Type and Session:** Poster VII

### **Undergraduate Learning Assistants in a Hybrid Economics Course**

**Kayla Pyc**, **Siobhan Johnson**, **Heather Dennis**, **Noor Aref**, **Joseph Mantione**, **Eric Sauerzopf**, **Amanda Nassar**, **Charlene Moultrup**, and **Michelle Meer**, ECO 101: The Economic System

Faculty Mentors: Professor William Ganley, Economics and Finance and Ms. Meghan Periera, Senior Instructional Designer

Undergraduate Learning Assistants, also referred to as ULAs, are undergraduate students that are chosen by the professor to assist with teaching and learning activities. The responsibility of the Undergraduate Learning Assistant in the Economics 101 course is to manage the online activities, track the progress of students, and provide some face-to-face interaction as well. BLACKBOARD is used in a variety of ways. We have weekly online discussion forums where the students post a response to a given question and then respond to their peers' questions. This is a good way for students to think critically about course material and to help others in the class do the same. There are also weekly quizzes to be used as a study aid for exams. Students have the opportunity to take these quizzes an unlimited time to improve their scores. In addition, there is a ToonDoo activity where the students can create their own cartoon based on their knowledge of the course. This activity provides students the opportunity to express their understanding of the material in a creative way. Besides online activities we hold office hours and encourage students to come see us with any questions or help that they may need in the course. All ULAs have previously taken Economics 101. A positive aspect to this is we see

what works and what doesn't. We use this advantage to change or add new activities to help facilitate students learning. We believe that Undergraduate Learning Assistants are beneficial because students may feel they can connect with us on a more personal level.

**Presentation Type and Session:** Poster IV

### **Underground Urban Culture and the Socio-Economic Effects of Prohibition in New York City During the 1920s**

**Jontia Jackson**, HIS 400: Senior Seminar

Faculty Mentor: Professor Bridget Chesterton, History and Social Studies Education

The 1920s is highlighted in American History as an idealized time of prosperity, individualism and prohibition. Prohibition was pushed by congress and ratified as law on January 18, 1920 as the 18th amendment to the Constitution. The American government's intention behind prohibition was as a social experiment to lower crime, improve health, and decrease the moral evils in American Society. The Amendment placed restriction on the production, sale, transportation, importation, and exportation of alcoholic beverages. Almost instantaneously the ambitions behind prohibition backfired establishing a culture unified by the illegal consumption of alcohol. Thus American society was changed by this blatant disregard for the 18th amendment and open justification to undermine it as law disrupted the influence of authority during this time. Under the amendment restriction on the access of alcohol came with the creation of an underground economy through speakeasies, saloons, bootleggers, and gangsters that met the needs of the public. These underground economies flourished in large cities where resistance to prohibition ran rapid and established a culture through the individuals that supported them. The prime example of this trend took place in New York City. The Prohibition of alcohol unified Americans through resistance of the 18th amendment during the 1920s changing New York City developing an underground socio-economic urban culture.

**Presentation Type and Session:** Oral – Humanities and Social Sciences: I

### **Voter Turnout Motivated by Media**

**Candace Baker**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

What are the motives and reasons in which citizens' vote in a presidential election? Individuals will serve as the unit of analysis for this experiment. This will help determine which variable has the most influence on voting turnout. The dependent variable is the voting turnout across the United States in the 2010-2012 year. The independent variables are media exposure, levels of education, household income, religion and race/ ethnicity. Media exposure especially television increases voter turnout throughout the country.

This statement was the foundation for what my paper is about. Upon my research I found this statement to be true for many individuals. Although there were other statistically significant factors that go into why a person may vote, television had the greatest impact. The other factors that were tested such as education, household income, ethnicity, religion and other sources of media were all thought to be possible contenders for voter turnout. In fact some were significant while others were not. The data I received was compiled from the American National Election Studies and tested individuals on their voting performance. The variables with the most significance was media exposure i.e. television, newspaper, and internet, educational success, and wealth.

**Presentation Type and Session:** Poster VIII

### **Want a Beer? Let's Ask the Women!**

**Raquel Tavares de Lima**, SOC 312: Women in Society

Faculty Mentor: Professor Richard Strahan, Sociology

For beer producers, the objectification of women is an integral part of their advertising strategy as it is assumed that this maintains the interest of male consumers. This pilot study will explore how women respond to the sexist and gendered images used in televised beer advertisements. I will analyze how women between the ages of 21 and 25 understand, engage, frame, and resist the messages embedded in these commercials. Additionally, the study will interrogate what effect, if any, these messages have on women's alcohol purchasing and consumption habits, including how these gendered images influence brand loyalty. Using open-ended questions, I will interview at least 8 respondents. This research will capture the interviewees thoughts on a selection of televised advertisements. Initial respondents will be located via advertisements and fliers. To grow the sample, participants will be encouraged to ask their friends to join the study. Each participant will be reimbursed for her time.

**Presentation Type and Session:** Poster IV

### **What are the Factors that Predict the Effectiveness of a Governmental Agency?**

**Kalina Vaneva**, PSC 470: Senior Seminar

Faculty Mentor: Professor Peter Yacobucci, Political Science

There are many factors that influence the effectiveness of a governmental agency. In order to understand what governmental approach of ascendancy is more successful we need to analyze different regulatory bodies that operate in the same sphere and compare what regulatory factors contribute to their effectiveness. My study focuses on the effectiveness of food regulatory agencies. Effectiveness of federal agencies is crucial and some findings revealed that public organizational effectiveness was affected by environmental, human resource management, organizational, and individual-level factors. Funding is another vital factor that

contributes greatly to federal agencies performance. This article will examine organizational effectiveness and performance of several federal agencies by looking at factors such as; budget, workforce, organization, authority, management, and the effect of the revolving door.

**Presentation Type and Session:** Poster VII

### **Work and Family Orientation and its Influence on Perceived Success**

**Christopher Miller**, Industrial/ Organizational Psychology  
Faculty Mentor: Professor Robert Delprino, Psychology

With the cost of rising tuition many students are forced to work while they attend college. Thus bringing about an internal balancing act upon the student between work, family and school. Relatively little research has been done to examine the work-family orientation of students. Work family orientation describes the different ways that individuals balance work, family and for students, school. This study looks to examine the work family and school orientation of working undergraduate students through three particular views spillover, segmentation, and compensation. During the study two distinct groups were identified. Those groups were those who experienced spillover and segmentation. Each group consisted of 22 students. Spillover is when an individual's experiences from one domain (school, work, family) overflow into another. Segmentation is when an individual's experiences from one domain do not affect the experiences of another. It was also found that the majority of subjects within each group were Caucasian, female, in their early twenties, a Junior or higher, worked part time and were in school full time. These demographics were reflected in the total sample. In reviewing the amounts of conflict experienced by each of the two groups there was higher School Family Conflict, School Work Conflict, and Work Family Conflict reported by those that were categorized as having a Spillover orientation. However, only the School Work Conflict Scale was significantly higher than those who were categorized as having a Segmentation orientation ( $t(31) = 3.065$ ,  $p = 0.001$ ). The study also discusses the implications this may have for institutions such as universities.

**Presentation Type and Session:** Poster VII











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