SRCC 2025
Abstracts and Schedule

May 2, 2025, 2:00-6:00 PM
SAMC

Posters

student	session	time	location	mentor
Abadi	III	4:00-4:55PM	atrium	Tang
Abrianna	I	2:00-2:55PM	atrium	Fitzpatrick
Abubakar	III	4:00-4:55PM	atrium	Buonanno
Aceves Minakata	I	2:00-2:55PM	atrium	Shephard
Akter	I	2:00-2:55PM	atrium	Manning
Albright	II	3:00-3:55PM	atrium	Chesterton
Alijaj	IV	5:00-5:55PM	atrium	Banerjee
Alley	I	2:00-2:55PM	atrium	Fitzpatrick
Alverson	II	3:00-3:55PM	atrium	Leighton
Anthony	II	3:00-3:55PM	atrium	Shephard
Arias	III	4:00-4:55PM	atrium	Heo
Arteaga-Martinez	III	4:00-4:55PM	atrium	Fitzpatrick
Arzuaga	I	2:00-2:55PM	atrium	Fitzpatrick
Asboth	I	2:00-2:55PM	atrium	Grinberg
Attia	III	4:00-4:55PM	atrium	Mazzotta
Auge	II	3:00-3:55PM	atrium	Bergslien
Aures	III	4:00-4:55PM	atrium	Perrelli
Axberg	II	3:00-3:55PM	atrium	Bergslien
Banks	III	4:00-4:55PM	atrium	Schuetze
Banyan	IV	5:00-5:55PM	atrium	Mazzotta
Baron	I	2:00-2:55PM	atrium	Kamper-DeMarco
Baron	II	3:00-3:55PM	atrium	Reid
Becerra	IV	5:00-5:55PM	atrium	Shauku
Beecham	I	2:00-2:55PM	atrium	Foraker
Begum	IV	5:00-5:55PM	atrium	Fitzpatrick
Belanger	I	2:00-2:55PM	atrium	Du
Below	III	4:00-4:55PM	atrium	Vermette
Benosa	III	4:00-4:55PM	atrium	Vermette
A. Benson	IV	5:00-5:55PM	atrium	Lindner
B. Benson	II	3:00-3:55PM	atrium	Potts
Best	II	3:00-3:55PM	atrium	Novikova
Billups	I	2:00-2:55PM	atrium	Mazzotta
Bizal	I	2:00-2:55PM	atrium	Du
Bloom	III	4:00-4:55PM	atrium	Waldeck
Bobcik	III	4:00-4:55PM	atrium	Vermette
Boeing	III	4:00-4:55PM	atrium	Mazzotta

Posters

student	session	time	location	mentor
Boltz	II	3:00-3:55PM	atrium	Fitzpatrick
Boyd	III	4:00-4:55PM	atrium	Knight
Braeges	IV	5:00-5:55PM	atrium	Tang
Braun	II	3:00-3:55PM	atrium	McKay
Braunscheidel	III	4:00-4:55PM	atrium	Vermette
Brindley	IV	5:00-5:55PM	atrium	Mazzotta
H. Brown	III	4:00-4:55PM	atrium	Senthinathan
T. Brown	II	3:00-3:55PM	atrium	Shephard
Burgeson	III	4:00-4:55PM	atrium	Vermette
Buskist	IV	5:00-5:55PM	atrium	Solar
Bussard	I	2:00-2:55PM	atrium	Reid
Caine	I	2:00-2:55PM	atrium	Fitzpatrick
Calkins	I	2:00-2:55PM	atrium	Grinberg
Campbell	II	3:00-3:55PM	atrium	Shephard
Candelario	I	2:00-2:55PM	atrium	del Prado Hill
Carlotto	III	4:00-4:55PM	atrium	Williams
Carlson	II	3:00-3:55PM	atrium	Mazzotta
Carrigan	II	3:00-3:55PM	atrium	Foraker
Casillo	III	4:00-4:55PM	atrium	King
Chambers	II	3:00-3:55PM	atrium	O'Leary-Soudant
Childs	II	3:00-3:55PM	atrium	Fitzpatrick
Ciezki	IV	5:00-5:55PM	atrium	Mawer
Cinquino	III	4:00-4:55PM	atrium	Potts
Cipollina	II	3:00-3:55PM	atrium	del Prado Hill
Clark	III	4:00-4:55PM	atrium	Vermette
Conlon	IV	5:00-5:55PM	atrium	Mawer
Conway	IV	5:00-5:55PM	atrium	Fitzpatrick
Coore	III	4:00-4:55PM	atrium	Banerjee
Coughlin	I	2:00-2:55PM	atrium	Fitzpatrick
G. Craig	IV	5:00-5:55PM	atrium	Fitzpatrick
K. Craig	I	2:00-2:55PM	atrium	Budin
Crandall	I	2:00-2:55PM	atrium	Du
Cranston	II	3:00-3:55PM	atrium	Shephard
Curry	I	2:00-2:55PM	atrium	Mazzotta
Damon	IV	5:00-5:55PM	atrium	Naseralla
Danquah	I	2:00-2:55PM	atrium	Grinberg

Posters

student	session	time	location	mentor
Davis	I	2:00-2:55PM	atrium	Toledano
de Necochea	II	3:00-3:55PM	atrium	Shephard
Dee	II	3:00-3:55PM	atrium	Fitzpatrick
DeFeo	III	4:00-4:55PM	atrium	MacIsaac
Della Vella	III	4:00-4:55PM	atrium	Zhang
Delli Colli	IV	5:00-5:55PM	atrium	Suwal
Denis-Torres	II	3:00-3:55PM	atrium	Manning
Denniston	I	2:00-2:55PM	atrium	Manning
DePietro	II	3:00-3:55PM	atrium	Reid
Derby	III	4:00-4:55PM	atrium	Novikova
Devine	II	3:00-3:55PM	atrium	Du
Dillemuth	II	3:00-3:55PM	atrium	Maguire
DiRienzo	I	2:00-2:55PM	atrium	Reid
Djibrine	I	2:00-2:55PM	atrium	Bergslien
Dorsey	III	4:00-4:55PM	atrium	Vermette
C. Doyle	II	3:00-3:55PM	atrium	Ederer
C. Doyle	I	2:00-2:55PM	atrium	Chesterton
M. Doyle	III	4:00-4:55PM	atrium	Allen
Draper	I	2:00-2:55PM	atrium	Chesterton
Edwards	III	4:00-4:55PM	atrium	Vermette
Ehrenberg	I	2:00-2:55PM	atrium	Du
Engel	I	2:00-2:55PM	atrium	O'Leary-Soudant
Ervolina	III	4:00-4:55PM	atrium	Naseralla
Estrada	I	2:00-2:55PM	atrium	Du
Eweka	III	4:00-4:55PM	atrium	Leighton
Falzone	II	3:00-3:55PM	atrium	McKay
Farah	IV	5:00-5:55PM	atrium	Banerjee
Faraj	I	2:00-2:55PM	atrium	Shephard
Faro	III	4:00-4:55PM	atrium	King
Farragher	IV	5:00-5:55PM	atrium	Weber
Fazal	III	4:00-4:55PM	atrium	Fitzpatrick
Fazal	IV	5:00-5:55PM	atrium	Mazzotta
Feraldi	IV	5:00-5:55PM	atrium	Allen
Ferguson-Giscombe	II	3:00-3:55PM	atrium	Bergslien
Ferraro	III	4:00-4:55PM	atrium	Kline
M. Fields	II	3:00-3:55PM	atrium	Shephard

Posters

student	session	time	location	mentor
C. Fields	I	2:00-2:55PM	atrium	Bergslien
Fish	II	3:00-3:55PM	atrium	Henry
Fisher	I	2:00-2:55PM	atrium	Manning
Flick	IV	5:00-5:55PM	atrium	Weber
Formaniak	II	3:00-3:55PM	atrium	Novikova
Fragale	III	4:00-4:55PM	atrium	Vermette
Frederick	III	4:00-4:55PM	atrium	Vermette
Freeman	I	2:00-2:55PM	atrium	Grinberg
Frys	I	2:00-2:55PM	atrium	Wall
Gamblin	IV	5:00-5:55PM	atrium	Mazzotta
Gardner	III	4:00-4:55PM	atrium	Naseralla
Garrett	II	3:00-3:55PM	atrium	Bergslien
Garrett	III	4:00-4:55PM	atrium	Holmgren
Gesamondo	I	2:00-2:55PM	atrium	Foraker
Ghosen	I	2:00-2:55PM	atrium	Grinberg
Gilmore	IV	5:00-5:55PM	atrium	Fitzpatrick
Gnirk	II	3:00-3:55PM	atrium	O'Leary-Soudant
Gokavarapu	I	2:00-2:55PM	atrium	Ahmed
Goodstal	I	2:00-2:55PM	atrium	Reid
Gore	I	2:00-2:55PM	atrium	Ahmed
Graf	III	4:00-4:55PM	atrium	Norvilitis
Graf	II	3:00-3:55PM	atrium	Reid
Gramza	II	3:00-3:55PM	atrium	Grinberg
Grano	III	4:00-4:55PM	atrium	Banerjee
K. Green	I	2:00-2:55PM	atrium	Manning
N. Green	II	3:00-3:55PM	atrium	Shephard
Greer	IV	5:00-5:55PM	atrium	Mazzotta
Griffin	II	3:00-3:55PM	atrium	Mazzotta
Grohusko	II	3:00-3:55PM	atrium	Manning
Gutierrez	III	4:00-4:55PM	atrium	Vermette
Guzman	II	3:00-3:55PM	atrium	Fitzpatrick
Hafner	IV	5:00-5:55PM	atrium	Allen
Hahn	II	3:00-3:55PM	atrium	Leighton
G. Hall	II	3:00-3:55PM	atrium	Bajus
M. Hall	IV	5:00-5:55PM	atrium	Banerjee
Hamilton	IV	5:00-5:55PM	atrium	Goldberg

Posters

student	session	time	location	mentor
Harrison	I	2:00-2:55PM	atrium	Manning
Hart	III	4:00-4:55PM	atrium	Lindner
Hassell	IV	5:00-5:55PM	atrium	Lindner
Hayes	III	4:00-4:55PM	atrium	Suwal
Hayslett	II	3:00-3:55PM	atrium	Shephard
Hellert	I	2:00-2:55PM	atrium	Du
A. Henry	III	4:00-4:55PM	atrium	Vermette
D. Henry	II	3:00-3:55PM	atrium	Shephard
Hernandez	II	3:00-3:55PM	atrium	Shephard
Hill	I	2:00-2:55PM	atrium	Manning
Hunt	I	2:00-2:55PM	atrium	Manning
C. Hurley	II	3:00-3:55PM	atrium	Vanchan
L. Hurley	I	2:00-2:55PM	atrium	Mazzotta
Hussain	II	3:00-3:55PM	atrium	Manning
Innocent	III	4:00-4:55PM	atrium	Mazzotta
A. Islam	IV	5:00-5:55PM	atrium	Sarwari
S. Islam	I	2:00-2:55PM	atrium	Manning
Jackson	I	2:00-2:55PM	atrium	O'Leary-Soudant
Jacowitz	I	2:00-2:55PM	atrium	Manning
James	III	4:00-4:55PM	atrium	Banerjee
Jarzynka	II	3:00-3:55PM	atrium	Grinberg
Jasper	III	4:00-4:55PM	atrium	Fitzpatrick
A. Johnson	III	4:00-4:55PM	atrium	Vermette
F. Johnson	I	2:00-2:55PM	atrium	Bergslien
M. Johnson	II	3:00-3:55PM	atrium	Reid
M. Johnson	I	2:00-2:55PM	atrium	Reid
M. Johnson	IV	5:00-5:55PM	atrium	Senthinathan
A. Jones	II	3:00-3:55PM	atrium	Mazzotta
M. Jones	IV	5:00-5:55PM	atrium	del Prado Hill
J. Jones	I	2:00-2:55PM	atrium	Chesterton
Kabir	IV	5:00-5:55PM	atrium	Banerjee
Kamara	I	2:00-2:55PM	atrium	Grinberg
Karcher	II	3:00-3:55PM	atrium	Chesterton
Kaufman	III	4:00-4:55PM	atrium	Solar
Khanam	III	4:00-4:55PM	atrium	Zhang
Kibria	III	4:00-4:55PM	atrium	Banerjee

student	session	time	location	mentor
King	II	3:00-3:55PM	atrium	O'Leary-Soudant
Kingsbury	I	2:00-2:55PM	atrium	McKay
Knott	I	2:00-2:55PM	atrium	Anselmi
Koeth	III	4:00-4:55PM	atrium	Vermette
Kohler	I	2:00-2:55PM	atrium	Wieczkowski
Kohler	II	3:00-3:55PM	atrium	Maguire
Konte	III	4:00-4:55PM	atrium	Novikova
Kotarski	II	3:00-3:55PM	atrium	Du
Kpaw	III	4:00-4:55PM	atrium	Vermette
Kramer	II	3:00-3:55PM	atrium	Grinberg
Krieger	III	4:00-4:55PM	atrium	*Knight*
J. Lange	III	4:00-4:55PM	atrium	Buonanno
R. Lange	II	3:00-3:55PM	atrium	Grinberg
Less	I	2:00-2:55PM	atrium	Du
Lojek	IV	5:00-5:55PM	atrium	King
Lorenzo	I	2:00-2:55PM	atrium	Manning
LoTempio	II	3:00-3:55PM	atrium	Grinberg
Lyn	I	2:00-2:55PM	atrium	Grinberg
C. Mack	IV	5:00-5:55PM	atrium	Banerjee
I. Mack	I	2:00-2:55PM	atrium	Chesterton
Madera	III	4:00-4:55PM	atrium	King
Madigan	II	3:00-3:55PM	atrium	Grinberg
Maher	III	4:00-4:55PM	atrium	Sarwari
Malbrough	I	2:00-2:55PM	atrium	Foraker
Maldonado	I	2:00-2:55PM	atrium	Saharan
Marcano	IV	5:00-5:55PM	atrium	Fitzpatrick
Mastoras	II	3:00-3:55PM	atrium	Shephard
Matamoros	II	3:00-3:55PM	atrium	MacLean
McEachin	II	3:00-3:55PM	atrium	Shephard
McKenzie	III	4:00-4:55PM	atrium	Vermette
Meidel	II	3:00-3:55PM	atrium	Bergslien
Melfi	II	3:00-3:55PM	atrium	Naseralla
Mendez	IV	5:00-5:55PM	atrium	Tang
Mendez	III	4:00-4:55PM	atrium	Knight
Michel	III	4:00-4:55PM	atrium	Banerjee
T. Miles	I	2:00-2:55PM	atrium	Fitzpatrick

Posters

student	session	time	location	mentor
Z. Miles	I	2:00-2:55PM	atrium	Grinberg
A. Miller	II	3:00-3:55PM	atrium	Bergslien
G. Miller	II	3:00-3:55PM	atrium	Fitzpatrick
Mmunga	III	4:00-4:55PM	atrium	Fitzpatrick
Mohammed	I	2:00-2:55PM	atrium	Grinberg
Moncalian	I	2:00-2:55PM	atrium	O'Leary-Soudant
Monteforte	III	4:00-4:55PM	atrium	Sullivan
Morin	II	3:00-3:55PM	atrium	Bergslien
Morin	III	4:00-4:55PM	atrium	Vermette
Morris	IV	5:00-5:55PM	atrium	Fitzpatrick
Mosley	IV	5:00-5:55PM	atrium	Banerjee
Mucciolo	I	2:00-2:55PM	atrium	Senthinathan
A. Murphy	I	2:00-2:55PM	atrium	MacLean
A. Murphy	III	4:00-4:55PM	atrium	Naseralla
D. Murphy	II	3:00-3:55PM	atrium	Grinberg
Neufeld	I	2:00-2:55PM	atrium	Grinberg
Noor	II	3:00-3:55PM	atrium	Zhang
C. Nowak	IV	5:00-5:55PM	atrium	Fitzpatrick
J. Nowak	II	3:00-3:55PM	atrium	Du
Nurudeen	III	4:00-4:55PM	atrium	Banerjee
O'Connell	I	2:00-2:55PM	atrium	Grinberg
Ochoa	II	3:00-3:55PM	atrium	Ahmed
Ogiugo	III	4:00-4:55PM	atrium	Fitzpatrick
Ohri	I	2:00-2:55PM	atrium	Ahmed
Okoli	III	4:00-4:55PM	atrium	Zhang
Oliver-Ragland	III	4:00-4:55PM	atrium	Novikova
Olivier	IV	5:00-5:55PM	atrium	Banerjee
Olupitan	IV	5:00-5:55PM	atrium	Fitzpatrick
Olyench	I	2:00-2:55PM	atrium	Grinberg
Othman	II	3:00-3:55PM	atrium	Grinberg
Padilla	II	3:00-3:55PM	atrium	Grinberg
Palmeri	I	2:00-2:55PM	atrium	Mazzotta
Panek	III	4:00-4:55PM	atrium	Vermette
Panek	IV	5:00-5:55PM	atrium	Tang
Paone	II	3:00-3:55PM	atrium	Mazzotta
Parisse	IV	5:00-5:55PM	atrium	Colaizzo-Anas

Posters

student	session	time	location	mentor
Parker	I	2:00-2:55PM	atrium	Fitzpatrick
Parobek	II	3:00-3:55PM	atrium	O'Leary-Soudant
Patterson	I	2:00-2:55PM	atrium	Shephard
Pena	II	3:00-3:55PM	atrium	Henry
Pratt	III	4:00-4:55PM	atrium	del Prado Hill
Puleo	IV	5:00-5:55PM	atrium	Sullivan
Puleo	II	3:00-3:55PM	atrium	Bergslien
Rameres	II	3:00-3:55PM	atrium	Grinnell
Ramseier	II	3:00-3:55PM	atrium	Novikova
Reh	III	4:00-4:55PM	atrium	Banerjee
Reimers	II	3:00-3:55PM	atrium	Bergslien
Reynolds	III	4:00-4:55PM	atrium	Naseralla
Ricotta	III	4:00-4:55PM	atrium	Naseralla
Ridolfi	I	2:00-2:55PM	atrium	Nicholls
Right	IV	5:00-5:55PM	atrium	King
Rivera	IV	5:00-5:55PM	atrium	Banerjee
Rodriguez	II	3:00-3:55PM	atrium	Shephard
Rupell	IV	5:00-5:55PM	atrium	Mazzotta
Rybak	II	3:00-3:55PM	atrium	Bergslien
Rybarczyk	II	3:00-3:55PM	atrium	Manning
Saeed	IV	5:00-5:55PM	atrium	Fitzpatrick
Sampson Gilbert	III	4:00-4:55PM	atrium	Naseralla
Sang	II	3:00-3:55PM	atrium	Grinberg
Sawon	I	2:00-2:55PM	atrium	Grinberg
Saydee	III	4:00-4:55PM	atrium	Fitzpatrick
Schiedel	IV	5:00-5:55PM	atrium	Kline
Schilling	III	4:00-4:55PM	atrium	Naseralla
Schmalfeld	III	4:00-4:55PM	atrium	Panek-Shirley
Schmidt	IV	5:00-5:55PM	atrium	Colaizzo-Anas
Schwagler	IV	5:00-5:55PM	atrium	Fitzpatrick
Silva	I	2:00-2:55PM	atrium	Du
Siwakoti	IV	5:00-5:55PM	atrium	Banerjee
Skellie	III	4:00-4:55PM	atrium	McGovern
Da. Smith	II	3:00-3:55PM	atrium	Shephard
De. Smith	II	3:00-3:55PM	atrium	Mazzotta
K. Smith	II	3:00-3:55PM	atrium	Perrelli

Posters

student	session	time	location	mentor
L. Smith	IV	5:00-5:55PM	atrium	Mazzotta
N. Smith	I	2:00-2:55PM	atrium	McGovern
Snider	IV	5:00-5:55PM	atrium	Mazzotta
Sonker	I	2:00-2:55PM	atrium	Fitzpatrick
Southlea	I	2:00-2:55PM	atrium	Shephard
Spaulding	III	4:00-4:55PM	atrium	Vermette
Spence	II	3:00-3:55PM	atrium	Mazzotta
Stabler	IV	5:00-5:55PM	atrium	Panek-Shirley
Stisser	I	2:00-2:55PM	atrium	O'Leary-Soudant
Stoimenova	IV	5:00-5:55PM	atrium	Mazzotta
Strusienski	II	3:00-3:55PM	atrium	Vanchan
Sumbundu	II	3:00-3:55PM	atrium	Fitzpatrick
Swann	I	2:00-2:55PM	atrium	Manning
Taylor	IV	5:00-5:55PM	atrium	Banerjee
Theogene	III	4:00-4:55PM	atrium	Naseralla
Theriault	III	4:00-4:55PM	atrium	Liao
Thomas	I	2:00-2:55PM	atrium	Reid
Thomas	II	3:00-3:55PM	atrium	Reid
Thompson	IV	5:00-5:55PM	atrium	Banerjee
Townsell	II	3:00-3:55PM	atrium	Shephard
Tse	I	2:00-2:55PM	atrium	Grinberg
Tse	II	3:00-3:55PM	atrium	Ahmed
Tucker	III	4:00-4:55PM	atrium	Novikova
Tuffour	II	3:00-3:55PM	atrium	Mazzotta
Tumaini	III	4:00-4:55PM	atrium	Knight
Vaddakkayil	III	4:00-4:55PM	atrium	Waldeck
Vaithilingam	II	3:00-3:55PM	atrium	Senthinathan
Valery	II	3:00-3:55PM	atrium	Norvilitis
Valery	III	4:00-4:55PM	atrium	Naseralla
Vullo	III	4:00-4:55PM	atrium	Waldeck
Wagner	I	2:00-2:55PM	atrium	Manning
Wainwright	IV	5:00-5:55PM	atrium	Senthinathan
Wall	III	4:00-4:55PM	atrium	Fitzpatrick
Watkins	II	3:00-3:55PM	atrium	Chesterton
Weichert-Winkfield	I	2:00-2:55PM	atrium	Mazzotta
Weyant	III	4:00-4:55PM	atrium	Naseralla

Posters

student	session	time	location	mentor
Whipple	IV	5:00-5:55PM	atrium	del Prado Hill
Wild	II	3:00-3:55PM	atrium	Zhang
D. Williams	II	3:00-3:55PM	atrium	Mazzotta
M. Williams	II	3:00-3:55PM	atrium	Bergslien
T. Williams	III	4:00-4:55PM	atrium	Fitzpatrick
Willis	II	3:00-3:55PM	atrium	Vermette
Wilson	III	4:00-4:55PM	atrium	Naseralla
C. Wright	IV	5:00-5:55PM	atrium	Fitzpatrick
L. Wright	III	4:00-4:55PM	atrium	Cho
Young	I	2:00-2:55PM	atrium	Chesterton
Zhanay	II	3:00-3:55PM	atrium	Naseralla
Zuefle	II	3:00-3:55PM	atrium	Bergslien
Zuefle	III	4:00-4:55PM	atrium	Vermette

Oral Presentations

SRCC 2025

student	*session*	*time*	*location*	*mentor*
Adams	III	4:30-4:45PM	SAMC 151	Breen
Ali	IV	4:30-4:45PM	SAMC 170	Cushman
Balazadeh	I	3:15-3:30PM	SAMC 151	VanderWyst
Capton	II	3:15-3:30PM	SAMC 170	Sanders
Freudenhammer-Glass	I	3:00-3:15PM	SAMC 151	Gage
Goodnough	II	3:30-3:45PM	SAMC 170	Sanders
Kitterman	II	3:45-4:00PM	SAMC 170	Sanders
Lambert	I	3:45-4:00PM	SAMC 151	Perez
Maziarz	IV	4:00-4:15PM	SAMC 170	Sanders
Previtte	I	3:15-3:30PM	SAMC 151	VanderWyst
Przybyla	IV	4:15-4:30PM	SAMC 170	Sanders
Rosa	II	3:00-3:15PM	SAMC 170	Norman
Smallhorne	III	4:00-4:15PM	SAMC 151	Niman
Stein	I	3:30-3:45PM	SAMC 151	McCabe
Stychalska	I	3:30-3:45PM	SAMC 151	McCabe
Whipple	III	4:15-4:30PM	SAMC 151	Niman

Artistic Presentations

SRCC 2025

student	*session*	*time*	*location*	*mentor*
Ferguson-Giscombe	Oral III	4:45-5:00PM	SAMC 151	Ansari
Maldonado	Poster II	3:00-3:55PM	atrium	Saharan

Oral Presentation Abstracts

3:00-4:00 SAMC 151 Oral I

3:00-4:00 SAMC 170 Oral II

4:00-5:00 SAMCC 151 Oral III

4:00-5:00 SAMC 170 Oral IV

Poster Presentation Abstracts

2:00-2:55 Poster I

3:00-3:55 Poster II

4:00-4:55 Poster III

5:00-5:55 Poster IV

Oral Session I

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3:00-3:15PM, SAMC 151

Frederic Remington and the Contemporary Museum

Asher Freudenhammer-Glass, Art History
Faculty mentor: Professor Frances Gage, Art & Design

Frederic Remington is a prolific late 19th-century artist who is well known for his portrayal of Western America in his illustrations, paintings and articles. In 1991, his work was a part of an exhibition entitled “The West as America: Reinterpreting Images of the Frontier, 1820 – 1920,” which challenged audiences' preconceived notions of Western American art and received major criticism from the public, press, and the US government. This paper argues that fear of this critical response has caused contemporary museum curators to downplay Frederic Remington’s cultural importance in favor of falsely up-selling his artistic endeavors. Remington’s work highlights cultural attitudes of American idealism and westward expansionism and prejudices towards Natives, immigrants, African Americans, and women that were popularized during his time, and remain relevant in the study of American attitudes towards these groups today. Despite scholarly and visual evidence, contemporary exhibitions continue to portray Remington as an accurate source on the West, and a great artist, which will eventually lead to his irrelevancy in the realm of art history as his cultural importance is forgotten.

3:15-3:30PM, SAMC 151

The World of Unaccompanied Clarinet: Repertoire, Composers and the Evolution of Techniques

Jennifer Balazadeh, Music
Annabella Previtte, Music
Faculty mentor: Professor Erin VanderWyst, Music

In the history of musical instruments, the clarinet arrived on the scene later than most. Derived from the chalumeau, the clarinet’s evolution began in the early 18th century. Over the next few centuries, the clarinet became the powerhouse it is today: a four octave, beautifully toned and versatile instrument that can play any style of music repertoire from classical to jazz, accompanied or solo. With an interest in pedagogy and a desire to understand how the study of repertoire can help a student develop their performance skills, I embarked on a multifaceted project where I was able to track unaccompanied clarinet repertoire from its infancy to the modern age, discovering more than 600 unique works. By examining these pieces I learned how

unaccompanied clarinet repertoire has evolved from featuring virtuosic passages to also including more modern extended techniques, making it a beneficial learning tool. With all this repertoire, which was written by a diverse population of composers, I compiled a comprehensive online database that includes a hyperlinked list of compositions, composers and publishers that makes finding the perfect repertoire for any clarinetist fast and simple.

3:30-3:45PM, SAMC 151

Empowering Family Advocacy During the IEP Decision-Making Process

Skylar Stychalska, Special Education and Childhood Education
Anna Stein, Childhood and Special Education
Faculty mentor: Professor Katie McCabe, Exceptional Education

Our research examines the experiences of historically marginalized families during the IEP process, with a particular focus on the critical roles of advocacy and parental involvement. We emphasize the importance of school-based teams adopting an asset-based approach when collaborating with families, as emphasized by Sauer & Rossetti (2020). This approach recognizes and values the strengths that families bring to the table, rather than focusing on deficits. Additionally, we highlight the value of cultural humility in education, drawing on Trainor's (2010) work, which suggests that educators can significantly enhance their relationships with diverse families by embracing practices that acknowledge and respect cultural differences. To capture the perspectives of families and caregivers, we designed a semi-structured interview protocol aimed at gathering in-depth, firsthand accounts of their experiences with decision-making and advocacy during IEP development. Our interviews specifically explored how participants contributed input on their child's placements and services, shedding light on the ways in which they were able to engage in the process.The findings from our qualitative analysis will be presented, providing insights into the challenges and successes these families face in advocating for their children within the special education system. Furthermore, we will share policy implications and practical strategies to enhance parental understanding of special education terminology, inform them of their rights under IDEA, and increase their efficacy in advocating for the needs of their child. Through this work, we aim to contribute to a more inclusive and equitable IEP process, where all families, regardless of background, can actively participate and advocate for their children.

3:45-4:00PM, SAMC 151

Stone Butch Blues and The Madeline Davis Archive : The History of Buffalo's Queer Working Class

Nicole Lambert, Arts and Letters
Faculty mentor: Professor Lorna Perez, English

My USRF project is a research paper on the history of the Queer working class community in Buffalo. I delved into the novel, Stone Butch Blues, by Leslie Feinberg as well as other secondary texts that are rich in Queer history. I then searched for material related to this topic in the Madeline Davis Archives. I formed connections between these sources and discovered why there were certain gaps in material. The recurring violence, discrimination, alienation, intersectionality and importance of finding community were all very relevant themes in my research. This project greatly advances the knowledge in the women and gender discipline. Queer studies have only somewhat recently become relevant, even though Queer people have always existed. It is important to analyze and dissect materials from historical queer culture, because the Queer community has been ignored and silenced for centuries. Gender is also a topic that has been becoming increasingly relevant. The spectrum of gender and the non conforming aspects surrounding gender identity are often still seen as taboo by many people. It is important to explore and discuss the experiences of gender non-conforming people in order to fully understand and accept them. Using my analysis of Stone Butch Blues and my findings from the Madeline Davis Archive, I created a research paper that discusses the history of the Queer working class community in Buffalo and how that history is relevant and useful in understanding the current state of the community.

Oral Session II

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3:00-3:15PM, SAMC 170

The Decay of the World Wonder: Niagara Falls' Downfall by Politics in the Late 20th Century into the 21st

Hayley Rosa, History
Faculty mentor: Professor York Norman, History and Social Studies Education

This research examines the prolonged problem of New York State's City of Niagara Falls' worsening condition and decline by fault of politics from the mid-20th century into the 21st. The publication investigates two specific topic areas being the Love Canal and Urban Renewal, going into what specific actions by local and state politicians caused such massive decline as a result of their decision-making. Prior research involves the social aspect and chronological history of Niagara Falls development. However, compared to other publications they fail to analyze the larger and more cohesive picture of concurrent events that merge together to create the downfall of the City through suburbanization, population decline, and negligence by politicians. This research will go into such topics by using analytic methodology through government publications, newspapers, relevant books, and public opinion. By using sources such as the Niagara Gazette, writings from urban-planning theorist Jane Jacobs, and testimonies from Love Canal, this research will solidify that the reason for the City of Niagara Falls downfall can all tie back into one important idea: that it is the fault of decision-making via politics.

3:15-3:30PM, SAMC 170

Euler's Constant e and Some History

Gabrielle Capton, Mathematics
Faculty mentor: Professor Robin Sanders, Mathematics

The number e is a famous constant in mathematics; the value of e is approximately 2.7182818284… which is irrational and transcendental like pi. Associated with the exponential function e^x, e is also known as the base to the natural logarithm and has a unique property of being its own derivative in calculus. Having only vague concepts of e, I grew interested in investigating the constant known as Euler's number. As a direct result, it turns out that the origin of e is closely related to the following ideas: logarithms and compound interest. Logarithms developed out of the need to simplify complex calculations done by hand, contributed by John Napier. The modern concept of logarithms relies on a base to find the scaling of some argument, and in the eighteenth century, Euler established that the number e is the base to the

natural logarithm. Meanwhile, the formula for compound interest was well known in finance. Jakob Bernoulli had found that continuous interest in the following formula (1+1/n)^n (allowing n to increase indefinitely) approaches a limiting value of 2.71828. Thus, mounting evidence suggests the appearance of e in different areas of mathematics prior to its definition. My talk will develop some interesting ideas of e.

3:30-3:45PM, SAMC 170

The Collatz Conjecture: Finding Patterns in Chaos

Adam Goodnough, Applied Mathematics
Faculty mentor: Professor Robin Sanders, Mathematics

The Collatz conjecture, also known commonly as the Syracuse problem or the (3x+1) problem, is a simple procedure that has confounded the mathematics community for almost a century. At each iteration, if the number is odd we input the value into (3x+1), if it is even, we divide the value by 2. The conjecture is that all positive integers will iterate back to 1 over some number of iterations. There have been multiple ways in which people have approached this problem through number theory, Markov chains, and probabilistic methods, but a confirmation of certainty is still elusive. Although the mechanics are simple, the iterations it causes have a chaotic pseudorandom property from integer to integer. The number of iterations, also known as hailstone numbers, do present some trends along the lines of primality and particular digits in the original integer. By studying large data sets and their hailstone numbers we can analyze this pseudorandom behavior. Connections can be made to Brownian motion and the number of iterations have been seen to follow logarithmic probability. I will be discussing some of these concepts to better conceptualize the “patterns” of the Collatz Conjecture.

3:45-4:00PM, SAMC 170

Climbing The Cardinality Continuum

Dominic Kitterman, Mathematics
Faculty mentor: Professor Robin Sanders, Mathematics

What does it mean to be Real? This is what George Cantor was trying to answer when he made his infamous diagonalization argument. But this argument brought to light many new questions, not all of which we can currently answer. This presentation seeks to pose some of these questions giving some of the answers we know and explaining one of the questions that we can’t. Mathematicians like Cantor and Dedekind sought answers to many of the most base questions of mathematics that we take for granted today; and attempting to make sense of their conclusions can challenge our Intuitions on both math and numbers. The work of Ernst Shroeder and

Felix Bernstein further developed these ideas allowing us to apply our intuition to even uncountably infinite sets. Allowing Cantor's proof that for any set its power set always has strictly greater cardinality, to show that the power set of the naturals has the same cardinality as the reals. This begs the question however, "If the cardinality of the power set is always greater is there any set whose cardinality lies in-between a set and its power set?"

Oral Session III

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4:00-4:15PM, SAMC 151

Mental Health Impacts of Social Media on Content Creators and Consumers

Christian Smallhorne, Media Production
Faculty mentor: Professor Michael Niman, Communications

It's 2025 and faces buried in phones is the new norm. Social media is the force behind this. By definition, social media is a bunch of websites and applications that enable users to create and share content or to participate in social networking. As enjoyable as the use of social media often seems, there are a lot of cons that come with it. Applications ranging from Snapchat, to Instagram, to Twitter (sadly now X) and the recently surging TikTok. Being a photographer, I see social media impacts us heavily both in good and bad ways. I reside in Queens, New York but I'm a student attending Buffalo State University where I spend the majority of my time. I'm also a social media influencer, freelance, studio and event photographer, and student-athlete on the men's basketball team. My paper examines the impact of social media on the mental health of my peers and me. My methodology consists of a literature search of a recent scholarship which I use to contextualize my own experiences both positive and negative. I interact and work with social media both as a content producer and consumer.

4:15-4:30PM, SAMC 151

Unpaid Work Through Social Media

John Whipple, Communication Studies
Faculty mentor: Professor Michael Niman, Communications

My research examines how social media has become an unpaid job for some people. Social media is a place where people curate the fantasy of enviable lives, competing with each other to create representations of a more successful life. Focusing on the concept of "work" as in a job, I explore the results of studies and experiments regarding social media usage showing the negative psychological effects of spending too much time working on social media. Utilizing data from these studies, I document how our social media time becomes similar to a job that we must keep up with, responding to feedback in the form of likes and shares to constantly improve our brands. I look at both time spent directly on social media and time spent thinking, planning and creating content for a social media presence. I am also conducting primary research with people on campus. Asking them if I could check the statistics on their phone if they permit me to see their time spent on social media to get my

own data. Also asking their opinion of social media in order to get more ideas for my research. This topic is something that can be seen broadly but looking into the data behind it shows how much of an evolving issue it is.

4:30-4:45PM, SAMC 151

Vandalism, Graffiti, and Broken Windows

Noah Adams, Criminal Justice
Faculty mentor: Professor Clairissa Breen, Criminal Justice

Vandalism and the usage of graffiti persists in areas of neglect and decay. By observing and analyzing the problems associated with vandalism in terms of broken windows theory, methods of deterrence and mitigation can be established including community-based programs, security measures, and changes in policies with the goal of enhancing the conditions of suffering communities and reverse effects of urban decay. Illegal graffiti and vandalism infect buildings and communities, therefore careful consideration of all aspects surrounding the topic can be inspected to find potential solutions. This presentation will explain the causes of the issue and utilize first-hand research of graffiti and vandalism to analyze possible policy implications to reduce this criminal offense.

Decommodifying to Recapitalizing Queerness: Colonialism's Impact on African and American-Indigenous Music and Dance

Xinozea Ferguson-Giscombe, Africana Studies; Environmental Geography; Arts and Letters
Faculty mentor: Naila Ansari, Theater

"Grand Rising", a 22-track, multi-genre, historically referenced work focusing on the diasporic experiences of Queer African-American and Indigenous Americans. Said body of work is tailored to demarcating poignant periods in time regarding music, from the 1850s to the 1970s. What if queer people of color had a voice that was tantamount during each of these times? What if they were idolized? What would they say? Sonically, the reverberation of vocals, hymns, and chants dating back to negro-spirituals sits in the tail end and beginning of the album. Being that my signature style revolves around minor-key chord progressions through 3rds and 4ths, darkening topics such as lust, greed, envy, and death are navigated throughout. Literature, whether of the time or contextualized to fit the periods being sung through (1850s-1970s) are heavily utilized, such as poetry from the likes of Countee Cullen and James Baldwin. Beginning with a Negro Spritual, titled "Introsphere", which utilizes "Been in the Storm So Long" throughout it's progression, we gradually move into the likes of different sub-genres of Jazz, such as Techno-Jazz, Swing, Bebop, and Soul Jazz, eventually gravitating toward 50s-70s Rock. Introspection is also keen to the

development of this project, having personal qualms within certain verses, and specific songs. Furthermore, rock oriented sections vary in style as much as they do topic; with the hypersexualization and commodification of queer bodies being a focal point of the final section, comprising of 2 drawn-out songs.

Oral Session IV

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4:00-4:15PM, SAMC 170

Quaternions: When Imaginary Meets Reality

Niko Maziarz, Mathematics
Faculty mentor: Professor Robin Sanders, Mathematics

Any given night we can stare up into the stars and marvel at the possibilities the universe has to offer. In an ever-changing world, expectations of possibilities are endless, as the impossible is never truly impossible. Sometimes to understand the unknown we must simply drift to a place with no limits, and the quaternions do just that. This talk dives into the number system developed in 1843 by Mathematician William Hamilton, and the correlation to larger aspects of Group Theory, bridging the gaps of the known to the unknown. The quaternions expand what we know of the complex number system through the creation of a 4-dimensional divisional algebra with the introduction of j and k elements making up one of the largest rings in associative algebra forming a skew field. These ultimately solve the shortcomings that arise in 3-dimensional space from Eulers angle theorems, allowing for an efficient way to calculate rotations in space, which is crucial to modern day calculations in things such as spacecraft navigations, or even everyday imaging to games we use on a cell phone. With the vast potential and endless possibilities quaternions represent a significant movement for what's to come.

4:15-4:30PM, SAMC 170

Lebesgue Integration and Applications

Blaise Przybyla, Applied Mathematics
Faculty mentor: Professor Robin Sanders, Mathematics

In this research, examination is conducted of the functions, and characteristics thereof, that are not integrable under the Riemann definition, with special attention given to the Dirichlet function and its properties. The Lebesgue definition of integration is then defined, as well as associated concepts necessary for the understanding of Lebesgue's definition, such as measure and countability, with emphasis on how these topics relate to the Dirichlet function. Measure is defined and visualized using open intervals surrounding the rational numbers to determine that they have Lebesgue measure 0, and the same definition is then applied to the irrational numbers to determine that its measure is equal to the interval with which we are concerned, in this case [0,1]. Analysis is then made of applications of the Lebesgue integral, particularly in statistics, including expected value. The connection

between the Lebesgue integral and the calculation of expected value of possible outcomes, given that they are discrete and finite, is established and illustrated, using common probabilistic examples that are visually similar to the Dirichlet function. Brief mention is made of the Lebesgue integral's usefulness in Fourier transforms, physics, and finance to illustrate its importance in advancing numerous fields of study.

4:30-4:45PM, SAMC 170

RSA Encryption and Its Relation to Number Theory

Alhussain Ali, Mathematics
Faculty mentor: Professors Jane Cushman, Mathematics; Robin Sanders, Mathematics

It is evident in recent decades with the onset of AI and other modes of technology and coding that encryption and decryption is a necessary and integral part of the present and future advancements. Many methods of encoding and encryption have been tried and tested but one of the most famous and relevant forms is RSA encryption, also known as crypto system. In order to fully understand and appreciate the relationship between number theory and RSA encryption itself, we must first understand some of the history of both of these broad topics. Number Theory has historical roots in many different eras and civilizations through time, but in order to highlight the relationships between Number Theory and encryption, we will be looking at the more recent advancements made by number theory. More specifically, we will be looking at the topics regarding technology. In an article, Dunham explains number theory's history briefly when he says "Until the mid-20th century, number theory was considered the purest branch of mathematics, with no direct applications to the real world. The advent of digital computers and digital communications revealed that number theory could provide unexpected answers to real-world problems. At the same time, improvements in computer technology- enabled number theorists to make remarkable advances in factoring large numbers, determining primes, testing conjectures, and solving numerical problems once considered out of reach" (Dunham). The mention of prime numbers is I have started the research portion of my project and have found a few sources, mainly online but a few textbooks as well. I think I understand the general direction I intend to take this project, specifically highlighting the relationship between number theory and RSA encryption. However before I can show the relationship, it is necessary for any readers to have a basic understanding of both number theory as well as RSA encryption. In order to do that, I am starting with a very brief introduction into the history of both of these topics. Going forward, I will begin to laser in on how number theory, specifically, the use of prime numbers, is used in RSA encryption. Some little tangents I would like to explore further in the research paper are miscellaneous topics like amicable numbers and Euclid's fascination with the 1,2,3,4 pattern, as well as other practical methods of encrypting data.

Poster Session I
2:00-2:55, SAMC atrium

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Poverty and the Language Barrier in the Burmese Community

Araya Abrianna, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

My research question is, how are language barriers connected to poverty in the Burmese community? Burma, now called Myanmar, is a country with many diverse ethnic groups. Myanmar has had the longest civil war with an ongoing conflict for over 60 years. This conflict has impacted everyone in the region, regardless of age, gender and social class. Since 1948, ethnic minorities in Myanmar have been fighting a violent, bloody civil war to gain their freedom. Over 121,000 refugees from Myanmar have resettled in the United States since 2000. Buffalo, NY is home to a population of about 8,000 to 10,000 refugees from Myanmar. These people have helped in the city of Buffalo increase its population vastly for the first time due to the large amount of refugees resettling in Buffalo. I have collected data from local news articles, reports, and government sites to better understand the challenges faced by the Burmese people in Buffalo. I found that they experience many problems, often due to language barriers, including getting effective healthcare and employment. Many experience poverty due to a lack of support. There are several community agencies that try to help them. These agencies are The Hope Refugee Drop-In Center, Jericho Road Community Service, Burmese Community Support Center, the Burmese Community Services, and the Karen Society of Buffalo. With my poster, I want to bring awareness to the importance of supporting the Burmese community in Buffalo with language support.

Redefinition of Femininity: 1950's Women's Trousers

Cecilia Aceves Minakata, Fashion & Textile Technology
Co-author: Rounak Faraj, Trayvel Patterson, Preston Southlea
Faculty mentor: Professor Arlesa Shephard, Fashion & Textile Technology

This research explores the evolution of women's trousers from the 1940s to the 1950s, examining how societal norms, wartime practicality, and cultural shifts influenced their adoption and acceptance. The purpose of this study is to analyze the intersection of fashion, gender roles, and historical context, highlighting how women's trousers became a symbol of empowerment and changing social dynamics. During the 1930s and 1940s, women began wearing trousers out of necessity, due to World War II, when they entered the workforce in high numbers. Societal resistance persisted; trousers were seen as masculine and inappropriate for women in many settings. Playsuits emerged as a transitional style, offering a more socially acceptable alternative for leisure activities with a sense of femininity, helping normalize the idea

of women wearing pants in casual settings. By the 1950s, trousers evolved into fashionable garments, with styles like Capri pants and tailored slacks gaining popularity, also due to Hollywood icons and designers who challenged traditional gender norms. From evolution to impact, 1950s pants symbolized societal progress, offering women greater freedom and redefining their roles in both fashion and everyday life. This shift reflected a broader cultural change, as pants and jeans became symbols of independence and modernity. The 1950s also saw the rise of high-waisted, curvy designs that celebrated women's bodies, further solidifying trousers as a versatile and empowering garment. Our research shows that trousers were not just a fashion trend but a radical statement against restrictive gender roles and the redefinition of femininity.

Protecting Our Future: Understanding Challenges and Solutions for Children's Well-Being

Rina Akter, Social Work
Faculty mentor: Professor Amy Manning, Social Work

Children are among the most vulnerable populations, facing numerous challenges that impact their well-being, development, and future success. This presentation explores the critical issues affecting children, including poverty, abuse, neglect, and lack of access to essential resources. Through an integrative approach, we examine the role of social work and child protective services in advocating for children's rights and ensuring their safety. Drawing on research, policy analysis, and real-world case studies, this presentation highlights effective intervention strategies and the importance of a multidisciplinary approach in addressing these concerns. By raising awareness and promoting collaborative solutions, we aim to empower professionals, caregivers, and communities to take meaningful action in safeguarding children's futures.

Link Between Poverty and Adolescent Mental Health in Buffalo, NY

Hannah Alley, Psychology
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

How does poverty impact the mental health of children in Buffalo, NY? Poverty is widely known as a major contributing factor in adverse childhood outcomes, especially in mental health. In Buffalo, New York, poverty has remained persistent without much improvement for the past few decades, and approximately 27.4% of Buffalo residents are living below the poverty line. This reality poses a variety of challenges for families in Buffalo, thus contributing to the exposure of toxic stress to children living with adversities such as food insecurity, unsafe living conditions, and inadequate healthcare. Research has shown that exposure to poverty during early childhood can increase the risk of negative mental health outcomes into adulthood.

Growing up with chronic stress can have many extreme impacts on developing children, such as depression, anxiety, and behavioral issues. To explore this connection, data was collected through a review of existing studies on the impacts of adverse childhood experiences with a focus on poverty and local census data and statistical reports. The significant link between poverty and adolescent mental health concerns in Buffalo requires a collaborative approach between families, schools, mental health services, and initiatives aimed at improving the city's economic conditions. Addressing these challenges is critical to ending the cycle of poverty and promoting a more positive and sustainable quality of life for Buffalo's youth.

Combating Hunger: Food Insecurity in the West Side's Hispanic Community

Freddy Arzuaga, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

How can culturally responsive interventions address food insecurity among Buffalo's West Side Hispanic residents while overcoming barriers to existing support programs? It is not a myth that food insecurity across the United States has impacted minorities, especially the Hispanic population. I examined local census data, statistics, and local reports to compare them with data nationwide to understand if what's happening across the United States is also happening here in Buffalo. During the year 2021, Buffalo's West Side experienced a food insecurity rate that was almost half as high as the national average when compared to nationwide figures of the same demographic. The research reveals the necessity to design solutions that respect the community's cultural requirements while establishing sustainable food security structures. The obstacles that prevent families from obtaining healthy food and accessing support programs stem from financial difficulties combined with cultural disparities and language barriers. Educational nutrition and cooking programs combined with school partnerships and community projects such as culturally suitable gardens and farmers' markets represent recommended effective strategies. Community members will experience better health outcomes thanks to ongoing availability of nutritious food supplies. I hope that my poster will raise awareness about these issues in our community and motivate West Siders to collaborate to eliminate hunger in our neighborhood.

Mindfulness in College Students: Associations with Anxiety

Cassidy Baron, Psychology
Faculty mentor: Professor Kimberly Kamper-DeMarco, Psychology

In our modern-day society, anxiety runs rampant, affecting a wide range of individuals all over the globe. Between the years 1990 to 2019, anxiety rates increased from 194.9 million to 301.45 million cases globally (Javaid et al., 2023). Within a ten-year span, anxiety rates among adults ages 18-25 had the most rapid anxiety level

increase compared to other generations, jumping from 7.97 to 14.66% (Goodwin et al., 2020), underlining the importance of implementing prevention and management techniques aimed at college students. This study intends to explore the effectiveness of a brief mindfulness meditation on state-anxiety and mindfulness levels with college students from Buffalo State University. To practice mindfulness means to be aware of the present moment with a curious sense of acceptance, and without judgement of the thoughts or emotions that add to one's current experience. An online guided meditation, informational mindfulness video, and in-person group workshop will be methods of mindfulness practice used to compare the effectiveness of varying techniques. Perceived stress, trait-anxiety, and self-control will also be assessed to explore moderation effects. It is hypothesized that mindfulness meditation will significantly lower state-anxiety scores for all groups, with the in-person group workshop being the highest. It is also hypothesized that mindfulness meditation practice will significantly increase mindfulness scores in students, with the in-person method being the most effective here, as well. Perceived stress, trait mindfulness, and self-control scores are hypothesized to be moderators, such that higher levels will result in mindfulness meditation to have an altered effect for students.

Empowering Children, Strengthening Families: The Impact of Social Work

Andriel Billups, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

In social work, competencies are essential skills that guide professionals in supporting individuals, families, and communities while promoting social justice. These skills help address systemic issues, advocate for change, and provide effective services. During my field placement at Child and Family Services, I have applied these competencies while working with children and families in residential treatment. Child and Family Services provides therapeutic support and family reunification services, ensuring children have a safe environment to heal from trauma and regain stability. Through these experiences, I have learned to navigate the child welfare system, advocate for social justice, and support children and families facing significant challenges. Working closely with children and families, I have gained a deeper understanding of the complex dynamics that contribute to their struggles, including trauma, mental health issues, and systemic inequalities. I have seen firsthand how access to resources can be limited for vulnerable populations, and how policies can either support or hinder their progress. This has strengthened my commitment to advocating for social justice, ensuring children and families receive the support and care they need to overcome these challenges. My field placement has also deepened my understanding of systemic barriers, such as poverty, inadequate resources, and biases that can affect the quality of services. I have witnessed how these barriers impact the well-being of children and families and how crucial it is to address them. This experience has reinforced my belief in the need for continued advocacy, promoting equity and justice in the child welfare system.

The Development of an HVAC System: ASHRAE Design Competition

Connor Bizal, Mechanical Engineering Technology
Co-author: Anthony Estrada, Christian Crandall, Miya Silva
Faculty mentor: Professor Jikai Du, Engineering Technology

Every year, the American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) holds a student competition surrounding the design of a heating, ventilation, and air conditioning (HVAC) system. For this competition, our objective is to design the HVAC system for a medical facility in Manchester, England. In order to do so, we will be considering heating and cooling loads due to factors such as environmental conditions and building occupancy levels. Through the resources given by ASHRAE, such as industry standards, engineer drawings, weather data, and project parameters, we will be taking concepts we have learned in the classroom and transferring them to a real-life application. Along with these helpful resources, we will also be receiving consistent guidance and expertise from a local professional engineer from Wendel Companies. Technology will also be playing a prominent role in our journey, as we will be utilizing Carrier's Hourly Analysis Program software to perform calculations and simulations and also AutoCAD software to help with dimensioning the building's room and corresponding drawings. As our research on zoning, insulation, wall thickness, and general heat transfer concepts enhances, we firmly believe our HVAC system design will be one of efficiency and effectiveness.

Intersectional Idenity:Beautiful Inteligent Talented Creative Human Collection

Brian Bussard, Fashion & Textile Technology
Faculty mentor: Professor Shantell Reid, Fashion & Textile Technology

In the world of Fashion you find nothing but gender exclusive clothing. What my creative work and research will present is the up and coming trend of clothing adapting to the changing times. My designs from start to finish will show history coming full circle with my fashion designs. My research will also show the trends that are happening right now and how gender inclusion will be the trends happening. If you can see the human then you can dress the human and not the gender. I will show before the modern age that clothing was about status and not gender and how clothing today can be about people and not genders like what we see in history. Fashion has many restrictions when it comes to gender exclusive clothing and not making them inclusive. As a person who was born Inter-sexed and having to deal with both male and female hormones this plays the biggest role in my intersectional identity as a human being. therefore my collection will show that gender has no place in fashion anymore than it did in history.

Effects of Poverty on Childcare

Jillian Caine, Psychology
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What does poverty and childcare look like in Buffalo? As of 2025, 16% of all children in the United States, 11.4 million children in total, are living in poverty. On average, the early care and education settings attended by many low-income children, provide quality at levels too low to adequately promote children's learning and development. In most regions of the country, families with young children are spending more on childcare than they are on housing, food, or healthcare. I will understand how poverty is affecting childcare in Buffalo by examining local data and reports. In western and central New York, nearly one in five families with children under 5 years old have incomes below the poverty level. Government programs, and the establishment of Head Start has been a development to address this issue. I expect to find information on why efforts to decrease childcare expenses didn't last, and what we can do as a community to support children in need. I hope that the information I discover can help the future of our children, and that we can grow to understand the struggles of low-income families supporting their children. It is important to work together as a society to support one another in times of need, especially for the future of our country.

Cycle of Inspiration: The Successes of a Non-Traditional Student

Dariana Candelario, Special Ed. & Childhood Ed.
Faculty mentor: Professor Pixita del Prado Hill, EELEL

This research proposal aims to explore the experiences and successes of non-traditional college students, with a special focus on the role The Belle Center, a community resource center located in Buffalo, New York, plays in supporting their academic journeys. By combining personal journal entries, reflections, interviews, and existing research, this proposal will examine the impact of life responsibilities, career transitions, and the support systems available through community organizations like The Belle Center. Additionally, it will explore how inspiration cycles through The Belle Center, becoming a visible force among its past and present staff members, and contributing to a culture of support for P-12 and college students. The research will highlight how The Belle Center has fostered academic success and personal growth for non-traditional students, like myself, and others in similar circumstances. By analyzing both qualitative personal experiences and quantitative data from existing research, this proposal seeks to showcase the resilience and adaptability of non-traditional learners while providing insights into how community-based resources and higher education institutions can further enhance student success.

The Impact of Economic Disparities on Health Equity: Buffalo's Poverty-Stricken Communities

Camryn Coughlin, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

How does poverty impact health equity in Buffalo? Access to equitable healthcare in the United States has long been a significant concern for poverty-stricken citizens. Disparities in healthcare based on race, ethnicity, gender, class, age, and socioeconomic status is why our nation stands out for lack of equitable healthcare. This issue is especially prominent in Buffalo, given its drastic socioeconomic groups and high poverty rate. Through mixed methods of data collection, including analysis of local assessment statistics and virtual interviews, the relationship between poverty and health equity was examined. Preliminary results suggest a strong correlation between Buffalo's impoverished communities and access to equitable healthcare in Buffalo. Many Buffalo residents lack transportation to adequate healthcare facilities and cannot afford health insurance. Statistics have also shown large health disparities in regard to race, specifically negatively impacting the Black community. Through the insights obtained from interviews with directly affected individuals, I can expect to find a consistent pattern of a miniscule amount of health resources, along with a universal desire for change and improvements. Through this presentation, I aim for my audience to understand the meaning of health equity and raise awareness of one of the many impacts of poverty that often goes unnoticed. I hope to shed light on many local DEI programs that work directly to improve health equity in Buffalo and inspire actionable solutions. This presentation intends to spark conversation and advocate for enhanced healthcare equity for Buffalo's impoverished residents.

Enhancing Writing with SRSD Using the POW + TREE Strategy for Students with Disabilities

Kaylin Craig, Special Education and Childhood Education
Faculty mentor: Professor Shannon Budin, Exceptional Education

This research presentation examines the effectiveness of the Self-Regulated Strategy Development (SRSD) using the POW + TREE strategy in improving the writing skills of students with disabilities. POW (Pick a topic, Organize, Write) and TREE (Topic sentence, Reasons, Explanations, Ending) provide a structured approach to support students in organizing their thoughts with a graphic organizer, and using it to develop complete, coherent sentences. This is implemented with the use of a Choice Board, allowing students to pick their topic from a table of choices. It increases student motivation to write, as shown through observation data in a table. The study tracks student progress through two graphs that quantify the data: a line graph measuring the inclusion of each TREE component in student writing and a line graph displaying the total number of words written over time. Additionally, a video reflection tool "Vosaic" was implemented by myself to assess and improve my instructional delivery,

allowing for self-evaluation and changes to instruction. Findings indicate that structured writing strategies with a graphic organizer, combined with reflective teaching, lead to measurable improvements in writing quality and sentence completeness for students with disabilities.

400 Hours of Fun, Learning, and Maybe a Little Chaos!

TerriJamel Curry, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

For my senior year internship, I was placed at Holy Cross Head Start (HCHS), where I dedicated 7 hours a day, for 3 days a week to gain hands-on experience in social work. HCHS serves children from low-income families, focusing on dental hygiene, nutrition, physical well-being, and academic development. Working alongside dedicated staff, teachers, and children aged 2 to 5, I gained experience in updating, documenting, and reviewing children's medical and dental interactions, treatments, follow-ups, home visits, and overall progress- ensuring accuracy and compliance with federal standards. I participated in Cavity Free Kids events, both in-person and virtual, and collaborated with families by attending monthly parent-center meetings. Whether dressing up as a giant tooth, leading dental hygiene lessons, assisting in HCHS recruitment tabling, helping create Individualized Health Care Plans, or supporting teachers in the classroom, I embraced every opportunity to make a difference. This internship not only deepened my passion for social work but also reinforced my commitment to making a positive impact in children's lives.

Fired Up, But Keeping It Low: Low-Fire Glazes for Ceramic Surfaces

McKenna Davis, Ceramics BFA
Faculty mentor: Professor Colleen Toledano

This research investigates low-fire ceramic glaze techniques as a way to expand the surface qualities and expressive range of ceramic sculpture, while also reducing the risk of structural issues like cracking, slumping, and warping that can occur during high-temperature firings. The project centers on testing a variety of low-fire glazes layered over different metal carbonates and oxides—including, but not limited to, copper carbonate—as a way to explore new surface effects. While I've previously used this technique with a single combination (a dry engobe over copper carbonate), this research broadens that scope to uncover a wider range of textures, color responses, and visual depth achievable at low temperatures. The goal is to apply these findings to my sculptural work, using the surface as a tool to more fully express the ideas and qualities I'm aiming to convey.

Empowering Communities Through Creativity and Support: Engaging, Assessing, and Intervening in a Housing-Based Setting

Sean Denniston, Social Work
Faculty mentor: Professor Amy Manning, Social Work

My internship focuses on fostering community engagement and empowerment through direct support, creative programming, and resource accessibility. By applying anti-racism, diversity, equity, and inclusion (ADEI) principles, I work with diverse populations, ensuring that programming and services are inclusive and responsive to tenants' unique needs. Many individuals I assist face systemic barriers related to housing, healthcare, and financial stability, requiring a culturally competent approach to service delivery. Through client assessments, I help individuals identify challenges in accessing resources, guiding them through housing applications, social services, and other critical supports. These assessments allow me to understand their specific needs and connect them with appropriate interventions. A key component of my internship involves developing and leading DIY crafting sessions as an intervention strategy. These sessions provide tenants with stress-relieving, skill-building opportunities that promote self-sufficiency, creativity, and social connection. By teaching practical skills such as bookbinding, lantern-making, and crochet, I offer participants cost-effective alternatives to store-bought items while fostering a sense of community. This hands-on approach aligns with a client-centered intervention model, allowing tenants to engage in meaningful activities that enhance their well-being. My presentation will showcase how these efforts contribute to a more inclusive, resource-accessible, and empowered community.

Sleep, Academic Performance, and Executive Functioning

Danika DiRienzo, Psychology
Co-author: Emily Goodstal,
Faculty mentor: Professors Howard Reid, Psychology; Kimberly Kamper-DeMarco, Psychology

Many students while attending undergraduate college put themselves under extreme amounts of stress to perform at a high level. These students will sacrifice their sleep to achieve a well-rounded education and good grades, often turning to caffeine as a compensatory mechanism. However, sleep is crucial for efficient cognitive processing; thus, lack of sleep can negatively influence college students' academic performance. The current study is in progress and utilizes a Qualtrics survey. The self-report survey asks what time they went to sleep and their wake-up time for a full week (Sunday-Saturday) to measure sleep. Participants also answer the Stroop Color and Word Test to measure executive functioning. Another self-report survey called the SRQ is being used to measure executive functioning that the Stroop Color and Word Test does not cover. Caffeine consumption is being measured through a self-report survey. Finally, academic performance is being measured by asking for

their GPA. We predict that lower amounts of sleep will be associated with lower levels of executive functioning and academic performance and higher levels of caffeine use.

How Lead Affects Soil Quality in Urban Areas

Madine Djibrine, Geology
Faculty mentor: Professor Elisa Bergslien, Geosciences

Lead contamination harms soil health by reducing fertility, inhibiting plant growth, and posing serious health risks. My research aims to assess lead levels in urban soils by testing samples from different locations. I will measure lead concentration (ppm) to evaluate contamination impacts, comparing an industrial site with a history of lead pollution to a non-industrial area with minimal exposure. Major sources include industrial pollution and residues from lead gasoline. The selected research sites are the area around Tonawanda Coke Corporation and the area around Delaware Park. I will collect soil samples from both locations and compare their results. Laboratory testing will be used to compare results and identify contamination patterns. An X-ray fluorescence spectrometer (XRF) will analyze soil samples for heavy metal concentrations. The collected data will be organized in Excel to generate graphs, and historical data from other sources will be used for comparison. I expect to find patterns of lead distribution that relate to land use and wind direction. Understanding the impact of lead on urban soil is essential for ensuring safer urban farming and gardening. As someone who loves gardening, I see this as an opportunity to deepen my understanding of soil health and how to maintain it. For this research I will be able to find soil quality for gardening by identifying contamination risks and determining which sites contain heavy metal concentrations. This research will also raise awareness, helping others determine whether their soil or health is at risk from lead poisoning.

Chesterton's History 231 Newspaper Project: World News of the Colonial and Imperial Age

Christopher Draper, History
Co-author: Connor Doyle, Jabbar Jones
Faculty mentor: Professor Bridget Chesterton, History and Social Studies Education

This project entailed creating newspaper articles based in different time periods from the year 1500 through World War I. The five different articles we wrote take on the perspective of journalists reporting on significant events that occurred in various places throughout the globe during the period in question and reporting back to London. Historical context for the speed at which the news would have been received and distributed is taken into account for the minor detail of dating each piece. Our group pulled information from primary sources and university databases. The creative project enabled us to allow the reader to take on the role of a subject, and to

educate on historical events that are often overlooked within the modern, mainstream context. Direct, first-person perspectives are required to get a visualization on what happened in any of the mentioned events. For example, the initial newspaper article on the Siege of Vienna in 1683 covers what transpired, who was involved, and the final outcome of the siege while maintaining the facade of a loyal subject of the crown. The delivery of the news is also tinged with in-character rhetoric, filling the role to immerse the reader in how the information may have been presented to them at the time. The character presentation could be a common person, military leader, or an antagonist to the article.

The ABCs of Cryptids

Emily Engel, Art and Design: Graphic Design
Faculty mentor: Professor Shasti O'Leary-Soudant, Art & Design

This ABC book is a visual exploration of the creatures that haunt our collective imagination. Through the visceral vernacular of linocut relief printing, I aim to unearth both fear and wonder rooted in stories of cryptids, monsters, and ghosts from around the world. By using the linocut printing process, I aspire to reflect the true nature of these legendary beings. Each creature is rendered with bold lines and stark contrasts and a tactile quality that emerges from the carved linoleum. The inherent imperfections of the print lend an authentic feel to the work. "The ABCs of Cryptids" explores the psychological and cultural significance of the creatures depicted in folklore and fairytales. By stripping away the layers of modern interpretation, and returning to the hand-crafted interpretation of the image, I hope to reignite the sense of awe and unease and curiosity that these stories were meant to evoke.

Enhancing Outreach and Support: A Social Work Internship with Buffalo's Homeless Population

Rheya Fisher, Social Work
Faculty mentor: Professor Amy Manning, Social Work

As an undergraduate social work intern at BestSelf Behavioral Health in Buffalo, I have had the opportunity to engage directly with individuals experiencing homelessness, providing essential support and services. My position requires that I conduct assessments, develop case plans, and connect clients to vital resources, such as housing, mental health care, and substance abuse services. I have utilized motivational interviewing techniques to build rapport and encourage clients to explore and commit to change in a non-judgmental, empathetic way. This approach has been especially effective in helping clients overcome barriers to stability, such as trauma and mental health challenges. Through my interactions with clients, I have helped individuals identify their strengths and goals, facilitating a collaborative path toward self-sufficiency. Additionally, I have participated in team meetings and case reviews,

where I've collaborated with other professionals to ensure clients receive comprehensive care. For my presentation, I plan to share my experiences in utilizing motivational interviewing with the homeless population, focusing on how this approach fosters empowerment and enhances engagement. I will also discuss the challenges of navigating complex systems to achieve housing stability. My presentation aims to highlight the impact of client-centered, trauma-informed, and evidence-based practices in addressing homelessness in Buffalo.

The Digital Divide of Workplace Dynamics: A Sociological Analysis of Jobs in the Information Technology Field

Noah Frys, Computer Information Systems
Faculty mentor: Professor Amitra Wall, Sociology

This study explores the critical role of social skills and emotional intelligence in the Information Technology (IT) field, challenging the stereotype that IT professionals lack interpersonal abilities. Key areas of focus in this research include presentation skills, verbal communication, creativity, and mentorship. Recognizing that workplace culture and social dynamics are essential to professional success, this study examines how these factors intersect with technical expertise in the IT sector. Using content analysis to review job postings, the study identifies patterns related to workplace culture, values, roles, and intersectionality within the IT field. By analyzing these job descriptions, the study sheds light on the societal implications of the skills that companies prioritize, highlighting the importance of both technical and interpersonal skills in the recruitment process. The findings aim to bridge the gap between industry demands and academic preparation, with particular relevance to institutions like Buffalo State University. Ultimately, this research has the potential to inform curriculum development and career preparedness initiatives, ensuring that future IT professionals are equipped not only with technical expertise but also the necessary soft skills to succeed in the workplace.

Analyzing New York's Renewable Energy Trends Using Machine Learning

Nidhish Abhijit Gore, Data Science & Analytics, MS
Co-author: Kamal Nikhil Gokavarapu, Chirag Ohri
Faculty mentor: Professors Saquib Ahmed, Engineering Technology; Joaquin Carbonara, Mathematics

Clean energy technologies, encompassing renewable resources like solar, wind, and hydropower, are essential in the global effort to reduce greenhouse gas emissions and combat climate change. As the globe prepares to transition away from fossil fuels, understanding the factors and parameters influencing the penetration of clean energy into existing energy markets has become a critical step. Controversies surrounding the environmental impacts of renewable technologies, variability in market structures, and economic pressures on clean energy companies can

complicate this transition. Thus, resources must be focused in the right areas to ensure the growing demand for sustainable energy solutions is being met adequately. Strategic investments in high-potential parameters, alongside targeted policy interventions and technological advancements, can maximize the impact of clean energy initiatives while ensuring long-term sustainability and economic viability. This study leverages machine learning models to analyze and focus on geographic as well as policy-driven parameters that have influenced clean energy adoption over the past few years, focusing on various regions in New York State. Key parameters analyzed include solar and wind potential, average energy prices, subsidy amounts, grid capacity, public awareness, renewable and fossil energy market shares, and policy support indices. Despite challenges such as market variability and infrastructure limitations, this research offers a data-driven blueprint to bridge demand-supply gaps and guide policymaking, making sure energy investments are focused in the right areas, fostering a sustainable energy future.

Supporting Domestic Violence Survivors: Insights from My Haven House Field Internship

Katie Green, Social Work
Faculty mentor: Professor Amy Manning, Social Work

During my field internship at Haven House in Erie County, NY, I have engaged in advocacy and empowerment-focused activities to support survivors of domestic violence. My work has centered on providing supportive listening and safety planning while promoting healing through both individual client and group interactions. A key aspect of my internship has been creating and leading recreational activities that empower clients by helping them regain confidence, develop coping skills, and foster independence. Events such as Spa Night, Jeopardy, Board Game Night, a Book Fair, a Halloween Party, a Carnival Event, and Science Night provide survivors with meaningful opportunities for relaxation, social connection, and personal growth. These interactive experiences not only offer stress relief but also create a supportive environment where clients can build resilience, strengthen their sense of community, and engage in positive, healing-focused activities. In addition to facilitating recreational activities, my role involves advocating for clients by helping them access essential resources, navigate complex systems, and strengthen their independence in decision-making. My presentation will showcase the impact of these advocacy efforts and empowerment activities on client well-being, highlighting the significance of holistic support in promoting resilience and recovery. Through this work, I aim to illustrate how social work interventions that integrate advocacy with trauma-informed care can foster meaningful and lasting change for survivors.

Supporting the Journey: Social Work Internship in Refugee and Immigrant Services

Eden Harrison, Social Work

Faculty mentor: Professor Amy Manning, Social Work

This poster will highlight my internship experience at Journey's End, an organization dedicated to supporting immigrants, refugees, and asylum seekers as they navigate the challenges of resettlement. The presentation will explore how social work competencies such as engaging in policy practice, engaging diversity and difference in practice, and engaging in practice-informed research and research-informed practice are applied to assist individuals in securing housing, employment, legal resources, and community connections. A key focus of the poster will be the role of social justice in refugee resettlement, emphasizing the systemic barriers that displaced populations face, including economic hardship, healthcare access, and language barriers. Statistics will be incorporated to demonstrate the impact of resettlement programs and assess service gaps. By reflecting on hands-on experiences from the internship, this poster will provide insight into the real-world application of social work principles in refugee resettlement. It will also emphasize the importance of policy reform and community collaboration in creating equitable opportunities for displaced individuals. Ultimately, this presentation will showcase how internships like this help shape future social workers while advancing the mission of social justice.

Applied Experience in Empowering Women at the YWCA

Abby Hill, Social Work
Faculty mentor: Professor Amy Manning, Social Work

This poster highlights the learning experience gained at the YWCA of the Niagara Frontier, where the focus is on empowering women and those who've experienced domestic violence. It covers key social justice themes, the practical application of social work competencies, and the intersectional challenges faced by the women. The experience has shown how essential it is to advocate for vulnerable populations and work toward positive, real-world change.

Bridging Gaps: A Social Work Intern's Role in Schools

Rachael Hunt, Social Work
Faculty mentor: Professor Amy Manning, Social Work

As a social work intern at a Buffalo Public School, my role involves providing critical support to students facing social, emotional, and academic challenges. Schools serve as a primary environment for youth development, and social workers play a crucial role in fostering student well-being and success. My internship focuses on intervention strategies, including individual counseling, group work, crisis response, and collaboration with teachers, families, and community resources.

This project examines the impact of school-based social work on student outcomes, emphasizing the importance of addressing mental health, behavioral concerns, and social-emotional learning within the educational system. Through direct practice and research, I explore effective methods for building student resilience, promoting positive behavioral change, and advocating for systemic improvements in school support services. My presentation will highlight key findings from my internship experience, including case studies, intervention techniques, and best practices for supporting at-risk students. Additionally, I will discuss challenges faced by school social workers, such as resource limitations and barriers to service accessibility. By sharing these insights, I aim to contribute to a broader understanding of the value of social work in schools and the need for comprehensive student support systems. This research underscores the necessity of integrating social work principles into education, advocating for policies that prioritize student well-being, and strengthening the collaboration between social workers, educators, and families to create inclusive and supportive learning environments.

Touched by Cancer

Logan Hurley, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

In 2024, approximately 14,910 individuals in the United States between the ages of 0-19 received a cancer diagnosis (Cancer in Children and Adolescents, 2024). My personal mission is to create a safe space for not only the individuals' receiving this news, but their support systems as well. Grieving has no timeline. During the Fall 2024 and Spring 2025 semesters, I have completed 400 hours as an intern with Kaely's Kindness Foundation, an organization which supports over one hundred female teens, touched by cancer throughout Western New York, with their emotional, physical, and practical needs. Since the start of this foundation, twelve years ago, sixteen of "Kaely's Kindness warriors" have passed. Even after a passing, the individuals' families are continuiously supported. My role as an intern allowed me to apply skills I have developed throughout the Social Work Program. I primarily worked with the youth of this organization by connecting them with appropriate resources, leading grief support groups and fundraising for their individual needs. My priority was building strong professional rapport with the girls, so they could feel heard. Kaely's Kindness Foundation has positively impacted my motivation to educate clients, families and communities on the uniqueness applied to the grieving process.

Supporting Children: Respite and Community Habilitation with Community Services for Everyone

Shazeda Islam, Social work
Faculty mentor: Professor Amy Manning, Social Work

As an intern with Community Services for Everyone, I provide respite and community habilitation services to children with developmental disabilities, helping them build skills and independence in a supportive environment. Our Behavior Intervention Program offers in-home behavioral and parenting support to children, adults, and parents with developmental disabilities. Through collaborative in-home evaluations, we assess behaviors and develop individualized, family-centered plans that address specific needs. As a Behavioral Health Technician, I work alongside Behavior Intervention Specialists (BIS) to train families in implementing evidence-based techniques designed to manage or eliminate challenging behaviors. By providing support in a familiar setting, we create a sense of security and consistency, which is crucial for meaningful progress. My role includes assisting children with daily activities, promoting social engagement, and reinforcing positive behaviors that enhance their overall quality of life. This hands-on experience has deepened my understanding of behavioral interventions and their impact on both individuals and families. In my presentation, I will discuss the importance of respite and community habilitation services, the strategies used to support children with developmental disabilities, and the ways in which these interventions improve family dynamics. I will also share insights gained from working directly with children, highlighting real-world applications of behavioral techniques. My goal is to emphasize the significance of community-based services in fostering independence and improving the well-being of children with developmental disabilities while showcasing the vital role of behavioral health professionals in this process.

The ABC's of Sports

Dekari Jackson, Art & Design
Faculty mentor: Professor Shasti O'Leary-Soudant, Art & Design

The ABC's of Sports is a children's book that I will be creating and publishing this semester. The book will be 28 pages long with a page dedicated to each letter of the alphabet. Each page will contain one sports term that coincides with the letter on that page. An illustration of an animal acting out said sports term will also be included as well as a definition of the term. The purpose of this book is to introduce children to the basics of sports in a way that is visually engaging and entertaining for them. I will research the behaviors of the animals that I illustrate in order to illustrate them in a way that represents the traits of the animal.

Exploring the Impact of COVID-19 on Risk-Taking Behaviors among Emerging Adults

Alana Jacowitz, Social Work
Faculty mentor: Professor Amy Manning, Social Work

The world underwent a dramatic shift in 2020 when COVID-19 disrupted daily life and fundamentally altered how people interacted. Schools transitioned to online learning,

forcing students worldwide to adapt to new educational formats. However, the shift extended beyond academics—social interactions, routines, and developmental milestones for young adults were also significantly impacted. In light of these changes, this research seeks to answer the question: How has COVID-19 affected risk-taking behaviors among current emerging adults? To investigate this, we developed a survey designed to assess various risk-taking behaviors among individuals aged 18-26. Our study examines behaviors such as sexual activity, substance use initiation and frequency, and reckless driving. Additionally, I introduced the construct of petty crime, focusing on the initiation and expectations surrounding minor delinquent behaviors in this age group. By analyzing these behaviors, we aim to understand how the disruptions caused by COVID-19 may have influenced decision-making and engagement in risky activities. This presentation will explore the initial survey findings, including an analysis of collected responses and participant comments. By examining trends in risk-taking behaviors post-pandemic, we seek to uncover patterns that may inform future prevention and intervention strategies. As we move forward, we will refine our survey to develop a more comprehensive profile of risk initiation among emerging adults. Our goal is to contribute valuable insights to the field of prevention research and enhance our understanding of the long-term effects of COVID-19 on young adults' decision-making and behaviors.

Lung Cancer Rates and Environmental Exposures

Franele Johnson, Psychology
Co-author: Christopher Fields,
Faculty mentor: Professor Elisa Bergslien, Geosciences

This research project investigates the relationship between land use and cancer rates in Western New York, focusing on Lewiston, NY, the Niagara Falls Storage Site (NFSS), and the former Lake Ontario Ordnance Works (LOOW). The study also incorporates findings from the Love Canal Follow-up Health Study, and Cancer Study Community Report to assess long-term health impacts in affected communities. The project aims to identify environmental factors contributing to elevated cancer rates by comparing various collection-based resources. Information from those media sources both governmental and non-governmental databases containing environmental and demographic information. Research locations were selected based on proximity to suspected contamination sites such as the NFSS, LOOW, and Love Canal. Analytical methods target potential carcinogenic substances linked to past land use events. Research done at other locations suggests that environmental contamination has disproportionately impacted low-income communities, resulting in long-term health and social challenges, underscoring the need for continued environmental monitoring and public awareness campaigns to promote cancer screenings in impacted communities. It is suspected that we'll find a direct correlation between historical land use practices and increased cancer rates in certain regions. It is also expected that the collected data will demonstrate both interconnected and distinct environmental factors contributing to these outcomes. Given that cancer risk tends to increase with

age, continued monitoring of these communities is essential. These results emphasize the urgent need for ongoing environmental surveillance, public health initiatives, and targeted cancer screening programs in regions impacted by historical land use practices such as the Niagara Falls Storage Site, the former Lake Ontario Ordnance Works, and the Love Canal.

Assessing the Academic Performance and Resource Utilization of Statistics Students

Meghan Johnson, Psychology
Co-author: Lauren Thomas,
Faculty mentor: Professors Howard Reid, Psychology; Kimberly Kamper-DeMarco, Psychology

During the Fall 2024 semester, the teaching assistants and statistics professors realized student performance was inconsistent with the number of students reaching out for help. The purpose of this study was to analyze the relationship between academic performance and utilization of resources for Psychology students enrolled in Statistics. Students were given questionnaires in their statistics class and asked about their performance, how often they utilized the help within the Psychology department, and potential reasons for not attending office hours and review sessions. Preliminary data will be presented. We aim to improve the usefulness and accessibility of the provided help to better support and meet the needs of students in statistics.

Assessing OCD and Stress Disorder Symptoms Across the Menstrual Cycle

Lillyan Kingsbury, Psychology
Faculty mentor: Professor Naomi McKay, Psychology

Previous empirical research alludes to cognitive mechanisms such as emotional regulation skills playing a mediating role in the fluctuation of severity of negative anxiety symptoms across the luteal phase (Manikandan et al., 2016). Researchers have also assessed obsessive compulsive disorder (OCD) symptomology such as error-related negativity and checking symptoms across the menstrual cycle and found that symptom severity was reported to be higher during the mid-luteal phase (Mulligan et al., 2019). Existing literature lacks an in-depth analysis of the relationship between OCD symptom severity fluctuation in the luteal and follicular phase to thoroughly assess both components of the menstrual cycle. This study will aim to assess this relationship by conducting a non-experimental online self-reported survey. Participants will voluntarily complete a survey containing psychological assessments to analyze symptomology on the first and third Monday of one month. The survey will also assess menstrual cycle phase. Data from both trials will analyze the relationship between menstrual phase and participants psychological symptom severity. The hypothesis is that there will be an increase OCD symptom severity during the luteal phase. The expected results are that participants will experience the

most severe OCD and Stress Disorder symptoms during the luteal phase. Assessing both the luteal and follicular phase and its mediating effects on psychological disorder symptoms will allow for further knowledge on the mechanisms of the relationship between the brain and the body.

Prostitution in Ancient Athens: Using Archaeology to Understand the Practice and Social Complexities of Sex Work in Antiquity

Angelina Knott, Anthropology
Faculty mentor: Professor Lisa Marie Anselmi, Anthropology

This paper examines prostitution in ancient Athens through compiling archaeological research as well as literary evidence. The goal of this paper is to understand the social complexities of prostitution, identify brothel sites using archaeology, and pin-point bias in research that has previously been done. Prostitution is often declared as being "the oldest profession in the world" yet little has been done to fully understand the complexities of such a position in ancient Athens. Due to Athens having been continuously built upon and altered, I look to Rome to help fill in gaps in research and use sites such as the Roman "Lupinar" as a basis for comparison to similar sites in Athens.

The Impacts of Malnutrition on the Juvenile Skeleton

Victoria Kohler, Anthropology; History
Faculty mentor: Professor Julie Wieczkowski, Anthropology

Stunted stature and low body mass are indicators of malnutrition in childhood. Ruff, in his 2007 article “Body size prediction from juvenile skeletal remains”, generated new methods of determining body mass and stature in sub-adults. These methods can be used to assess the skeleton for indicators of malnutrition. Two sub-adult skeletons will be analyzed for deficiencies indicating malnutrition. I will estimate age of both individuals using dental development and eruption, and skull and vertebral fusion points. I will measure diaphyseal lengths of the femur, humerus, tibia and radius for stature. Body mass will be determined by measuring femoral head breadth and mediolateral breadth of the distal metaphyseal surface of the femoral diaphysis. All measurements will be taken to the nearest 0.1mm using digital sliding calipers. Using age-appropriate prediction equations (Ruff, 2007), stature and body mass of these two individuals will be estimated from the above measurements. I will compare the estimates to the WHO Child Growth Standards Chart to determine if these children display markers of malnutrition.

A Machine Design for Tape Application

Joshua Less, Mechanical Engineering Technology
Co-author: Jake Hellert, Wyatt Belanger, Benjamin Ehrenberg
Faculty mentor: Professor Jikai Du, Engineering Technology

Integer holdings LLC is known internationally as one of the largest and most innovative developers and manufacturers of biomedical devices. The company is currently engaging in the production of cathode sheets used in stack cell batteries and recently became responsible for mass producing these sheets. A process within the cathode sheet fabrication is the application of tape strips. The purpose of the tape strips is to separate the cathode and anode layering, preventing them from shorting out and possibly malfunctioning the stack cell battery. This taping process is currently being performed by hand. With an increase in production of the cathode sheets there is a demand for a more efficient method of taping. The average time it takes to complete the taping process on just one sheet is around 60 seconds. However, this is not a suitable amount of time for the cathode sheet production to meet developmental needs, this is where our mission and project objective is given. Integer has requested that our team design a device which can accurately and efficiently apply these tape strips. After brainstorming and collaborating within our team, along with the partnership and ideas of our sponsor, we finalized our design the Die-Punch Tape Applicator.

Breaking Barriers: Advocacy and Support for Survivors of Domestic Violence and Sexual Assault

Madison Lorenzo, Social Work
Faculty mentor: Professor Amy Manning, Social Work

During my internship at the YWCA as a Domestic Violence and Rape Crisis Advocate, I have worked directly with survivors, providing emotional support, safety planning, and resource referrals. I have also assisted clients in navigating the legal system by accompanying them to court proceedings and advocating for their rights. Additionally, I have conducted educational presentations on domestic violence and sexual assault awareness, helping to inform the community about available services and preventative measures. Throughout my internship, I have developed competencies in several key areas. First, I have strengthened my ability to engage with individuals, demonstrating empathy and cultural competence in crisis situations. Second, I have applied critical thinking skills to assess client needs and determine appropriate interventions. Third, I have engaged in advocacy work, ensuring survivors have access to legal, housing, and counseling services. Lastly, I have honed my ability to work within an interdisciplinary team, collaborating with law enforcement, legal professionals, and social service providers to support survivors effectively. For the Student Research and Creativity Conference (SRCC), my poster will showcase my internship experiences, highlight the impact of advocacy work, and present data on the prevalence of domestic violence and sexual assault in our community. Additionally, I will include insights into systemic barriers survivors face

and propose strategies to improve service delivery. This experience has reinforced my passion for social work and strengthened my commitment to advocating for survivors of domestic violence and sexual assault.

Mississippi Food Scarcity During The Civil Rights Era, 1960s: A Struggle For Survival and Equality

Inahra Mack, Social Studies Education
Faculty mentor: Professor Bridget Chesterton, History and Social Studies Education

For my research, I'm focusing on food scarcity in Mississippi during the Civil Rights Movement and how it shaped the fight for equality and survival for African Americans. I plan to explore how the lack of access to food and basic resources impacted Black communities, highlighting the struggle for not only civil rights but also the right to survive and thrive. This project will show how local movements in Mississippi - such as like the organizing of food banks and cooperative efforts - ensured people's survival and played a key role in the broader Civil Rights Movement. These grassroots efforts, often overlooked, reveal the connection between economic justice and the fight for equality. My presentation will showcase how the fight for food and survival intertwined with the larger push for civil rights, emphasizing the resilience of communities and their ability to mobilize for change in a time of severe injustice.

Urban, Suburban, Rural: A Look At What Counts as "Nature" to You

Adella Malbrough, Psychology
Co-author: Trinity Gesamondo, A'men Beecham
Faculty mentor: Professor Stephanie Foraker, Psychology

Previous research indicates that there are mental and physical health benefits to interacting with nature (Keniger et. al, 2013). However, there is limited investigation of the geographical differences that may interact with these findings, such as urban, suburban, and rural environments. Therefore, the aim of this study is to assess whether people growing up in different environments affects what is considered nature to them. Do those who grew up in dense metropolitan areas have a different definition than those who grew up in rural countrysides? Would the former say a small park is nature where the latter would say it starts when you can see clear stars in the sky, deep in the woods? We also assessed amount of exposure to nature, types of experiences, and nature-related activities and hobbies growing up. The authors conducted this research using a Qualtrics survey to measure type of environment, what counts as nature, and nature experiences growing up. Results of a pilot study from Fall 2024 and follow-up experiment now in progress will be presented at the conference. We will also discuss possible applications, such as tailoring a nature-focused mindfulness intervention to one's geographical background.

Making Connections with Poverty And Transportation

Treanah Miles, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social work

What does poverty and transportation look like in Buffalo? In 2022, about six percent of United States adults lacked reliable transportation for daily living. Sixteen percent of adults earning less than the federal poverty level lacked reliable transportation in the past twelve months compared to just 2.9 percent of adults who earned at least four hundred percent of the federal poverty level. What I plan to do is investigate the pricing, the availability, and the access to public transportation in Buffalo. I plan to contact people who go through this struggle to see what changes they believe need to be made. What I think I will discover is that the availability of transportation such as the buses in Buffalo only go on in specific areas more than others. I plan to discover that the access of bus stops is not in the standard that they should be. Transportation connects to poverty because many people struggle to get to essential places such as their jobs and in return, they cannot make it to work to make money. I am hoping that this will open the eyes of people who have the power to make changes so that public transportation Is more accessible and affordable. Come to my poster and learn the terrible impact that transportation has on poverty.

Fresh Perspectives: The Art of Mario Moncalian

Mario Moncalian, Art and Design: Graphic Design
Faculty mentor: Professor Shasti O'Leary-Soudant, Art & Design

Guided by a keen observation of the world around me and a desire to push creative boundaries, my process spans digital and traditional techniques, blending materials and ideas in unexpected ways. Each piece is an invitation to enjoy the creative process and find delight in art. Rooted in resourcefulness, humor, and a passion for discovery, I weave seemingly unrelated materials and techniques to create something fresh and unexpected. Over my four years at Buffalo State University, curiosity and wonder have fueled my drive to leave a lasting impression of fun, surprise, and endless possibility. By refusing to stay in one lane, I hope to spark curiosity in viewers and show that the most unconventional ideas can transform into works that surprise, engage, and inspire.

Background Noise and Speech in Parkinson's Disease: Evaluating the Magnitude Production Task

Lorelai Mucciolo, Speech-Language Pathology
Faculty mentor: Professor Anita Senthinathan, Speech-Language Pathology

Communication difficulties are common amongst individuals with Parkinson's disease (PD). Symptoms often include reduced quality of voice, poor articulation, and decreased vocal volume. Decreased speech loudness is a common symptom of PD, however, speech intensity in the context of background noise has not yet been thoroughly investigated, both for individuals with PD and for neurologically healthy individuals. The magnitude production task is a task relating to speech intensity in which a speaker is asked to say a sentence at normal loudness, then at various loudness levels. It requires the speaker to perceive their own loudness and adjust their volume when requested. This study uses the magnitude production task to investigate how background noise affects speech intensity regulation in individuals with and without PD. This is done by giving participants a simple sentence to replicate at differing volumes (for example, 2 times quieter, 2 times louder, 4 times louder), all while background noise is played through field speakers at randomized volumes between 40 and 90db (within safe hearing limits). Participants are then given an accuracy rating scale to complete in order to better understand how they perceived their own volume and success in regulating speech loudness. The ensuing data collected from the group with PD and the control group will be compared to determine pathological deficits relating to PD. Preliminary data will be presented.

Impulse Control and Defense Mechanisms

Abigail Murphy, Psychology
Faculty mentor: Professor Michael MacLean, Psychology

A key aspect of self-regulation is controlling impulses inconsistent with values, sense of self, or long-term goals. Ways impulse control can go wrong include impulsivity, misjudgment, and undercontrol, where one thinks about the negative consequences of acting on their impulse but decides to act on it regardless. Cognitive defenses may hinder our ability to judge situations against our long-term values, leading to one or more forms of Impulse Control Failure (ICF). Defense mechanisms are underlying cognitive responses when a person is provoked with anxiety or external stressors. The current study aims to see if there is a relationship between using cognitive defenses, specifically rationalization, repression, and denial, and how that predicts undercontrol, impulsivity, or misjudgment. This study theorizes that participants can remember their previous moments of Impulse Control Failure including their thoughts and behaviors, which can reflect certain defense mechanisms. Participants will complete a self-report questionnaire reflecting on their previous impulsive moments. The hypothesis is that the defense mechanisms of rationalization, denial, and repression will correspond with one or more forms of Impulse Control Failure, predicting impulsivity, undercontrol, or misjudgment. Because many measures of defense mechanisms have questionable validity or are couched in a psychodynamic framework rather than a self-regulation framework, new items were generated for this study. The questionnaire was administered to young adult Buffalo State University students and adults through CloudResearch with Connect Services. The survey's

results will be analyzed to determine the relationship between defense mechanisms and Impulse Control Failure type, with further implications discussed

Alarm Ready: Igniting a Smarter Fire System for Engine 19, Buffalo FD

Joseph O'Connell, Electrical Engineering Technology
Co-author: Daniel Asboth, Jacob Neufeld, George Danquah, Alex Olyench
Faculty mentor: Professor Ilya Grinberg, Engineering Technology

Our research project aims to enhance the alarm system and response time of the Engine 19 firehouse in Buffalo. Currently, their system relies on a printer that receives emergency signals from dispatch and prints out critical details. A motion sensor detects the paper once fully printed and then triggers an alert using a speaker and flashing red LED light. However, this system has several flaws—dust and lighting conditions can interfere with the sensor, causing malfunctions. Additionally, if a firefighter is asleep or outside the bay, the built-in speaker may not be loud enough to effectively alert them. Our improved system utilizes a Raspberry Pi as the central processing unit, allowing for a more immediate and reliable alarm. The Raspberry Pi will receive emergency signals directly from the server box at headquarters and will be securely housed in a metal enclosure. Key components include optocouplers, which regulate voltage and ensure compatibility between the Raspberry Pi and the alarm system, and a relay, which functions as a timer to control the duration of the alarm. This upgraded system will trigger the alarm simultaneously with the printing process, eliminating delays caused by the motion sensor. The siren and strobe lights will be installed strategically throughout the firehouse to maximize visibility and audibility. By ensuring that alerts are immediate and reliable, our design will improve response times, allowing firefighters to act more quickly and efficiently in emergencies.

Compeer of Greater Buffalo, Building a Positive Mindset

Rafaella Palmeri, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

This poster presentation will focus on presenting information regarding my field placement at Compeer of Greater Buffalo. Compeer of Greater Buffalo is an award-winning program that connects clients with mental health issues to mentors to reduce social isolation and build positive and healthy friendships. At Compeer of Greater Buffalo, I have been placed with Middle Schoolers at Maryvale Middle School offering support, education, and helping my students navigate through challenges living with a mental health issue. I will explain my internship role and why it's important in obtaining my Bachelor of Social Work degree. The poster will present data and information regarding Compeers mission, the population served, and its sole purpose to promote good mental health through meaningful relationships. Four Competencies

will be presented regarding demonstrating ethical and professional behavior, engaging in diversity and difference in practice, engaging in policy practice, and advancing human rights and social, economic, and environmental justice at Compeer. The concept of social Justice will be explained in service delivery at Compeer. A reflection will be given at the end to explain the pivotal moments at Compeer that were essential in entering the field of Social Work. The presentation is for those who would like to further their knowledge about how my experience in the Social Work field helped me build positive mindsets with clients.

A Historical Examination of Poverty in Buffalo

Arianna Parker, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

Buffalo's poverty history is shaped by rapid industrialization, the migration of laborers to the area, and fluctuating economic conditions. As Buffalo became a significant industrial hub in the late 1800s, the working class grew, but the city's economic downturns exposed the vulnerability of its poorest residents. Early responses to poverty included institutions like almshouses, charitable organizations, and municipal assistance programs. Understanding these early responses can help highlight how these systems continue to impact contemporary poverty alleviation efforts. Charity Organization Society Records (Late 1800s-1930s): The Charity Organization Society (COS) was one of Buffalo's earliest attempts at providing structured aid. Examining these records will reveal the organization's philosophy on poverty and its methods for supporting those in need. City and County Legislation Reports (Early to Mid-1900s): Government documents from city and county meetings will highlight the policies enacted to address poverty, such as public housing initiatives, public assistance, and local labor programs. Buffalo's historical approach to poverty was based on containment rather than eradication, a trend that persists today in some areas of the city's social welfare policies. While modern approaches have moved toward more inclusive welfare programs, there are still elements of historical stigma toward poverty and an overemphasis on individual responsibility, rather than systemic change. Attendees will learn about the historical evolution of poverty in Buffalo, from institutionalized care to the rise of structured charitable responses, and how these policies have shaped modern-day approaches to poverty in the area.

Firearms and Ordnance Used in the War of 1812: Early Manufacturing and Logistic Considerations

Doug Ridolfi, undeclared
Faculty mentor: Professor Andrew Nicholls, History and Social Studies Education

The War of 1812 saw a major demand for domestic arm and ammunition manufacture in the United States. Republicans and Federalist parties were divided

over acquiring guns and supplies from private and foreign manufactures vs. support of government run armories. The United States enlisted troops to supply both federal military forces and local volunteer militia and the nation was divided on the need for a standing federal military force and how to outfit it and supply it. This poster will explore some of the firearms and ordnance selected for the army and naval forces in the United States and Britain and how availability, politics, resources, transport and supply, and familiarity with European firearms may have influenced the selection, modification and optimum use of firearms and ordnance in the War of 1812.

Grid Real Time Automation: Power is Nothing WIthout Control

Asraf Sawon, Electrical Engineering Technology
Co-author: Alexander Ghosen, Mustapha Kamara, Zayron Miles, Sami Mohammed
Faculty mentors: Professor Ilya Grinberg, Engineering Technology; Paul Perry, Engineering Technology

The goal of using Real-Time Automation Controller (RTAC) is to provide real-time control and monitoring of both the Utility System and the Microgrids. RTAC integrates with the system's key components, including protection relays, Supervisory Control and Data Acquisition (SCADA) system, meters, and circuit breakers using industry-based communication protocols.This project involves application of the state-of the art protection and communication equipment and software and their integration with Smart Grid Lab at Buffalo State University. Dashboard developed during this project allows users to operate equipment in the lab exactly as it is used in industry.

When the Scales Tip: Inequality's Role in Democracy

Nicholas Smith, Political Science
Faculty mentor: Professor Patrick McGovern, Government, Planning and Philosophy

The purpose of this research project is to help test the robustness of Charles Tilly's "democratization" theory that highlights the interaction of trust networks, social/economic equality, and the limitation on non-state actors on state-capacity building and democratization. The first part of the research will review the theory itself against other theories of democracy and then test these three major independent variables on state building and democratization across countries selected from all major political regions in the world. As democratic backsliding has grown more prevalent, it's important to find out where nation-states are failing and where they can make improvements to get back on the democratic "track."

United for ALICE (Asset Limited, Income Constrained, Employed)

Anna Sonker, Criminal Justice
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

United for ALICE (Asset Limited, Income Constrained, Employed) is a grassroots movement that unites the United Way, corporations, nonprofits, and foundations to address financial hardship and promote financial stability while being a driver of innovation, research, and action to improve life across the country for ALICE households. In 2022, 29% of US households were ALICE and earned just above the Federal Poverty Level (FPL), while 13% were below the FPL. In total, 42% of American households were struggling to make ends meet. My methodology consists of analysis of local economic data from United Way's ALICE reports, census information, and community mapping to identify geographic concentrations of financial vulnerability throughout the county. In 2022, approximately 26% of Erie County households fell into the ALICE category, significantly impacting Buffalo's urban core and surrounding communities. Preliminary findings reveal that ALICE households in Erie County face major challenges in housing affordability. My goal is for community members to understand the challenges ALICE households face and what they can do to help.

How to be Human: An Illustrative Book on Growing Up Queer

Shelby Stisser, Art and Design: Graphic Design
Faculty mentor: Professor Shasti O'Leary-Soudant, Art & Design

How To Be Human is a book I wrote and illustrated diving into my personal journey through the ups and down of what it means to finally begin to understand yourself after feeling isolated and "different" growing up. Through my illustrations and use of self portrait photography, I want to extend a warm and comforting invitation into fraught subject matter, from a human who is actively still making mistakes in navigating their head and their queerness. My research consisted of digging deep and writing about the topics that are intimidating and uncomfortable to talk about, in order to begin a conversation. One of the goals was to create a connection with each individual reader so they can begin to understand the intricate struggles of mental health in relation to societal expectations from what has been deemed the "norms" and how that pressure can manifest itself within people. This book captures this inner turmoil I've been dealing with for years and how through art and photography I am finally able to begin to understand my true authentic self.

Senior Year Internship: Gateway Longview Foster Care

Ruthie Swann, Social Work
Faculty mentor: Professor Amy Manning, Social Work

The social work internship that I had this year was a foster care placement. The overall goal of the placement was to focus on providing support to children and families who are involved in the system. The experience that I had has provided an in-depth understanding of the challenges and guidelines and procedures of the foster

care system. Through this placement I was able to see first hand how the actions that are taken by the foster care caseworkers are with the intention of having a safe reunification between the parents or guardians and the children involved. As an intern I have been able to shadow the caseworkers as they went on home visits, participated in the supervised visits and sat in on court appearances. This presentation will discuss the importance of management skills, clear communication, organizational skills as well as how to maintain a healthy professional environment not only with the interactions with the families and foster parents, but with coworkers as well.

COSMOS-V (Computer On-board Scientific Mobile Observatory System)

Leanna Tse, Electrical Engineering Technology
Co-author: Patrick Freeman, Kaleb Calkins, Christopher Lyn
Faculty mentor: Professor Ilya Grinberg, Engineering Technology; Jonathan Rosten, Engineering Technology

The project is further development of the COSMOS Rover during the 2024–2025 academic year. The goals are driven by the University Rover Challenge, with the ultimate aim of entering the competition with all required capabilities. This year's progress includes a variable-speed, closed-loop controlled, 360° navigation system, high-current conductors for enhanced motor performance, a robust wiring scheme with clear wire labeling, wireless navigation control, and real-time current and voltage feedback. The motor control and drive system are complete, allowing us to begin meeting the University Rover Challenge's minimum design requirements. These include traversing rough and sandy terrain, incorporating a robotic system to lift 50 kg, demonstrating fine control, navigating via GNSS satellites, and performing tasks like taking and analyzing soil samples. Achieving these goals requires a reliable mobile platform to transport the equipment, and developing this platform is the focus for this academic year.

Navigating Health Home Care: My Journey as an Intern in Care Coordination and Outreach

Gabrielle Wagner, Social Work
Faculty mentor: Professor Amy Manning, Social Work

This poster highlights my experiences as an intern in care coordination and outreach, providing insights into the intersection of healthcare and social work. Throughout my internship, I worked directly with underserved communities to bridge the gap between individuals and essential health services. My responsibilities included assisting with patient outreach, coordinating care plans, and connecting clients to vital resources, while also learning about the complexities of healthcare systems and the importance of social work in improving patient outcomes. In addition to my work in care

coordination, I will discuss my broader journey in social work. This includes the theoretical foundations, ethical considerations, and the invaluable skills I developed in client advocacy, crisis intervention, and cultural competency. My internship solidified my passion for helping individuals navigate systemic barriers and provided me with firsthand experience in advocating for vulnerable populations. This poster aims to illustrate the transformative impact of social work, not only in direct service provision but also in fostering systemic change. By sharing my experiences, I hope to inspire others in the field and emphasize the importance of interdisciplinary collaboration in addressing the multifaceted needs of individuals and communities.

We Do Recover

Caitlynn Weichert-Winkfield, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

The facility where this internship is taking place is under the scope of Cazenovia Recovery, is called Turning Point House. This specific 90-day facility caters to men who have been diagnosed with a substance use disorder. Even though all of the residents possess a behavioral diagnosis, it is common for staff members to identify other issues. The facility has observed residents with learning disabilities, mental health issues, and personality disorders. Turning Point House fosters the idea of recovery not being a cookie cutter subject and understanding that each resident is on their own journey in their recovery. Turning Point House offers onsite medical staff (nurses, psychiatrist and prescribers) who can assisted with daily MATs, outside group facilitators, various onsite groups that are facilitated by staff, 3 meals a day made by either staff or residents, and other activities that support wellness and appropriate self-care practices. As a current intern at this facility, it is my role to shadow different counselors during a number of different tasks (discharges, treatment plans, comprehensive evaluations, etc.) Interns are also allowed to participate in potentially dangerous experiences as well, such as room searches, de-escalations, reactions to medication and more. This agency is proficient at upholding CSWE competencies by having consistent opportunities for growth and learning, keeping the resident's best interest as a priority, and advocating for the past and current residents of Cazenovia Recovery. My experience at Turning Point House thus far, has made me aware of the realities of addiction from a different perspective. It has brought situations such as housing and food insecurities, being underserved and underemployed, and the effects of stigma to light. Ultimately, it has prepared me for a lifetime of advocation for those who have lost everything and believe that their voice is vivacious.

Los Señores del Poder: The Tracks to Revolution

Desiree Young, History
Faculty mentor: Professor Bridget Chesterton, History and Social Studies Education

Los Señores del Poder: The Tracks to Revolution is a board game inspired by Monopoly. It is designed to provide an alternative way of exploring and learning about the Porfiriato era in Mexico (1876–1910) and the factors that led to the Mexican Revolution. Players play as wealthy elites and foreign investors and must navigate a system built on the exploitation of the poor, indigenous, and working class. Players engage in key historical dynamics throughout the game such as debt trapping, infrastructure development, and political exile. Every decision reflects the realities of Porfirio Díaz's regime, where economic policies and foreign investment in Mexican infrastructure deepened inequality until revolution became inevitable. By using an immersive alternative approach to learning, Los Señores del Poder allows players to experience the structural injustices that fueled the revolution in a digestible way.

Poster Session II
3:00-3:55, SAMC atrium

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Evolution of Cakes: Royal Victorian Britain to Depression America

Elizabeth Albright, History
Faculty mentor: Professor Bridget Chesterton, History and Social Studies Education

Encountering a 1980 rerelease of Joseph A. Lambeth's 1934 book Lambeth Method of Cake Decoration and Practical Pastries introduced a new perspective on the influences of British Victorian Era cakes on cakes in Depression Era America. The Lambeth cake method outlined in the book, introduced a new kind of British Victorian influence 29 years after the era concluded with the death of Queen Victoria. Lambeth, an experienced confectioner, had created a cake decoration method, the Lambeth method, known for its piping layering influenced by the piping done by Europeans during the Victorian Era. Influences of his Lambeth cake method seen still today in a widely popular vintage piping techniques even in 2011 with the British royal wedding cake for Catherine Elizabeth Middleton and William, Prince of Whales an achievement shared with the precious Victorian piping methods.

Plumage Dimorphism and Size Dimorphism are Unlinked and Driven by Disparate Factors Across Birds

Catherine Alverson, Biology
Faculty mentor: Professor Gavin Leighton, Biology

Sexual selection is a mechanism in which individuals perform behaviors to attract mates. Specifically in birds, sexual selection may drive larger body size or more ornamental plumage. However, do these changes happen concomitantly or independently? There are differing theories on the evolution of dimorphism and how it is expressed in polygamous and monogamous species. Social mating systems may play into dimorphism, but there may be more variables than mating systems that affect the evolution of plumage and size dimorphism. To better understand these relationships, I built a trait database across several groups of birds, encompassing 504. I analyzed these species for plumage and size dimorphism; additionally, I scored species traits including the mating system, territory signaling, communal signaling, and diet for each species. Contemporary comparative analyses shows that plumage and size dimorphism are unlinked, and that these traits act independently from one another over evolutionary time. However, a discrete trait analysis shows that species with minimal social bonds are more likely to develop plumage dimorphism over evolutionary time. Surprisingly, results from comparative regression model indicates that an invertebrate diet is associated with reduced sexual size dimorphism. These

results provide increased understanding of the interplay between species traits and the evolution of diverse phenotypes.

Temperature Data Comparison–Urban Buffalo Region vs. Rural Wyoming County Region

Jessica Auge, Computer Information Systems; Environmental Geography
Co-author: Anthony Puleo, Jay Meidel
Faculty mentor: Professor Elisa Bergslien, Geosciences

Global temperature is increasing, and urbanization can worsen heat extremes. Determining the difference in temperatures in urban Buffalo compared to rural Wyoming county is important for understanding how these differences can affect these areas. Urban areas tend to have a higher temperature due to the cement and buildings absorbing and retaining more heat from the sun compared to areas with high levels of vegetation, known as the urban heat island effect. Effects of higher temperature areas include higher energy consumption, potential infrastructure damage, and increased incidence of heat stress and heat stroke. Looking at the number of trees in these areas will help explain why certain areas are warmer than others. It is expected that the Buffalo area will be warmer than the Wyoming county area. Since many neighborhoods in Buffalo have few trees and mature trees are expected to be less abundant in urban areas, higher temperatures are expected in Buffalo. In order to test this hypothesis, data will be collected simultaneously in both a low tree lined neighborhood in Buffalo, and a maple tree forest in Wyoming county across an area of about 500,000 square feet. Temperatures will be determined using an infrared camera as well as a thermometer. The tree density will also be estimated using the Tree Census data and confirmed by taking a tally of the number of trees in the areas. This information will show how the density of trees in certain areas, rural vs urban areas, affects the temperature.

Stomatal Variability in Domesticated and Wild Agave

Brigid Benson, Biology
Faculty mentor: Professor Daniel Potts, Biology

Some species of Agave, a genus of ecologically, economically, and ethnobotanically significant cactus-like plants native to North America, have been cultivated by the indigenous people of Arizona and northern Mexico for thousands of years. Our objective was to compare the functional traits of stomata, tiny leaf pores that facilitate CO2 uptake for photosynthesis while controlling water loss, among closely related species of domesticated and wild Agave. We predicted that Agave domestication selected for larger and denser stomata, traits favoring rapid growth at the expense of enhanced water use. In contrast, we predicted that wild Agave retain a more conservative strategy of slow growth and water conservation favoring smaller, less

dense stomata. Additionally, we predicted that pre-Columbian domesticates retain their domesticated traits to the present day. To address our predictions, we compared stomatal traits of A. murpheyi (pre-Columbian domesticate), A. americana (modern domesticate), and A. chrysantha (wild) using acetate peels sampled from leaves of plants growing in the living collection of the Desert Botanical Garden in Phoenix, Arizona. Using peels collected from both adaxial and abaxial leaf surfaces, we measured stomatal size and density of several individuals of each species. Consistent with our predictions, preliminary results indicate that domesticated species, A. murpheyii and A. americana, have larger stomata and greater stomatal density than A. chrysantha, a wild species. These results provide novel insight into shifts in functional morphology associated with Agave domestication by indigenous people and may cast new light on the potential for sustainable Agave cultivation in warming and drying arid regions worldwide.

How D.E.I Protections Rolling Back Impact Communities in Buffalo

Hannah Boltz, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

How will Diversity, Equity, and Inclusion (DEI) protections being rolled back at the federal level impact social stratification here in Buffalo? With D.E.I being pulled back it limits access to employment, creates racial gaps within workplaces, social stratification increases and ultimately gives the upper hand to the rich. D.E.I, Diversity, Equity and Inclusion signed by Barack Obama in 2011 aimed at promoting equal opportunity within the federal workforce has since been rolled back by president elect Donald Trump and this has devastating effects on the disadvantaged communities nationwide. Trump's billionaire advisor Elon Musk has described D.E.I initiates as “racism” and opponents say they take opportunities away from white Americans. I will be using news stories, first hand accounts, data and statistics to gather my research on this topic. I expect to find many low income and systematically marginalized individuals losing employment over this matter. This is going to have devastating effects on many. Historically D.E.I has most benefited white women. It may not affect you personally, but it will affect your community. People out there will struggle. With the removal of D.E.I this invites racism and prejudice into workplaces and schools. My intention of this poster is to show the harmful reality of not having a world of diversity and inclusion. You can support those who are affected by this by not supporting companies who rolled back on D.E.I like Target, Disney, Amazon and many more!

The Effect of Food Insecurity on Substance Use and Impulsivity

Madelyn Braun, Psychology
Juliette Falzone
Faculty mentor: Professor Naomi McKay, Psychology

Food insecurity has become a prevalent issue throughout many age groups in the United States. Food insecurity is defined as inadequate access to food on a regular basis. When looking at the correlates of food insecurity in young adults and college students, substance use supports an opportunity for further research. Another important factor to study regarding food insecurity is impulsivity. This current study hypothesizes that the presence of food insecurity will increase the likelihood of substance use and that college students who report being food insecure will have higher rates of impulsivity. Participants will be selected from the Buffalo State University student population. An online survey will be sent out to all students that will take 15 minutes to complete. Department extra credit will serve as the incentive for those who complete the survey. Results of this study are expected to show that college students who report being food insecure will also report higher rates of impulsivity and substance use. Overall, this study seeks to explore the relationship between food insecurity and rates of impulsivity and substance use.

Looking at Vintage Sleepwear from a Modern Lens

Catherine Campbell, Fashion & Textile Technology
Co-author: Thomaciea Brown, Jeremiah Cranston, Annabel Anthony
Faculty mentor: Professor Arlesa Shephard, Fashion & Textile Technology

Our research focuses on the modernization of 1950s and 60s sleepwear and how these decades have inspired contemporary fashion influencers. The example we have chosen is Sabrina Carpenter. She takes vintage sleepwear and puts her own modern spin on it. Women's sleepwear has changed over time. We are looking at things like the nightdresses and babydoll dresses of the 1940s, lingerie and matching underwear of the 60s, and the now casual, laidback sleepwear of today. Things like nightgowns reflected societal norms of modesty and femininity, emphasizing coverage and decorum even in sleepwear. Over time, societal attitudes towards women's clothing became more relaxed. Nightgowns evolved to include lighter fabrics, shorter lengths, and more comfortable designs, prioritizing ease of movement and personal comfort. We are highlighting Sabria Carpenter's tour outfits and how she pulls directly from this historical period. We look at what her sleepwear means in the modern-day lens and compare it to what 50s and 60s sleepwear meant for that time. Our findings help show that fashion in all aspects has changed and the past still influences the present. In today's world, people are taking vintage sleepwear and making it theirs. People are reworking it in a way that's empowering to them. Women were not often respected in the 1950s and 60s. Learning about the history of vintage sleepwear means acknowledging the past but also acknowledging the present.

Supporting Growth: Creating Positive Change as a Behavior Technician Intern

Samantha Carlson, Social Work

Faculty mentor: Professor Catherine Mazzotta, Social Work

The Summit Center is a school that helps support children with autism and other developmental disabilities with classrooms that are self-contained rooms and integrated classrooms. The main value Summit has is for their students is to gain as much independence as possible. The students we serve at Summit get one on one attention and advocacy for each of their needs. At Summit they believe in evidence-based research and working with a behavior consultant they base the needs of our students on Applied Behavior Analysis (ABA). Another curriculum that Summit has created is Social Skills, this curriculum helps our students understand their social emotional needs and how to communicate them to their peers and adults. In my internship role as a Behavior Technician, I help support the classroom with students who have challenging behaviors and help teach the students better ways to manage their emotions. With supervision of the behavior consultant, I track Antecedent-Behaior-Consequence data (ABC) and this helps with understanding the student's behaviors. Each week at my internship I am helping provide Social Skills in the integrated pre-school classrooms. Looking back into my internship I continue to implement social work values such as empathy, respect for each client, and advocating for my clients. Learning about the Social Work Competencies has helped me with my internship and how to best support the students that I serve in my internship. This experience has increased my skills and knowledge of promoting social justice, advocacy and positive changes within the classroom setting.

Recalling a Positive Nature Experience Reduces Anxiety

Keira Carrigan, Applied Psychology
Faculty mentor: Professor Stephanie Foraker, Psychology

There is evidence that spending time in nature can improve our mental well being (Bratman et al., 2012), including reducing anxiety (Kotera et al., 2021). This study questioned if simply recalling a positive nature experience from memory can also reduce anxiety. We hypothesized that anxiety levels should decrease following a positive nature memory. We also predicted that the decreased anxiety should be greater for an enhanced recall group that provided more sensory detail and a sense of “reliving” the memory. We used a Qualtrics survey with two groups of participants, randomly assigned to either an enhanced recall condition (n = 84) or a basic recall condition (n = 81). For both groups we asked them to “Please recall a memory of a positive experience that you have had in nature. Describe this experience in enough detail that it feels like you're reliving it, such as where, when, who, what activities occurred”. The basic condition was then asked a series of trivia questions as a control, while the enhanced group was asked to further recall their positive emotions and sensory stimulations regarding the nature experience they wrote about. Participants completed the Profile of Mood State-Anxiety (POMS) test before and after recalling their memory. Our preliminary results show support for our first hypothesis, both the basic and enhanced group rated their anxiety as lower after the

nature memory. For our second hypothesis, we found that anxiety decreased by 3.67 points for the enhanced group while anxiety decreased 2.75 points for the basic group. This is consistent with our second hypothesis. In sum, recalling a positive nature experience from memory does reduce anxiety. Thus, it may be an effective therapeutic approach in the future.

A Christmas Carol: Illustrated Redux

Christian Chambers, Art and Design: Graphic Design
Faculty mentor: Professor Shasti O'Leary-Soudant, Art & Design

This interpretation of Charles Dickens' classic preserves the original text while reimagining the illustrations, paying homage to Ronald Searle's ink work. The novel's message is more relevant than ever as we face rising authoritarianism, kleptocracy, and oligarchy on a global scale. Greed festers, corrupting both the well-intentioned and the ruthless, stripping away autonomy and dragging us toward a modern feudalism. Yet, I persist—and urge others to do the same. A Christmas Carol is a redemption story, an anti-capitalist fable that our most gluttonous leaders would do well to heed—though I doubt it has ever been popular among those I hold in contempt. My hope is that even the supporters of greed read this book and recognize that our demands must go beyond slightly cheaper egg prices. We must act before it's too late, before fear of our own mortality is the only thing that wakes us up. Compassion and grace must prevail—never tolerating intolerance.

What Does Poverty Look Like to You?

Ashley Childs, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What does poverty look like to you? In this research poster, I explore what poverty looked like in Buffalo, NY over the past 20 years and what it looks like presently. When Buffalo's former Mayor, Bryon Brown, took office in 2006, Buffalo was ranked the second poorest city in the nation. Byron Brown was the City's Mayor until October 2024. Buffalo became the third poorest city during his tenure. Buffalo's poverty rate in 2006 was 29.9 percent. In 2019, the last year for which figures are available, it stood at 28.8 percent. I examined City of Buffalo policies and also looked at the way the City government has allocated funds to address poverty in our community during this time. Specifically, I analyzed 3 policies implemented by Mayor Brown to help gain an understanding as to why poverty in the City of Buffalo did not improve during his tenure. I also explore which demographics are the most affected by these policies to better understand who is living in poverty in the City of Buffalo today. This poster will bring attention to the historical issues and the policy decisions that led to the continuation of poverty experienced by the residents in the City of Buffalo today.

The Importance of Inclusive Playgrounds at Schools and in the Community

Hailee Cipollina, Special Education Early Childhood, MSED
Faculty mentor: Professor Pixita del Prado Hill, EELEL

Inclusive playgrounds are popping up more and more and are giving children with disabilities an opportunity to play in a way they never have before, so why doesn't every school have them? This research will look into the important benefits that inclusive playgrounds have on children with disabilities, their families, peers and the community in and out of school. I will conduct a literature review that will assess how inclusive playgrounds make a positive impact on everyone around. I chose this project as an exceptional education major to make a difference in the lives of the students I hope to be teaching every day.

Veterans in Poverty and Cost of Living

Joseph Dee, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social work

The problem is the cost of living with military veterans having low disability ratings from the Department of Veterans Affairs. The veteran's ratings go from 10% to 100% on a pay scale ranging from $175.73 to $3,836.16 a month. The problem is that if the veteran doesn't have a 100% disability which is when the veteran has a challenging time supporting themselves. While the federal poverty guidelines state for a monthly income of $2,510 and that is an annual income of $30,120. The problem is that when a military veteran is not at 100% disability rating the individual falls below the poverty line because at a 90% disability rating is $2,300.87 a month. Programs like Housing and Urban Development Veteran Affairs Supportive Housing (HUD-VASH) or government assistance programs can help veterans with rental assistance. The total cost of living in Buffalo is $2,183 for rent, food, and transportation and that is not including clothes or having a cell phone payment. With the cost of living on the rise and the massive shortage of affordable housing in the United States, it would be difficult for military veterans getting their monthly disability checks to support themselves. That is why it is important to raise the monthly payments for military veterans with low disability ratings to be able to get out of poverty. In the state of New York there are 1,098 veteran's facing homelessness. I hope that my poster will raise awareness about the housing crisis that many veterans are facing in our community.

Navigating Child Protection: A Social Work Intern Perspective on CPS

Elizabeth Denis-Torres, Social Work
Faculty mentor: Professor Amy Manning, Social Work

As a social work intern at Child Protective Services (CPS), my experience provides valuable insight into the intersection of theory and practice in child welfare. Throughout my internship, I engaged in research that explored the effectiveness of intervention strategies used to support at-risk children and families. I conducted case studies to analyze the outcomes of CPS's approaches to child safety and family preservation, focusing on key factors such as trauma-informed care, cultural competency, and family engagement. In addition to the research component, I contributed to creative problem-solving initiatives by collaborating with caseworkers to develop intervention plans tailored to the specific needs of children and families. This allowed me to integrate evidence-based practices into real-world situations and gain an understanding of the complexities involved in safeguarding children. My scholarly focus centered on exploring the impact of systemic issues, such as poverty and domestic violence, on the success of CPS interventions. Through this, I aimed to better understand how social work practices can be adapted to address these challenges and promote long-term positive outcomes for children. This internship was a transformative learning experience that deepened my understanding of the role of social work in CPS, highlighting the importance of research-driven practices, ethical decision-making, and the need for holistic support in child welfare. It has provided me with both the academic foundation and practical skills necessary for a future career in child protection and advocacy.

Ederer History 300 Research Project: Misinterpretations of the First Crusade

Connor Doyle, History
Faculty mentor: Professors Martin Ederer, History and Social Studies Education; Bridget Chesterton, History and Social Studies Education

For the History 300 course we researched a historical topic of our choosing. I chose Western Europeans and their misinterpretations of Pope Urban II's call for the First Crusade in 1095. The project required us to research the topic, create a bibliography and write a research paper. My research focused on how Urban II's decree led to misunderstandings of the purpose of the First Crusade and also the crusades that followed. I explored how these misinterpretations have influenced both Western and Muslim narratives that created biases that persist in our own time. This project examined primary accounts of various groups who participated in the crusades. Furthermore, I explored the social, religious, and political factors that drove Urban II's call and shaped responses to it, as well as motives of those who took up the crusade. This project shows the importance of understanding historical contexts that have continued to shape divisions instead of cooperation.

Heavy Metal Content in Soil at Legacy Industrial Sites in Buffalo, NY

Xinozea Ferguson-Giscombe, Africana Studies; Environmental Geography; Arts & Letters
Co-author: Benjamin Axberg, Raven Rybak, Natalie Zuefle

Faculty mentor: Professor Elisa Bergslien, Geosciences

Buffalo's development into a manufacturing hub in the mid-to-late 1800s was built on the industrial centers inside the city. Many sites around Buffalo where these businesses were located have since been redeveloped or are in proximity to an area that's been redeveloped for the modern city. This can take the shape of a neighborhood being built on a former steel mill site or even an old quarry being filled in for a new park. The goal of this project is to see what remnants of industry exist at these sites today.
For this research we will be targeting areas of Buffalo that have historically been centers of industry, such as the First Ward and the East Side and comparing them to areas that have no history of industrial use, such as Delaware Park. We will be looking for a correlation between long-term industrial sites in Buffalo and heavy metals present in the soils of the nearby areas. In these regions we will search for green spaces where we will then take soil samples which will be analyzed for heavy metal concentrations using an X-ray fluorescence (XRF) spectrometer. The results will be compared to the New York State DEC Soil Cleanup Objectives (SCOs) and USGS geochemical background levels. We expect to find higher concentrations of heavy metals in the soil in the industrial sample areas than in the historic parklands.

The Evolution of Women's Fashion in Dress for Success

Michelle Fields, Fashion & Textile Technology
Co-author: Noah De Necochea, Jafracy Rodriguez
Faculty mentor: Professor Arlesa Shephard, Fashion & Textile Technology

Our topic, "Dress for Success," explores the relationship between fashion, gender, and activism, focusing on the evolution of women's professional attire and its role in social and political movements. Women wearing suits, emphasized the importance on how clothing became a tool for political and gender activism, especially during the feminist movements of the 1960s and 70s. Following the publishing of Malloy's New Women's Dress for Success book in 1977, women implemented fashion, like suits, to challenge restrictive gender norms and assert their presence in the work force. This research emphasizes how the changing styles of women's suits reflect broader shifts in femininity, power, and professional identity. In the early 20th century, women's suits were often designed with feminine touches, such as curves and softer lines, to align with traditional notions of femininity and meet the growing demand for professional attire. Retailers continued to intentionally design women's work attire as intensely feminine. Women who dressed feminine were considered controllable. However, by the 1980s, the adoption of the power suit, characterized by sharp lines, structured silhouettes, and broader shoulders, marked a turning point. It symbolized women's desire to align with corporate masculinity and assert their authority. Through time, the evolution of women's suits has mirrored women's changing roles in society, particularly as they fought for equality, representation, and visibility in professional

and political arenas. Overall women's clothing continues to play a significant role expressing individual and collective power, marking ongoing progress.

Layering our Learning: Supplementing Classroom Instruction in Science of Reading with Asynchronous Modules

Alexandra Fish, Childhood Education
Co-author: Jasmine Pena
Faculty mentor: Professors Julie Henry, EELEL; Jennifer Reichenberg, EELEL

Researchers have identified a common challenge among preservice teachers in identifying, segmenting, and blending phonemes in words (Hendry, 2020). This skill is essential for students learning to read in alphabetic languages and illustrates how insufficient teacher knowledge can hinder the implementation of key instructional practices. Additionally, studies suggest that preservice teachers may require further instruction in morphology (Tortelli, Lupo & Wheatley, 2021), which is crucial for word learning, spelling, and vocabulary development beyond early grades. Teacher preparation programs have been urged to address these areas of need. In response, reading researchers have created online modules to address gaps in knowledge. This research project examined ways to implement online modules for elementary education teacher candidates at Buffalo State. Results and implications will be shared.

Unveiling Fungal Microbiota of Seneca-Iroquois Basketry Heritage

Brooke Formaniak, Biology
Co-author: Elena Best
Faculty mentor: Professors Olga Novikova, Biology; Glennis Rayermann, Art Conservation

The Seneca-Iroquois basketry heritage is a centuries-old tradition that embodies the artistic, cultural, and practical significance of basket-making within the Haudenosaunee Confederacy, particularly among the Seneca Nation. Crafted from black ash splints and sweetgrass, these baskets are known for their intricate patterns, exceptional craftsmanship, and symbolic motifs, serving both functional and ceremonial purposes. Passed down through generations, they represent a deep connection to nature, identity, and community resilience. Today, a remarkable collection of these traditional baskets is preserved at the Seneca-Iroquois National Museum (Salamanca, NY), where they serve as vital links to the past and educational resources for future generations. However, these invaluable artifacts face threats from fungal biodeterioration, as fungi thrive in organic materials especially under conditions of fluctuating humidity. Fungal growth can lead to staining, discoloration, structural weakening, and even loss of historical artifacts, posing a significant challenge to their preservation. To address this issue, our research project focuses on sampling and identifying the fungal microbiome associated with these historic

baskets. By employing culture-based techniques, DNA barcoding, and next-generation sequencing, we aim to characterize fungal species present, assess their potential risks, and develop conservation strategies to mitigate biodeterioration. Our study will provide critical data on the types of fungi colonizing the artifacts, helping art conservators implement evidence-based preventive measures. This research not only enhances our understanding of microbial interactions with cultural heritage materials but also ensures the long-term preservation of these irreplaceable artifacts for future generations.

Alphabet Mixtape

Emily Gnirk, Art and Design: Graphic Design
Faculty mentor: Professor Shasti O'Leary-Soudant, Art & Design

I chose to create a book to be enjoyed by adults, but also shared by parents with their children. My overarching subject is music. I went with the theme of a mixtape/playlist and chose different songs on each page to be represented in the illustrations. The songs would be best enjoyed by someone who is a fan of rock and alternative types of music because it best represents the music I listen to. Music is very important to me, I can't get enough of it. I always find a way to incorporate it into my work. It helps motivate and inspire me when creating, so it only made sense to use musical themes. This project was accomplished using the rubber blocks printmaking method. I created the prints and then pieced everything together using digital software. I hope this project brings my audience the same appreciation of music through my illustrations, and possibly help them see it in a different way.

No Kid Left Behind: The Purpose of Restorative Justice in Schools

Willie Griffin, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

I completed my internship at Academy 131, an alternative high school located in Buffalo, New York. This internship was sponsored by the Erie County Restorative Justice Coalition, which aims to promote racial and social justice within schools, workplaces, and various systems. The coalition achieves this by practicing restorative justice, helping to heal the harms caused by conflicts between those affected and the perpetrators. Throughout my time at Academy 131, I had the privilege of facilitating restorative justice circles and working to minimize negative interactions between students and faculty. I conducted one-on-one meetings with students to help them explore their emotions and identify their triggers, allowing them to express themselves in a safe environment. We also organized restorative justice conferences where everyone involved could come together to resolve ongoing issues collaboratively. To nurture a sense of community, we held daily restorative justice circles that allowed for open dialogue and connection.This internship taught me a

great deal about the importance of patience and understanding when working with youth. It was a different environment than I was accustomed to, and there were days when the challenges felt overwhelming. I often found myself supporting not only the students but also the teachers as we navigated our own feelings and stressors together. We engaged in meaningful conversations about self-care, developing plans to support one another and show up as our best selves each day. Ultimately, this allowed us to create a nurturing atmosphere where we could provide the best services for our students.

Supporting and Empowering Refugees in a Resettlement Program: Internship Insights

Ava Grohusko, Social Work
Faculty mentor: Professor Amy Manning, Social Work

During my undergraduate internship at Jewish Family Services, a refugee agency, I worked directly with refugee populations, assisting them in accessing essential services such as housing, employment, healthcare, and language support. Through this experience, I gained firsthand insight into the challenges refugees face during resettlement, including cultural adjustment, legal barriers, and navigating complex social services that can be time consuming. Additionally, I observed how current U.S. immigration and refugee policies impact the resettlement process, influencing the availability of resources, the speed of integration, and the overall wellbeing of refugee families. Policies surrounding work authorization, public assistance eligibility, and asylum procedures play a critical role in shaping refugees' experiences and their ability to establish self-sufficiency. For my presentation, I will share my experiences working with refugees, the systemic challenges they encounter. I will discuss how policy decisions at the federal and state levels affect service delivery and integration outcomes. Additionally, I will reflect on the professional and personal growth I gained through this internship and explore how agencies like Jewish Family Services navigate challenging systems support refugees effectively. By presenting these insights, I hope to contribute to a broader conversation on the importance of strong resettlement policies and community-based support systems in fostering successful refugee integration.

New York State Guaranteed Income Pilot Program

Johnny Guzman, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

How does the New York State Guaranteed Income Pilot Program impact poverty in Buffalo? Guaranteed income programs, which provide monthly cash payments to low-income individuals, have been tested in various U.S. cities with positive results, such as improved financial stability and reduced stress. However, critics argue that

these programs don't address the root causes of poverty, such as systemic inequality, job scarcity, and high living costs. To analyze the potential impact of this policy, I reviewed local government reports, case studies from other cities, and relevant academic research on guaranteed income programs. Findings suggest the program could provide immediate financial relief for individuals in Buffalo, helping them cover the cost of basic needs. However, local data highlights the challenges of high living costs and limited job opportunities, which may undermine the long-term effectiveness of the policy in reducing poverty. While the guaranteed income policy can provide short-term relief, additional strategies such as job creation and affordable housing initiatives are necessary for sustainable poverty reduction in Buffalo. My poster will explore the potential benefits and limitations of the guaranteed income program in Buffalo and encourage the community to discuss how it can be integrated with other poverty-reduction policies. I will provide steps for individuals to either support or advocate for adjustments to ensure the policy effectively addresses the needs of Buffalo's low-income residents.

Exploring Mimicry and Visual Communication in Woodpeckers: A Field Study Utilizing 3D-Printed Models

Nick Hahn, Biology
Faculty mentor: Professors Gavin Leighton, Biology; Chris Pennuto, Biology

The evolution of similar phenotypes may result from comparable environments; however, it may also be caused by mimicry. An example of mimicry is the mimicry complex of Hairy Woodpeckers (Dryobates villosus) and Downy Woodpeckers (Dryobates pubescens). The Downy Woodpecker is predicted to gain competitive benefits by looking like the larger, more dominant, Hairy Woodpecker. To quantify the potential benefits of this mimicry, we used 3D-printed models of the Hairy Woodpecker and the Downy Woodpecker, taxidermy specimens of the Hairy Woodpecker and Downy Woodpecker, as well as 3D-printed models of the Red-bellied Woodpecker and the White-headed Woodpecker. We affixed these models and specimens to feeders filled with suet and we measured several behavioral variables. The results show birds are hesitant to land on the feeders that had models that resembled woodpeckers, regardless of size. However, birds did not seem to be opposed to unpainted models. Thus, smaller models seem to gain a benefit by resembling larger species.

3D Shibori: Using Traditional Fabric Dyeing Techniques in Innovative Ways

Gabrielle Hall, Art & Design: Fiber Arts
Faculty mentor: Professor Jozef Bajus, Art & Design

My work is based in dyeing silk organza using Shibori resist techniques to create three dimensional forms. The art of fabric dyeing using Shibori resist techniques has

a deeply rooted history in cultures across the world. When these traditional techniques are combined with hot acid dyes and silk organza, they not only act as a color resist, but as a mold for the fabric to shrink and form around. This creates endless possibilities for how to change a typically two dimensional artform into an interactive three-dimensional piece that plays with the space around it. Through my research, I have experimented with different dye combinations, colors, resists, and pleating techniques to manipulate organza into sculptural pieces. My goal is to create large scale work that reaches beyond hanging on a wall and asks for the audience to interact with it.

Empowerment Through Knit Fashion

Devonte Henry, Fashion & Textile Technology
Co-author: Daunte Xaiver Townsell, Jade Hayslett, Darren Smith
Faculty mentor: Professor Arlesa Shephard, Fashion & Textile Technology

Women's Knit-Wear sparked an evolution in the 16th century through the 1990's. Women's knit fashion brought strength due to its versatile style and comfort. These styles are adaptable for both formal and casual attire due to their elaborate patterns, ribbed textures, and roomy fits. Knit has a long history, stretching back to ancient Egypt, where early knitted artifacts were discovered. Knitting guilds emerged in the 16th century, and in 1589, the knitting machine transformed production. The Industrial Revolution of the 19th century brought mass production, making knitwear widely available. It became a fashion staple in the 20th century, progressing from functional clothing to haute couture. Going into the 1950s, the "Women's Home Industries", a post-war offshoot, hired hand-knitters and became known for making sweaters with an open neck and three-quarter sleeves. This gave women more recognition of creativity and care for the niche fashion market in the 50s. These garments exemplified sophistication and practicality, and thus supported the shift toward modern, casual femininity. This parallels women's initiative to exhibit individuality within fashion during a time when society limited creativity for womenswear. Their legacy paved the way for today's relaxed, feminine trends, influencing designers and bringing that classic beauty and new vibe to the current fashion world.

From Struggle to Strength: Social Work Impact at Journey's End Refugee Services

Diana Hussain, Social Work
Faculty mentor: Professor Amy Manning, Social Work

This presentation will focus on my internship experience at Journey's End Refugee Services in Buffalo, NY, a non-profit organization dedicated to providing essential resources and services to newly arrived immigrants and refugees. The agency's offerings include refugee resettlement, legal services, employment assistance, and

educational support. Through this internship, I have gained valuable insights into the intersection of social justice and the refugee community, particularly in the context of social work. Social justice is a fundamental aspect of my work, advocating for human rights, equity, inclusion, and access to vital resources for marginalized populations. This principle is especially relevant when supporting refugees who face significant barriers to integration, including discrimination, xenophobia, and limited access to services. My internship allowed me to observe firsthand the critical role case managers play in helping refugees navigate their new lives in Buffalo. Through my work alongside my supervisor, Zahra Sulliman, I have deepened my understanding of the complexities refugees face while adjusting to their new environment. During my 200+ hours at Journey's End, I assisted with various tasks such as filing and submitting school applications, facilitating social security number registrations, and providing bus training. These experiences have highlighted the importance of empowering refugees with the tools they need to succeed and feel welcomed in their new communities. This presentation will discuss how my internship reinforced my commitment to social justice, further shaping my aspirations as a future social worker.

Social Media and Influences

Meghan Johnson, Psychology
Co-author: Cassidy Baron, Lauren Thomas, Elsa Graf, Lindsey DePietro
Faculty mentor: Professors Howard Reid, Psychology; Kimberly Kamper-DeMarco, Psychology

Social media fills a considerable chunk of a college student's life, taking up an average of 20% of their time (Talaue et al., 2018). The purpose of this study was to analyze the relationship between active and passive social media use and correlations with life satisfaction, along with potential interactions with state self-esteem, social comparison, and mindfulness. A total of 145 undergraduate students were surveyed using the Social Media Activity Questionnaire, the State Self-Esteem Scale, the Students' Life Satisfaction Scale- German Version, the Iowa-Netherlands Comparison Orientation Measure, and the Cognitive and Affective Mindfulness Scale-Revised. Results indicate that self-esteem is positively correlated with life satisfaction and passive social media use was found to have a negative correlation with the social aspect of self-esteem. This could be a result of feeling judgment while using social media, possibly by observing cyberbullying. Alternatively, if you have low self-esteem, that could lead one to feel insecure about any possible expressions on social media. Future research should examine these variables longitudinally to determine the role of mediation and the impact of temporal precedence.

Mentorship, Mental Health, and Maybe Some Uno

Adiya Jones, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

This presentation will highlight my experience as an intern at Lake Shore High School through the agency, Compeer of Greater Buffalo. Compeer Buffalo provides social support through friendship to individuals ages 6 and up who are striving for mental well-being. The agency acknowledges that friendships help alleviate loneliness and isolation where they provide individual mentoring, social activities, school support, and mental health education. As a mentor to high school students (grades 9–12), my role was to provide support, guidance, trust, and direction as they dealt with challenges related to their mental health and daily lives. I will discuss how these experiences contributed to supporting students' mental well-being and the influence of my work. Additionally, I will cover four essential social work competencies: demonstrating ethical behavior, engaging in policy practice, engaging with individuals, families, groups, organizations, and communities, and understanding diversity and difference in practice. This presentation will discuss the importance of these competencies in obtaining my bachelor's in social work and how they shape effective social work practice. My poster will present data on Lake Shore High School, the population served, and the agency's goal of promoting mental well-being through meaningful relationships.

The Expansion of Desserts Among Women During The Progressive Era.

Kaya Karcher, History
Faculty mentor: Professor Bridget Chesterton, History and Social Studies Education

I plan and would like to present my research on the expansion of desserts among women during the Progressive Era. The research I conducted focuses on the differences between White women in the North and Black Women in The South. To conduct my research on the North, I was able to obtain primary sources such as various Cookbooks and Home Manuals, through the Buffalo Historical Society (Library of the Buffalo History Museum). While conducting research on the South it was difficult as it was not accessible publicly or there were lost materials. HaithiTrust and the E.H Butler Library are where I found most of my Primary sources on the South. The Library of Congress contained various letters, narratives, and articles to better my research as well. By highlighting the lack of information on a group that has been and is oppressed, my research adds and proves how often Black women are left out of historical significance when also contributing a great deal of information.

Triumph & Transformation: Where Graphic Design Meets Gameplay

Danielle King, Art and Design: Graphic Design
Faculty mentor: Professor Shasti O'Leary-Soudant, Art & Design

Triumphant is a meticulously crafted card deck that reinterprets ancient alchemical symbols through the bold elegance of graphic design. Drawing inspiration from classical representations of the four elements—earth, water, air, and fire—this deck

transforms esoteric iconography into a visually striking, contemporary aesthetic. Each suit embodies its respective alchemical essence, using geometric compositions, bold symmetry, and linework reminiscent of early 20th-century decorative arts. Rooted in the tradition of playing cards and tarot, this deck reimagines the archetypal meanings behind each suit, drawing from the visual storytelling and spiritual associations found in early sets of playing cards. The fusion of ancient symbolism with contemporary compositions creates a unique interplay between history and design, offering both a functional deck for gameplay and a collectible work of art. The deck's intricate yet minimalist approach reimagines alchemical tradition as a celebration of transformation and mastery, inviting players to engage with the rich visual language of the mystic arts through a sophisticated, modern lens. It's through this harmonious balance of mysticism and modernity that this card deck stands as a celebration of artistic and alchemical evolution.

Passenger Pigeon – Its What's for Dinner: Interpreting Skeletal Remains of Passenger Pigeons from Old Fort Niagara.

Victoria Kohler, Anthropology; History
Faculty mentor: Professor Susan Maguire, Anthropology

The 2009 Buffalo State Archaeological Field School at Old Fort Niagara excavated Building 408b. Historic plans identify this structure as an officer quarters, quarters, or barracks and it was in use from approximately 1757 to 1805. This project seeks to interpret the use of passenger pigeons (Ectopistes migratorius) at the fort during this time period. Passenger pigeons were extremely common and widely hunted during the late 18th century. These birds, once the most abundant bird in North America, are now extinct. Historic accounts describe the vastness of the flocks and the use of these birds for food. Passenger Pigeon remains found during excavation of building 408b will be identified by element and the unit and level where they were recovered in the excavation. These remains will be cross referenced with ceramics collected in corresponding levels to date the time period of use. Passenger pigeons hunted at the fort may have been processed outside of 408b [previous officer's quarters] and then used to feed those encamped at the Fort.

Armed and Ready: Building a Robotic Arm for Martian High-Fives (and Other Tasks)

Thomas Kotarski, Mechanical Engineering Technology
Co-author: Joe Nowak, Dylan Devine
Faculty mentor: Professor Jikai Du, Engineering Technology

As humanity prepares for sustained exploration of Mars, the need for advanced robotic systems has become critical. Current Mars rovers face challenges in manipulating objects within varied and unpredictable environments, limiting their scientific capabilities. This project presents the design and construction of a novel

robotic arm specifically engineered for Martian conditions, aimed at enhancing dexterity and reliability for tasks such as sample collection and equipment repairs. Utilizing a modular design, we integrated lightweight materials and a design strategy to optimize performance in extreme temperatures and dust-laden atmospheres. Our methodology involved iterative prototyping and simulation, with ultimately, the fabrication of a modular arm that is capable of performing assigned tasks. Data collection focused on evaluating the arm's range of motion, load capacity, and task functionality, ensuring adaptability to advancing scientific process in the Martian landscape. Readers can expect a detailed exploration of the engineering challenges encountered, the iterative design process, and the implications for future Mars missions. Our research aims to contribute valuable insights into robotic capabilities, paving the way for more effective exploration of the Red Planet.

Three-Phase Transformer Trainer: Making Connections Right

Noah Kramer, Electrical Engineering Technology
Co-author: Ronald LoTempio, Mustafa Othman, Dominic Gramza, Daniel Madigan
Faculty mentor: Professor Ilya Grinberg, Engineering Technology

The Transformer Trainer is a specialized tool designed to provide safe, hands-on training for linemen and electrical workers. It allows users to measure and record 3-phase voltages across different transformer configurations while displaying phase angles and a phasor diagram in real-time. This product fills a critical gap in the market, as no existing device currently offers this combination of safety, functionality, and educational value. The trainer steps down high voltages to a safe range for microcontroller operation, ensuring that users can practice and learn without the risks associated with working on live high-voltage systems. By documenting common transformer connections and failures, the Transformer Trainer will serve as an invaluable resource for training and education in the electrical industry.

A.R.M.E.D: Automatic Resistor Metric Evaluation and Distribution

Richard Lange, Electrical Engineering Technology
Co-author: Alex Padilla, Daniel Jarzynka, Dawt Sang, Desmin Murphy
Faculty mentor: Professors Ilya Grinberg, Engineering Technology; Steven Barker, Engineering Technology

Our research explores automated systems, resistor testing techniques, and the integration of robotics in educational settings. Thorough literature review was conducted to understand the current state of technology and identify gaps that the project addresses. Investigation of existing resistor testing and sorting approaches,, analysis of their strengths and limitations guided design of a more efficient and reliable system. Additionally, the capabilities and limitations of the Mycobot 280 robotic arm were investigated, ensuring it meets our requirements for precision and

accuracy. The project involved studying different methods of measuring resistance, such as using a voltage divider to accurately measure the resistance of resistors in our system. The Mycobot280 communication with the voltage divider output was established to ensure accurate resistor bin placement. The built in ESP-32 controller. Machine learning techniques of optical recognition of resistor values were explored as an alternative state-of-the-art method.

Algae Yarn: A Breakthrough in Sustainable Fashion

Grace Maldonado, Fashion & Textile Technology
Faculty mentor: Professor Mamta Saharan, Fashion & Textile Technology

As the fashion industry moves toward sustainable alternatives, algae yarn presents a revolutionary solution to reducing environmental impact. This work focuses on the development and application of algae yarn, an innovative textile material derived from algae powder, safflower oil, and water. Once dried, this yarn becomes durable, stretchy, and suitable for textile applications such as crocheting and weaving. By offering an alternative to synthetic and conventional fibers, algae yarn has the potential to significantly reduce plastic pollution and lower water consumption in textile production. This work will be showcased through an interactive exhibition, featuring a garment made from algae yarn and a live demonstration of its formation process. Attendees will observe how the yarn transforms when placed in a calcium chloride and water solution, providing a tactile experience with this futuristic material. By incorporating hands-on engagement, this study aims to foster discussions on biofabrication, sustainability, and the future of regenerative textiles. The findings emphasize the potential of bioyarn in redefining fashion's relationship with the environment and promoting innovative, biodegradable textile solutions.

Do Impulsivity vs. Under Control Levels Predict Marijuana Related Consequences.

Sophia Matamoros, Psychology
Faculty mentor: Professor Michael MacLean, Psychology

Marijuana use among college-aged individuals has been steadily increasing, especially with the push for marijuana legalization nationwide. With this increase, there is growing concern regarding the cognitive, academic, and social consequences of marijuana use. Prior research has identified impulsivity, which is a tendency to act without thinking about consequences, as a strong predictor of substance use. However, under-control, which involves thinking about negative consequences but acting anyway, remains understudied in this context. Typically, these factors have been researched as moderators of alcohol and hard drug use; however, literature regarding marijuana use consequences remains minimal. This study examines whether impulsivity or under-control is a stronger predictor of negative marijuana-related consequences in college-aged users. Approximately 200

college-aged participants (100 Buffalo State University students and 100 participants from Cloud Connect) will complete self-report assessments measuring impulsivity, under control, marijuana use frequency, and marijuana-related consequences. A multiple regression analysis will be used to analyze the data. We hypothesize that while both impulsivity and under control will predict negative marijuana-related consequences, impulsivity will emerge as the stronger predictor. The relationships between these factors and their implications will be further discussed.

Social Constructs During the 19th and 20th Century and Its Effect on Women's Swimwear

Kamryn McEachin, Fashion & Textile Technology
Co-author: Kennedy Hernandez, Na'Yanna Green, Zoi Mastoras
Faculty mentor: Professor Arlesa Shephard, Fashion & Textile Technology

Our topic is on the evolution of women's swimwear, in relation to women's social constructs and why it rapidly changed from the 19th to 20th century. Our focus is the societal challenges and restrictions that women went through for simply wearing attire to the beach, pool, and in public. With the emergence of swimming as a competitive sport in the early 20th century we see the new one-piece bathing suit, which was sparked by Olympic swimmer Annette Kellerman's story. Moving to the 1930's the health and fitness movement encouraged women to participate in exercise, like swimming, which led to more revealing design in swimwear. This led to the invention of the bikini in 1946. With its changes, comes a shift in attitudes towards modesty in the 20th century. This research shows the clear evolution of how swimsuit design correlated with social events that spurred its change. Swimwear is one example of women's expanding rights throughout the 20th century. This research prompts a conversation about women's social expectations being upheld by their dress. From being arrested and outlawed for wearing bathing suits in the street during the 1910s, to the first bikini being sported in the 1952 French film, Manina, The Girl in the Bikini, our research highlights how women pioneered changing this narrative of modesty through swimwear.

The Influence of Adverse Childhood Experiences on Future Criminal Behavior

Isabella Melfi, Psychology
Faculty mentor: Professor Eyad Naseralla, Psychology

This study will explore the relationship between Adverse Childhood Experiences (ACEs) and criminal behavior in adulthood. ACEs, which include experiences such as abuse, neglect, and household dysfunction during childhood, have been shown to have lasting effects on mental health and behavior. Previous research suggests that individuals with higher ACE scores may be at an increased risk for engaging in criminal behavior, but the nature of this relationship requires further examination. To

investigate this, a survey will be administered to a sample of adults, assessing ACEs, criminal behaviors, and additional factors such as demographic information, mental health, and substance use. These factors are known to correlate with both ACEs and criminal behavior, and their inclusion will provide a more comprehensive understanding of how childhood adversity might influence criminal activity. The study will aim to identify patterns between ACE scores and criminal behavior, potentially shedding light on how early life trauma contributes to later criminal actions.

The Struggle Within: The Everyday Hardships of Buffalo's Children In Poverty

Gabriella Miller, Sociology
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What does children living in poverty look like in Buffalo? Nearly ten million children in the U.S. live in poverty. In 2023, 13.7 percent of children lived in poverty in the U.S. compared to 12.4 percent in 2022, which is an increase of about one million children. To determine if childhood poverty looks similar here in Buffalo, I used local data and interviews with human service agency staff. About forty percent, equating to two out of five children, live in poverty in Buffalo, making Buffalo the seventh largest city in child poverty amongst large U.S. cities. Children under five in Buffalo experience higher poverty rates compared to older children. Research has shown that in previous years as much as eighty percent of students were eligible to receive free lunch in the Buffalo City School District which indicates a high level of student poverty. Through a Buffalo based nonprofit organization, 180 schools in Western New York and over tens of thousands of students each year have benefited from over five million dollars' worth of free school supplies. Buffalo needs to see the implementation of more initiatives and incentives that will benefit poverty-stricken youth and help empower them to succeed. The overall goal is to bring awareness of the severity of youth poverty in Buffalo; increase community awareness and support of organizations that provide basic needs and hope to children; and encourage political leaders to focus their efforts on combating poverty amongst children in Buffalo.

Analyzing poly-SUMO-2/3 Chain Signals Using Human Stable Cell Lines with Inducible Expression of GFP-tagged SIMs

Alif Ann Noor, Biology, MA
Faculty mentor: Professor Xiang-Dong "David" Zhang, Biology

Polymeric SUMO-2/3 chain modification plays a vital role in regulation of DNA damage repair and accurate chromosome segregation, yet the underlying mechanisms remain poorly understood. The preliminary results in Dr. Zhang's laboratory reveal that transient expression of GFP-tagged RNF4 N-terminal region containing five tandem SUMO-interacting motifs (SIMs) increased levels of both poly-

SUMO-2/3 chain signals and chromatin bridges, a hallmark of genome instability, in human cells. To investigate the role of poly-SUMO-2/3 chain signals in regulation of chromosome segregation and genome stability, we have focused on generating stable HeLa cell lines with inducible expression of GFP-tagged human RNF4-SIMs wildtype (GFP-hRNF4-SIMs-WT), rat RNF4-SIMs wildtype (GFP-rRNF4-SIMs-WT), or rat RNF4-SIMs mutant (GFP-rRNF4-SIMs-Mut) with a defect in interaction with poly-SUMO-2/3 chain signals. We have successfully generated the three pTetOne recombinant plasmids for doxycycline-induced expression of GFP-hRNF4-SIMs-WT, GFP-rRNF4-SIMs-WT, and GFP-rRNF4-SIMs-Mut, respectively. In addition, we have demonstrated that the transient expression of GFP-tagged human RNF4-SIMs wildtype (GFP-hRNF4-SIMs-WT) can be induced by doxycycline using both Western blot and immunofluorescence microscopy. We are currently working on co-transfecting HeLa cells with each of the three pTetOne recombinant plasmids and the puromycin resistance gene followed by selecting the stable HeLa cell lines in DMEM medium containing 3.0 μg/ml of puromycin. These stable cell lines will allow us to elucidate mechanisms by which poly-SUMO-2/3 chain signals regulate DNA damage repair, chromosome segregation, and genome stability.

Breaking the Silicon Ceiling: How CdTe and Perovskite Compare

Kevin Ochoa, Mechanical Engineering Technology
Leanna Tse
Faculty mentor: Professors Saquib Ahmed, Engineering Technology; Joaquin Carbonara, Mathematics

How does cadmium telluride (CdTe) and perovskite photovoltaics (PV) compare to traditional crystalline silicon (c-Si) in terms of efficiency, scalability, and stability? Due to concerns on climate change, the global demand for renewable energy has been rising every year. Researchers have been working on more efficient and cost-effective solar technologies to meet these needs. While c-Si has been the industry standard, alternatives like CdTe and perovskite offer the potential for higher efficiency and easier manufacturing. This project focuses on recent developments of CdTe and perovskite photovoltaics. Basic research on specific fields includes trends in efficiency, scalability potential, and overall technological progress. A further analysis of economic viability and aspects of ethical, legal and social implications (ELSI) is also conducted. Cdte and perovskite PVs are then compared to c-Si as the baseline and ranked based on their performance in these areas. The study also explores how machine learning can further enhance next-generation PVs. The goal of this research is to assess how CdTe and perovskite photovoltaics have evolved in recent years and to determine whether they have a clear path to surpassing silicon in commercial solar applications.

The Past Still Hurts: Understanding Trauma's Role in Addiction

Daniel Paone, Social Work

Faculty mentor: Professor Catherine Mazzotta, Social Work

Cazenovia Recovery is the largest residential recovery agency in Western New York, offering multiple levels of care, from inpatient rehabilitation to supportive living. My internship takes place at Sundram Manor, a men's reintegration home, where I assist staff with administrative duties, surveys, group facilitation, one-on-one sessions, assessments, progress notes, and treatment plans. Through this experience, I have gained insight into the complex relationship between trauma and addiction and the importance of trauma-informed care (TIC) in long-term recovery. Many residents at Sundram Manor have experienced significant trauma, homelessness, and mental health challenges, creating barriers to sobriety. This presentation examines how TIC, an approach that prioritizes safety, empowerment, and individualized care, affects recovery outcomes. Using program data from Cazenovia recovery and direct experiences from residents, I analyze how healing from trauma through emotional regulation, Motivational Interviewing (MI), and peer support contributes to lower relapse rates and improved mental health. Findings from this analysis have broader implications for recovery programs. By integrating trauma-informed strategies, residential programs can provide more effective, person-centered treatment, leading to higher engagement, reduced relapse rates, and greater long-term stability. Addressing trauma as a core element of addiction treatment helps recovery agencies improve outcomes and better support diverse communities facing barriers to care. One of the most significant aspects of this internship has been seeing how trauma-informed approaches restore hope and empowerment to individuals who face extreme hardship. This presentation will explore the biopsychosocial link between trauma and addiction and discuss how reintegration programs can implement trauma informed approaches to foster lasting recovery.

Into the Wild

Maggie Parobek, Art and Design: Graphic Design
Faculty mentor: Professor Shasti O'Leary-Soudant, Art & Design

As a graphic designer and digital illustrator based in Buffalo, I create work that seeks to capture the calming essence of nature. Through my illustrations, I aim to bring the quiet beauty of the natural world into spaces where it can be fully appreciated. I want my work to evoke a sense of peace and balance—qualities that are often overlooked in the chaos of modern life. Each piece reflects my deep connection to the Earth, its vastness, its intricate simplicity, and its undeniable beauty. By immersing myself in landscapes, color palettes, and nature’s inhabitants, I strive to remind viewers of the profound serenity that the world offers. I hope to inspire a sense of wonder and gratitude, inviting others to pause and reconnect with the world around them. My work is more than just visual—it is a call to slow down and notice the small, fleeting moments of beauty that often go unnoticed. In a world that feels increasingly disconnected, I want my art to serve as a gentle reminder of the peaceful happiness that surrounds us, if only we take the time to embrace it. Through my digital paintings,

I hope to cultivate reverence for nature and spark a deeper appreciation for the wisdom and comfort it provides.

Professional Ethics: Rules vs. Character

Annalise Rameres, Forensic Chemistry
Faculty mentor: Professor Jason Grinnell, Government, Planning, and Philosophy

On one hand, professional ethics has long had tension between two primary models by which ethics is understood as; a set of rules (deontic) or as a commitment to excellence (aretaic). However, what is generally agreed upon as fundamental ethical principles is as outlined in The Belmont Report--respect for autonomy, beneficence, and justice. Due to this, nearly every professional association's "code of ethics" matches more precisely with a deontic or aretaic model, with varying degrees of quality in applying ethical principles to their respective profession. In my project, I examine professional ethical codes from various sources, first by classification then by evaluation of how well they apply ethical principles. Using this information, I will then determine whether a deontic or an aretaic model is more successful in reflecting fundamental ethical principles.

DNA Barcoding for Lichen Identification

Emma Ramseier, Biology
Faculty mentor: Professor Olga Novikova, Biology

Lichens are a unique group of symbiotic organisms that play a crucial role in ecosystem stability, nutrient cycling, and bioindication. They thrive in diverse climates and extreme conditions, demonstrating remarkable adaptability and resilience. Despite their ecological importance, lichen identification is challenging due to morphological variability, cryptic species, and environmental influences on their appearance. Traditional classification methods rely on macroscopic and microscopic characteristics, which are often insufficient for accurate species determination. To address these challenges, DNA barcoding has emerged as one of the most reliable methods for species identification and classification. This process involves extracting DNA, amplifying specific genetic markers using PCR, and sequencing the resulting DNA fragments to generate a unique barcode for each species. The nucleotide sequences are then compared to existing genetic databases, allowing for precise species identification and taxonomic verification. The Eckert Herbarium at Buffalo State University houses a unique lichen collection with specimens from Western New York (WNY) and Downeast Maine. These herbarium specimens provide a historical record of biodiversity, offering well-documented, vouchered samples for building a reliable DNA barcode reference library. Our project focuses on creating this library from the Eckert Herbarium's collection to support and advance lichen identification,

taxonomic revisions, conservation, biodiversity studies, and climate change research, while improving overall species documentation and data accessibility.

Empowering Marginalized Communities in Buffalo: Hutchinson Central Technical High School/ Mobile Counseling of New York

Alex Rybarczyk, Social Work
Faculty mentor: Professor Amy Manning, Social Work

Working as an Attendance Liaison at Hutch Tech provided me with the opportunity to play a critical role in supporting students' academic success by managing and improving attendance records. My responsibilities included communicating with students, parents, and faculty to ensure timely attendance reporting and addressing issues of truancy. I worked closely with students to understand the underlying causes of absenteeism and collaborated with school counselors to develop personalized interventions, helping students stay engaged in their education. In addition to my role at Hutch Tech, I initiated a Peer Mentorship Program aimed at fostering a supportive environment for students. This program connected upperclassmen with underclassmen to provide guidance, offer academic support, and promote personal growth. It encouraged a sense of community within the school, allowing students to develop leadership skills while supporting their peers in navigating the challenges of high school life. At Mobile Counseling of New York, I assisted with case management, providing crucial support to individuals and families in need of counseling services. My role involved helping clients access resources, tracking progress, and maintaining detailed records of their treatment plans. I collaborated with counselors and other team members to ensure that clients received comprehensive care tailored to their unique circumstances. This presentation will discuss my experience in the field and the importance of empathy, attention to detail, and effective communication in delivering quality support to individuals facing various challenges.

Bridging Stability and Wellness for Previously Homeless Individuals with Mental Health

Demisha Smith, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

Gerard's Place is a transitional shelter for previously homeless individuals with physical or mental health diagnoses. They provide temporary housing, case management, mental health support and access to resources such as food pantries, and vocational skills. Gerard's Place helps residents transition to stable living environments. Without intervention, this population often faces major obstacles to achieving stability. My role there is a Social Work Intern. I have conducted intake assessments and interviews to determine one's program eligibility, engaged in one-

on-one case management with clients and staff, helped clients access health providers by booking taxis, assist clients with applications for SNAP and other assistance programs, and attended weekly Homeless Alliance of Western New York meetings. I also conduct a self-care group, emphasizing wellbeing by promoting mindful activities through arts and crafts, games, and peer collaborations.Gerard's Place gave me hands on experience in practicing trauma-informed care, crisis intervention through direct client engagement, and advocating for individuals navigating complex systems. I integrated skills learned from class such as active listening during client case management. I also practiced social work principles acquired from my studies, such as strength-based approaches and working with marginalized groups. For instance, I applied research informed methods to conduct self-care groups. In-class and hands-on experience increased my understanding of homelessness and mental health while improving my skills in engagement, assessment, intervention, and advocacy.

Wyoming County, NY: Are There More Cows than People?

Kolden Smith, History
Faculty mentor: Professor Mary Perrelli, Geosciences

Wyoming County, located in New York State, is renowned for its agricultural activities, particularly livestock production. In fact, it's often said that the county has more cows than people. This project explores the accuracy of this claim by analyzing data from the US Census Bureau and the New York State Department of Environmental Conservation using ArcGIS Pro. Through spatial analysis, we aim to assess the county's livestock population relative to its human population, providing insights into its agricultural landscape.

There's No Place Like Home

Angela Spence, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

Working within the Buffalo Public School district the areas of student needs are significant. As a Social Work intern with Endeavor Health Services, my role is a Family Peer Advocate. One area of extreme need is for our families who are displaced or dealing with homelessness. Agencies are placed within the schools to be another layer of support for these barriers and disparities. We are there not only for support for the students but also the parents/guardians. While supporting the families we also act as an additional layer of connection and support with the school support team. With the hopes of creating a community within the school to best support the family's needs. The school day can be difficult for anyone but adding housing insecurities into it adds a magnitude of levels to a student's daily load. Homelessness or displacement brings a list of significant barriers and hardships that

go beyond the need for a house. Homelessness or displacement can cause behavioral issues, safety concerns, mental and physical health issues, and immeasurable more areas of impact. In my role I have learned the importance of advocating for those who are unable to, conducting intake assessments, connecting families with community services and support and how to apply the data to interventions and goals for the families. Working directly with families has strengthened my understanding of their basic needs' barriers.

Global Trade and Economic Impacts of Walnuts: From Farm to Shelf

Thomas Strusienski, Social Studies Education
Co-author: Christopher Hurley
Faculty mentor: Professor Vida Vanchan, Geosciences

This study examines the globalization of walnuts and its impacts on consumers and economies. It seeks to provide a better understanding of how walnuts find themselves on the shelves of our grocery stores within the United States. Analyses include the global trends of who the top producers are and how that impacts the environment; what a decrease or increase in this market will do to the countries engaged in this trade and what that means for their respective economies. Top producers, exporters, importers, and consumers around the globe are identified as well as the impacts this global trade has on our planet.

A Safety Net or a Slippery Slope? Examining the Potential Impact of Universal Basic Income in New York State

Rabbiatou Sumbundu, Applied Psychology
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

How will Senate Bill S6148 impact families living in poverty in Buffalo? In New York State, over 2.7 million people live below the poverty line, including thousands of families who could be directly affected by this legislation. In Buffalo alone, approximately 27% of residents experience poverty, making policies like Universal Basic Income (UBI) especially relevant. Senate Bill S6148 proposes a feasibility study on implementing a UBI program that would provide annual payments of $7,200 to individuals and $14,400 to couples earning less than $80,000 per year. I will analyze this policy to determine how it will impact families in Buffalo. Specifically, I will examine whether UBI could reduce financial hardship, improve economic stability, and support those experiencing job instability. If implemented, this policy could alleviate poverty, increase consumer spending, and provide a safety net for low-income individuals. However, questions remain regarding funding sustainability and potential effects on workforce participation. To support or oppose this policy, individuals can take several actions, including contacting state legislators to express their stance, participating in public forums, engaging with advocacy organizations

focused on poverty reduction, and educating their communities on the potential impacts of UBI. By staying informed and involved, individuals can influence the legislative process and contribute to shaping policies that affect economic security for those living at or near the poverty line.

Ring of Hope: Assisting Victims of Domestic Violence Through Hotline Service

Agnes Tuffour, Social work
Faculty mentor: Professor Catherine Mazzotta, Social Work

Domestic violence shelters provide support for individuals experiencing abuse from intimate partners or people who are in danger. Haven House is a nonprofit organization that serves the community and offers confidential shelter. They support victims of domestic violence, help them find safety, and access important services. In Haven House, we focus on assisting victims of domestic violence and come up with interventions that would help the client in long-term recovery. The organization has a 24-hour crisis hotline service that offers immediate support including legal advocacy, support groups, and counseling for individuals facing domestic violence. My role at Haven House is as a domestic violence hotline intern. I screen people who come to us for assistance, assess their needs, and find the right resources for them. When talking with clients I use evidence-based communication skills like active listening, empathy, and validation to assist them during the hotline calls I receive.
Also, I have observed that clear communication and emotional validation significantly influence a survivor's willingness to seek further assistance. However, there are some challenges faced at the agency including limited bed spaces, the emotional toll on the hotline workers, and language barriers that can slow down access to support. To improve Hotline services, increasing the funds and more accessible support system for survivors of domestic violence would be great and beneficial for individuals. Through my experience, I have gained a deeper understanding of the challenges survivors face which has strengthened my commitment to advocating for survivors of domestic violence.

The Effects of Increased Hydration on Vocal Qualities in Individuals with Muscle Tension Dysphonia.

Roopitha Vaithilingam, Speech-Language Pathology, MSED
Faculty mentor: Professor Anita Senthinathan, Speech-Language Pathology

Voice disorders such as Muscle Tension Dysphonia (MTD), are prevalent among adults in the US. Symptoms often include, but are not limited to, the following vocal qualities: strained, breathy, low volume, raspiness, and hoarseness. There are mixed findings on the effects of systemic hydration on vocal attributes. This study will investigate vocal qualities in individuals with and without MTD following a hydration schedule. If participants do not already meet the recommended hydration schedule,

they will either be asked to do so (experimental group) or will not be asked to make any changes in their diet (control group). All participants will be asked to complete a range of speech and quasi-speech tasks (e.g. prolonged ah, sentence reading, conversation task) while their voice is being recorded. They will also be asked to complete subjective ratings of the quality of their voice and rate the impact that their voice has on their ability to participate in daily speech-related activities. All participants will then log their food and drink intake over 5 days and will be re-tested on all objective and subjective voice tasks. This study will focus on measuring acoustic parameters that reflect symptoms specific to MTD such as shimmer and jitter. Comparisons will be made between the experimental and control groups.

Parental Financial Socialization and Its Relationship to Student Financial Literacy and Debt

Alex Valery, Psychology
Faculty mentor: Professor Jill Norvilitis, Psychology

This study investigated how parental role modeling, parental teaching, and parental preparedness influence college students' financial confidence, well-being, and debt levels. Additionally, the study examined the impact of socioeconomic status on students' financial self-confidence, financial well-being, and the amount of debt. Results indicate that while socioeconomic status plays a role, parental involvement is a stronger predictor of financial confidence and well-being. Students with engaged parents report higher financial security and limited impact on debt.

The Prohibition of Black Cuisine: Delaware's Peculiar Antebellum Apartheid and the Black Culture it Inhibited

Jevin Watkins, History
Faculty mentor: Professor Bridget Chesterton, History and Social Studies Education

Race dynamics in the mid-Atlantic reveal a peculiarity of the institutional racism in the antebellum period. In Delaware this peculiarity manifested itself in the form of a misguided self-conception which held that because Delaware's practices of institutional racism did not compare to the severity of the slavery in the U.S. South and/or the West Indies, it was not truly a slave state, despite having legalized slavery. While this racist thinking evolved through the 1820s it only saw it's end with the passing of the 13th amendment. Nevertheless, this was not before the development of a uniquely Black Delawarean food culture was stunted irreparably. This research seeks to illuminate the process by which that development was stunted and illustrate the nature of life for the antebellum Black community of Delaware.

Roles of BRCA1 SUMOylation in Regulation of DNA Damage Repair, Chromosome Segregation and Genome Instability

Samantha Wild, Biology, MA
Faculty mentor: Professor Xiang-Dong "David" Zhang, Biology

It has been observed previously that inhibition of global SUMOylation greatly increases chromosomal instability (CIN) and nuclear defects, including chromatin bridges, micronuclei, nuclear buds, and binuclei, yet the underlying mechanisms are still unclear. Here we hypothesize that SUMOylation of BRCA1, a known SUMO target and a key protein in repairing DNA double strand breaks (DSBs), is critical for DSBs repair, chromosome segregation, and genome stability. To test this hypothesis, we aim to generate human MDA-MB-436 breast cancer stable cell lines with tetracycline-induced expression of BRCA1 wild-type or its SUMOylation-deficient mutant. We have successfully subcloned the DNA fragments encoding EGFP-tagged BRCA1 and 3xFlag-tagged BRCA1 from the original plasmids pEGFP-BRCA1 and pDEST-3xFlag-pcDNA5-FRT/T0-BRCA1 into the pTetOne vector, respectively. The pTetOne-EGFP-BRCA1 and pTetOne-3xFlag-BRCA1 plasmids will be used to generate the DNA constructs encoding BRCA1 SUMOylation-deficient mutant, in which lysine (K) 119 is mutated to arginine (R). Furthermore, we will transfect the MDA-MB-436 cells with the recombinant plasmids encoding GFP-BRCA1 wildtype, GFP-BRCA1-K119R mutant, 3xFlag-BRCA1 wildtype, and 3xFlag-BRCA1-K119R mutant, respectively, and then select the stably transfected cells in the cell culture medium containing puromycin. These tetracycline-induced expressions of the EGFP-tagged or 3xFlag-tagged BRCA1 wild-type or mutant in the stable cell lines will be examined by immunofluorescence microscopy and Western blot. These stable cell lines will enable us to test our hypothesis that SUMOylation of BRCA1 plays a pivotal role in repairing DSBs and preventing the formation of chromatin bridges, micronuclei, nuclear buds, and binuclei.

Are You Fishing for Heavy Metals? A Case Study of Cayuga vs. Eighteen Mile Creeks

Mykayla Williams, Environmental Geography
Co-author: Ralph Garret, George Reimers, Andrew Miller, Anthony Morin
Faculty mentor: Professor Elisa Bergslien, Geosciences

Fishing is both a recreational activity and a food source for many residents of Erie County, yet local water sources are known to contain heavy metals such as arsenic, lead, and mercury. Despite mercury's well-documented neurotoxic effects, data on its presence in these waters remains limited. Our study aims to assess mercury and other heavy metal contamination in two frequently fished creeks, Cayuga Creek and Eighteen Mile Creek, to determine spatial variations in contamination and identify potential sources. We hypothesize that heavy metal concentrations, particularly mercury, will be highest in sediment samples rather than in the water column, as metals tend to accumulate in bed substrates over time. We predict Cayuga Creek to

contain more heavy metals due to its more urban location, as well as its proximity to dams, wastewater facilities, overflow sites, and inactive landfills, all of which are not present along the Eighteen Mile Creek. To test this, we will collect water and sediment samples from three locations along each creek—the source, midstream, and mouth—to compare contamination levels. We will also compare recorded concentrations with acceptable standards to gauge the safety of the creeks. Water samples will provide a snapshot of real-time contaminant levels, while sediment samples will reveal long-term accumulation patterns. We expect to find higher concentrations of heavy metals in sediment near industrial or urban areas, posing risks to both aquatic ecosystems and human health. This research will contribute to a better understanding of heavy metal contamination in Erie County's fishing waters and inform future environmental monitoring efforts.

Bridging Research and Practice: Enhancing Support for Special Education and Immigrant Students

Dylan Williams, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

I am currently working as a Social Work Intern at a Buffalo Public High School, where I am attached to the Student Support Program. This poster explores how combining research-based practices with targeted policy changes can enhance support for students in special education and immigrant populations. As part of my role, I gather and analyze social history documents to identify patterns in student needs, facilitate regular lunch group sessions to obtain detailed feedback, and monitor the enforcement of school policies. For example, I observed that the dress code was inconsistently applied, students were suspended for five days for minor infractions, which contradicts the intended disciplinary guidelines. In many cases, students could not afford alternative clothing, further underscoring the inequity of such harsh penalties. I have advocated for a closer review of these policies to ensure fair and equitable treatment for all students. My work combines quantitative data with student feedback to identify gaps in support and drive necessary policy revisions. Preliminary findings suggest that this research-driven approach improves student engagement and fosters a fairer, more inclusive school environment. Attendees will learn how proven methods and consistent policy enforcement can create kinder, more supportive learning spaces.

Climate Trend Analysis: Extreme Weather in Western New York

Joel Willis, Environmental Geography
Faculty mentor: Professor Stephen Vermette, Geosciences

The increased concentrations of greenhouse gases contribute to a warming world, along with an increase in extreme weather events. The poster addresses the

question: Is Buffalo warming and with Buffalo's recent standing as a "climate refuge" city, can we see a rising trend, or lack thereof, of different extreme weather events? The weather data used here is from the counties of Niagara, Erie, Chautauqua, Cattaraugus, Allegany, Wyoming, Genesee, and Orleans, collectively referred to as Western New York (WNY). Data from 1965-2024 is examined from the National Weather Service (NWS) Buffalo station as well as several NWS Cooperative (COOP) observation sites located elsewhere in WNY. Data is displayed on the poster through several graphs, and trends over time are examined. The year 1965 was chosen as the starting point, as plots of temperature data from Buffalo, the United States, and the Northern Hemisphere from 1895-2024 show coordinated increases after 1965, likely due to climate forcings. Some of the data that is used to determine if Buffalo and the surrounding counties are seeing changes due to climate change are: air temperature, Lake Erie water temperature, length of growing season, number of thunderstorm days, tornado counts, and lake effect snow events. Buffalo's temperature from 1965-2024 increased 3.3°F, a rate of around 0.55°F per decade. Interestingly, Lake Erie's water temperature shows an identical rise of 3.3°F in the same period. While Buffalo appears to be warming, several extreme weather trends show little change over time.

"Stop the White Genocide!" Mediating Effects of Conspiracy Theories on Threat and Behavior

Daisy Zhanay, Psychology
Faculty mentor: Professor Eyad Naseralla, Psychology

White Americans have viewed the recent influx of immigrants as a threat to their values and resources, which in turn would result in the eventual eradication of the white population. This threat stems from the Great Replacement theory, which states white people are being replaced at an ethnic and cultural level through mass migration. These sentiments have motivated people like Payton Gendron to commit racially motivated violence. Previous research has revealed threat and direct violent behavior, but few have examined conspiracy theories, threat, and violent behavioral intentions. The present study explores the mediating effects of conspiracy theories on perceived symbolic and realistic threat and violent behavioral intentions against Hispanic immigrants. By conducting a 2x2 factorial design ANOVA, we hypothesize that participants in the high symbolic and realistic threat condition will be more likely to endorse conspiracy theories and report higher violent behavioral intentions and support persecution toward Hispanic immigrants. Practical implications of anti-immigrant prejudice and conspiracy theories on behavioral intentions are discussed.

Typology: Sorting Through 17,355 Archeological Artifacts

Alexandria Dillemuth, Anthropology
Faculty mentor: Professor Susan Maguire, Anthropology

After an archeological excavation, recovered artifacts are first cataloged and then go through a detailed sorting process called typology. In 2017 Dr. Maguire led the Buffalo State University Archaeological Field School at Old Fort Niagara, Youngstown, NY where the student excavations yielded 17,355 artifacts. The artifacts from this dig were originally collected in the field according to their unit and level. For archival purposes, the artifacts will be sorted based on material and function. The artifacts will be sorted into acid-free archival boxes which I labeled according to the categories listed in the catalogue and then by unit and level. During this process, I found many artifacts of interest which I will be highlighting and providing context for.

Poster Session III
4:00-4:55, SAMC atrium

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Portable LiDAR System for 3D Mapping: Assembling, Data Collection, and Visualization

Abdullah Abadi, Computer Information Systems
Faculty mentor: Professors Tao Tang, Geosciences; Sarbani Banerjee, Computer Information Systems

To create virtual reality models in a computational environment, it is essential to collect three-dimensional (3D) data from the real world. LiDAR, a key technology in remote sensing, is commonly used for this purpose. In this study, we acquired a LiDAR scanner and integrated it with computer hardware and software, GPS (Global Positioning System), and a portable power supply to develop a mobile LiDAR system for digital data collection. After assembling and testing the system, we used it to scan the Technology Building and the Science and Mathematics Complex (SAMC), also capturing color images of the building walls and roofs. The primary objective of this work is to build an accurate, scalable virtual reality model in a computational environment.

Stepwise Growth of Gold Nanoparticles Using the Inverse Turkevich Method and Their Characterization by Spectroscopic Methods

Darling Arias, Forensic Chemistry
Faculty mentor: Professor Jinseok Heo, Chemistry

This study focuses on the synthesis of gold nanoparticles (AuNPs) of commercial quality and their characterization using UV-visible and Raman spectroscopy. The traditional Turkevich method relies on the reduction of Au(III) ions to Au(0) by boiling an Au(III) solution and then adding citrate ions. In contrast, the inverse Turkevich method adds Au(III) ions to a boiling citrate solution, which has been reported to produce AuNPs with a narrower size distribution. While small AuNPs (<20 nm) are relatively easy to synthesize, those with average particle sizes larger than 50 nm are more challenging due to their broader size distribution. As a result, a stepwise growth method using seed particles is widely adopted. The synthesis involves sequential stages, starting with seed particle preparation, followed by controlled growth through multiple steps. In this study, a four-step growth process was used to synthesize AuNPs. Their spectral properties were characterized using UV-Vis absorption spectroscopy and Raman spectroscopy, with and without micromembrane filtration using a 0.22 μm pore size filter. Additionally, a quick-freezing technique with liquid N_2 was employed to induce aggregation of AuNPs. These aggregates, termed quick freezing-induced AuNP aggregates (QFIAAs), are essential for comparing the quality of in-house synthesized AuNPs with commercially available products. The analysis

reveals spectral differences in UV-Vis and Raman spectra between the QFIAAs of the in-house and commercial products. In this presentation, these differences and their possible causes will be discussed.

Exploring Poverty in 1950s Buffalo: A Historical Analysis

Hazel Arteaga-Martinez, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What did poverty look like in Buffalo, New York in the 1950s? During the 1900s, Buffalo, New York, experienced economic and social challenges that led to widespread poverty in the city. Unemployment and economic instability were rampant for the working class. Those who were deeply affected, the African American and immigrant communities, faced systemic discrimination in not only employment opportunities, but housing and education as well. Many families were forced to live in inadequate conditions. Historical documents will provide information on how poverty looked for people living in Buffalo in the 1950s. I will be using historical documents, and articles from the Buffalo Public Library, to understand how poverty was addressed at a federal and local level. Federal programs like public housing and the expansion of social welfare were efforts to address poverty in Buffalo through the New Deal. Local organizations also did their best in alleviating some of the effects of poverty, but it was so persistent that it was limited help. Poverty in Buffalo is still prevalent today, just as it is throughout the United States as a whole. Uncovering the roots of poverty in this project will help spread awareness on a still relevant topic in 2025, especially with the ongoing housing crisis, inequality, and lack of public transit today.

Foster Love, Foster Hope, Foster Care

Brooke Attia, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

My senior year internship is at GA Family Services. GA Family Services is a foster care agency in the West Seneca area that opened in 2005. The mission of the agency is to help families achieve their goals and independence. There are a few different aspects to the agency. The main aspect would be the foster care and adoption work. Other aspects include Children's Health Homes, Post Adoption Services, and a Regional Permanency Center Program. Some things I do at the agency include attending supervised visitations, sitting in on play therapy, paperwork, and organizational tasks. As I reflect on my time at the internship, attending supervised visits between children and their biological parents has been the most interesting thing. Social justice to me is equitable access to justice for all. Social justice is important in the field of social work and foster care agencies. The agency works with children and families to provide sustainable support. This is my first

experience with a foster care agency and it has been interesting to see what goes on behind the scenes. The professionalism and values I learned will help me become a professional social worker. The caseworkers, therapists, and other employees all come together to work hard for these children and their families. GA Family Services is a great example of a determined foster care agency.

Interpreting Maps with the Help of GIS in a Third-Grade Classroom

Courtney Aures, Childhood Education
Faculty mentor: Professor Mary Perrelli, Geosciences

This project examines the relationship between universal human rights and park accessibility, with a focus on lower-income neighborhoods. Using ArcGIS Pro, third-grade students will analyze geographic data to understand imbalances in park access and how they relate to fair treatment and equal opportunity. The project aims to develop students' ability to understand and explain the concept of universal human rights and interpret key elements of maps through a spatial analysis approach. Aligned with NYS Social Studies Standard 3.8, this project emphasizes that everyone should be treated fairly and have opportunities to meet their basic needs. Aligning with NYS Geography Standard 3.1b, the project highlights the importance of globes, maps, photographs, and satellite images in conveying geographic information, including features such as title, legend or key, compass orientation, author, date, grid, and scale. When integrating these standards with GIS technology, students gain a deeper understanding of equitability, spatial equity, and the role of mapping and urban planning.

The Impact of Themed Instruction on Student Outcomes

Tatiana Banks, Psychology
Faculty mentor: Professor Pamela Schuetze, Psychology

For several decades, college instructors have integrated a central theme that is indirectly related to the content to teach their course. Such themed instruction often relies on pop culture to increase student engagement, comfort with course content, and understanding of the content. Using a video to provide a themed instruction approach and a non-themed instruction approach, we explored the impact of themed instruction on students' knowledge attainment and learning. We hypothesized that students in the themes-instruction video group would show higher engagement and knowledge attainment than those in the group without themed instruction. 108 participants were randomly assigned to watch the same video about executive functions with either embedded video clip examples from Sesame Street (n=60) or non-Sesame Street (n=48). They then filled out a questionnaire assessing knowledge of executive functions and completed rating scale items assessing their enjoyment and engagement with the video. Results of independent samples t-tests indicated

that students who watched the video with sesame street had a significantly higher score on the executive functions test, t(106)= 3.59, p=.016, and indicated that they enjoyed watching the video more than students who watched the video with non-sesame street examples, t(104)= 2.46, p=.05. These findings indicate that themed instruction is an effective teaching strategy for increasing students' knowledge acquisition as well as their engagement and enjoyment of the material that they are learning.

Bridging Education and Practice: A Social Work Field Placement at Western New York Children's Psychiatric Center

Allison Boeing, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

During 2023, 20.9 percent of adolescents were reported needing treatment or counseling from a mental health professional (National Survey of Children's Health, 2023). Children and adolescents with chronic behavioral or psychiatric disorders often struggle to function in their homes, schools, or communities without proper intervention. Many families may also face challenges in understanding how to best support loved ones dealing with mental health issues. My personal mission is to identify effective methods to empower families and clients with the knowledge, tools, and support they need to function healthily across all aspects of their lives. Over the course of the Fall 2024 and Spring 2025 semesters, I completed 400 hours as an intern at Western New York Children Psychiatric Center (WNYCPC). WNYCPC is dedicated to providing hope and recovery for children and adolescents with serious mental illnesses and emotional disturbances. My internship provided me with the opportunity to apply the knowledge and skills I have gained through Buffalo State's Bachelor of Social Work Program. I worked closely with referral sources, staff, and families to deliver evidence-based, trauma-informed care, striving to provide compassionate support for each client.

The Influence of Social Stress on Impulsivity in University Students

Harmoni Brown, Psychology
Faculty mentor: Professor Gehan Senthinathan, Social & Psychological Foundations of Education; Psychology

Age related differences in impulsivity and decision making are linked to ongoing brain development. As adolescents age into young adulthood, they become less impulsive, and this is related to the continued development of the prefrontal cortex and connections with the limbic system. Although this brain maturation and related reduction in impulsivity in young adults compared to younger populations is evident, social stressors that strongly activate the limbic system might promote impulsive

behavior. This study is part of a larger experimental procedure that includes additional measures. The purpose of this study was to explore how social stress influences impulsivity in young adults (undergraduates) aged 18-26 years of age. Participants will be randomly assigned to one of two groups. Saliva samples will be collected to analyze a biomarker of stress, and participants will complete the Core Alcohol and Drug Survey, which assesses the nature and scope of psychoactive substance use. Subsequently, Group 1 (the experimental group) will participate in the Trier Social Stress Test (TSST), which includes an anticipatory period for a mock interview, delivering a speech, and performing a mental arithmetic task in front of two judges. Group 2 (the control group) will complete a simple reading and counting task for a similar duration as the experimental group. A second saliva sample will be collected to explore changes in stress induced by the TSST. Finally, all participants will complete the State Trait Anxiety Inventory and the Barratt Impulsiveness Scale-11. Preliminary data will be presented. This study will improve our understanding of how social stress impacts impulsivity and decision making in young adults, which is important given the link between impulsive decision making and potential maladaptive behaviors such as substance abuse.

Investigating the Potential for a Buried Freighter at Tifft Nature Preserve Using Ground Penetrating Radar

Joshua Carlotto, Geology
Faculty mentor: Professor Kevin Williams, Geosciences

Tifft Nature Preserve is a popular natural and hiking destination that has a mysterious and unique history associated with it. Not many people know but this area was once the City Ship Canal, built for loading and transporting goods via lake freighters. During this time a lake freighter burned, and as seen in historical pictures of the area, the lake freighter was left unattended for over a decade. Eventually this area was entirely repurposed and it is no longer a shipping center. The areas that were once docking stations for lake freighters have been filled in with slag (a pollutant of the surrounding area). Slag is a byproduct from the manufacturing of steel at local plants like Bethlehem Steel. Digging into the subsurface here is not allowed due to the environmental risks. The question at hand is whether the burned lake freighter was ever removed from the site before the city of Buffalo filled in the canal with slag. The use of ground penetrating radar was used to answer this question. Using a 400 MHz antenna it is possible to collect data in the form of transects by sending and receiving electromagnetic waves. These transects essentially create an image of the underlying material (soil/sediment, slag and metal fragments). By studying the transects collected the objective is to find traces of the lake freighter that remains buried below Tifft Nature Preserve.

Impact of Cancer Treatment on Dietary Intake and Quality of Life

Ashley Casillo, Dietetics, MS
Faculty mentor: Professor Danielle King, Health, Nutrition, and Dietetics

Survivors of cancer may experience long-term side effects (LTSE) from both the cancer treatment and the illness itself. Approximately 86% of cancer survivors experience LTSEs, with fatigue most commonly reported. Other common LTSEs include tight surgical scars, lymphedema, pain, reduced physical functionality, and impacts on mental health, all of which may significantly impact quality of life (QOL) and overall mortality. Additionally, these LTSEs may further impact food consumption, increasing the risk for comorbidities. Thus, the purpose of this cross-sectional study was to examine the impact of cancer diagnosis and treatment on dietary intake and QOL in cancer survivorship. Participants were recruited online from cancer survivors/supporters Facebook groups and discussion boards, and via email convenience sampling. Participants completed an online questionnaire inquiring about cancer diagnosis and treatment, dietary intake and habits, appetite, mood, and QOL. Exploratory descriptive statistics will be used to understand trends in cancer diagnosis, treatment, QOL, and dietary intake of certain food groups. Inferential statistics will be used to make comparisons between cancer and treatment type, length of treatment, and LTSEs reported. A better understanding of the relationship between dietary intake and QOL among cancer survivors may assist in identifying patterns for future experimental research and intervention.

Mapping Spatial and Temporal Variability in Photosynthetically Active Radiation in a Campus Greenhouse

Anna Cinquino, Biology
Faculty mentor: Professor Daniel Potts, Biology; Shannon Casterline, Biology

Along with temperature, moisture, and CO2, the availability of light may limit the maximum rate of plant photosynthesis. Managers of greenhouses and other controlled environments for plant growth often rely on a combination of natural and supplemental artificial lighting to provide the energy needed for photosynthesis. The objective of this research is to quantify spatial and temporal patterns of light availability within the campus greenhouse. To address my objective, I made repeated measurements of greenhouse photosynthetic active radiation (PAR) using a portable ceptometer during different times of day, under different sky conditions, and at night using artificial lighting. Predictably, sky conditions strongly influenced greenhouse ambient light availability. For example, midday average PAR on cloudy overcast was 54 umol photons/m2/s compared to 209 umol photons/m2/s under cloudless conditions. More surprising was the finding that time of day influenced a strong East-West gradient of light availability but had no effect on North-South gradients of light availability. Measurements made at night under artificial illumination reveal that the pattern of light is patchier than natural light during the day. However, night measurements under artificial light reveal a spatially averaged PAR similar to values

of midday PAR observed under cloudless conditions. These results should help to inform more efficient greenhouse management and maximize plant production.

The Makeshift Reality for California Wildfire Victims

Rachelle Clark, International Relations
Co-author: Nicole Bobcik, Josh Spaulding, Corey Fragale, Alec Henry, Natalie Zuefle, Nick Gutierrez
Faculty mentor: Professor Stephen Vermette, Geosciences

In early 2025, tragedy struck the L.A. Metro and San Diego Counties as 14 wildfires created a devastating and multifaceted short-term crisis, demanding immediate and coordinated response across all regions. This poster examines the critical short-term impacts and responses, with a narrow focus on the abrupt displacement and economic disruption experienced by residents, the community support, alongside the operational challenges that emergency responders and government agencies experienced, and the profound immense sense of loss rooting from the destruction of personal touchstones. In addition, our analysis dives into the severe logistical challenges of mass evacuations, in specific the heightened risk of gridlock, caused by the urban density of Los Angeles. This poster is a variety of collaborative efforts from students in GEG 386 / HON 389: Weather & Society. A broader understanding of preparedness efforts is necessary to hopefully spark significant changes to the future of disaster management.

Evaluating Cloud-Based vs Private Network Data Storage

Zaire Coore, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

Security and storage of data is gaining prominence and organizations now have a choice to make, whether they would go for cloud-based storage or for private network servers. This project intends to show the differences between the two types of storage by looking at their security, speed of data retrieval, and general efficiency. Threat mitigation is an important and crucial step that must be taken when trying to stop threat actors this is why Kali Linux will be used to evaluate security flaws within both systems, this tool is to be used for penetration testing and security auditing. The importance of transferring data securely and safety is essential for transferring files over a network, the protocol being used to transfer data will be File Transfer Protocol (FTP) which is one of the oldest and widely most used protocol for transferring files. FTP establishes a connection between two systems using a network. The user can either provide credentials to the FTP. Once connected, two types of communication channels are established: the command channel and the data channel. The command channel is used to transfer commands and responses, while the data channel is used to transfer the actual data. Additionally, data transfer speed

differences between both systems will be measured and compared to using FTP. The results will inform whether private network storage is a more credible alternative for some cases than cloud-based solutions. The results of this study will help better understand data security and so organizations make a well-informed decision.

Giant Anomalous and Topological Hall Conductivity in a Ge substituted HoMn6Sn6 Kagome single crystal

Jemma DeFeo, Physics
Faculty mentor: Professor Dan MacIsaac, Physics

In this presentation we are reporting the structural, magnetic, resistivity and Anomalous Hall and topological conductivities of a Ge doped HoMn6Sn6 Kagome lattice. A Kagome lattice is a hexagonal lattice formed by the corner sharing triangles. They gained renewed interest in the field of topological properties due to the discovery of half metals (CoSe2S2), giant anomalous Hall conductivity (RbV3Sb5), superconductivity etc. From the band structure point of view, they are expected to show the presence of intrinsic flat bands, Van Hove singularities, Dirac cones, spin-orbit driven topology etc. HoMn6Sn4Ge2 has been grown using self-flux method and centrifuging at 650 ^{o}C. It crystallizes in the hexagonal structure with lattice parameters a=5.387 Å and c=8.666 Å. Energy Dispersive X-ray Analysis confirms the nominal composition of the elements in the crystal. The system exhibits two ferrimagnetic transitions at T_{C1}∼108 K and T_{C2}∼380 K respectively. The system undergoes a change in easy magnetization axis from c-direction to ab-plane above T_{C1}. Resistivity data shows a metallic nature with a RRR=19.5 indicating the good quality of the crystals. Isothermal Hall measurements show the presence of anomalous and topological contributions. A giant topological Hall conductivity of ∼2800 S/cm was observed at ∼125K, which is the highest value so far in R166 compounds. Notably this value is more than 7 times higher than the previously reported highest value in the LiMn6Sn6 compound belonging to R166. The topological hall resistivity exhibits two dips and one peak. Interestingly the observed topological Hall resistivity (∼2.5 μΩ·cm) exceeds the previously reported giant topological Hall in YMn6Sn6 compound belonging to R166. Ab-initio calculations by Fleur DFT code predicts the ferrimagnetic ground state with spin moments of -4.22, 2.19 μB and orbital moments of -4.93, 0.02 μB on Ho and Mn ions, which are in good agreement with the experimental magnetization and earlier neutron diffraction studies.

Analysis of Potential SUMO Targets and the SUMO Inhibitor TAK-981's Effect on Their Midbody Localization

Madeline Della Vella, Biology
Faculty mentor: Professor Xiang-Dong "David" Zhang, Biology

SUMOylation is an essential post-translational modification characterized by reversible conjugation of small ubiquitin-like modifier (SUMO) proteins to thousands of different target proteins and therefore regulates many critical cellular processes, including cell-cycle progression, chromosome segregation, DNA damage repair, and ubiquitin-dependent proteolysis. The two midbody-associated proteins, mitotic kinesin-like protein 1 (MKLP1) and protein regulator of cytokinesis 1 (PRC1), are key regulators of cytokinesis and have been identified as potential SUMO targets by previous proteomic studies of global SUMOylation in human cells. However, it is unclear whether they are bona fide SUMO-modified protein targets and whether SUMOylation affects their localization at the midbody during cytokinesis. We are currently investigating if MKLP1 and PRC1 are modified by SUMOs in vitro by utilizing a bacterial SUMOylation system, in which the human SUMO protein, SUMO-activating E1 enzyme (SAE1/2), and SUMO-conjugating E2 enzyme (Ubc9) are simultaneously introduced and expressed in E. coli cells. If MKLP1 and PRC1 are modified by SUMOs, their SUMOylation should be detected as a change in molecular weights using SDS-PAGE gel electrophoresis and Western blot analysis. Furthermore, we are analyzing whether the inhibition of SUMOylation using the SUMO-activating enzyme (SAE) inhibitor, TAK-981, changes the localization of MKLP1 and PRC1 in human HeLa cancer cells. Importantly, our preliminary results have elucidated that compared to the DMSO control treatment, TAK-981-mediated inhibition of global SUMOylation drastically increased the percentage of cells with chromatin bridges in human HeLa cancer cells.

Effects of Sound Exposure on the Growth Intracellular Macromolecular Synthesis of E. Coli K-12.

Sam Derby, Biology
Faculty mentor: Professor Olga Novikova, Biology

This study investigates the effects of sound wave exposure on the growth, morphology, and metabolic activity of Escherichia coli (E. coli). Sound waves, often overlooked as a physical stimulus, have shown potential in influencing biological systems through mechanical and vibrational energy. The research aims to explore whether specific frequencies and amplitudes of sound waves impact E. coli growth rates, biofilm formation, and gene expression related to stress responses. Initial experiments involve culturing E. coli under controlled conditions while subjecting samples to sound waves of varying frequencies (e.g., 100 Hz to 20 kHz) and intensities. Measurements include growth kinetics (optical density monitoring), metabolic activity (respirometry and ATP quantification), and structural changes (scanning electron microscopy). The study also aims to incorporates transcriptomic analysis to identify changes in gene expression profiles associated with stress, metabolism, and motility. Preliminary results could provide insights into non-invasive methods to influence microbial behavior and may have applications in microbial biotechnology, infection control, and environmental microbiology.

From Disinterest to Disengagement: The Apathy Towards Art Education from Childhood to Adulthood.

Megan Doyle, Art Education, MSED
Faculty mentor: Professor Alexandra Allen, Art & Design

This study examines the factors contributing to disengagement in the arts and explores strategies for rekindling artistic interest later in life. Art plays a crucial role in human culture and expression, allowing people to communicate emotions, ideas and stories that go beyond words and cultural differences. In education, the arts help students develop creativity, critical thinking, and emotional intelligence. However, many children lose interest in art as they grow older, affecting their personal growth and leading to a diminished appreciation of art in adulthood.
By analyzing the history of art education, societal values, and the personal experiences of adults who have rekindled or sustained a creative practice, this research aims to understand how disengagement shapes perceptions of the arts over time. Through qualitative methods, including interviews and surveys, this study seeks to provide educators with insights into reversing the decline of artistic engagement and fostering a lifelong connection to the arts.

Avian Foraging Behavior Does Not Differ Depending on the Type of Observation

Jennifer Eweka, Chemistry
Faculty mentor: Professor Gavin Leighton, Biology

My study aimed to investigate whether the presence of a human observer influences avian interactions at a foraging resource in comparison to observations conducted using a trail camera. The hypothesis was that the presence of a human observer (sufficiently far away) would not significantly alter the behavior and interactions of the birds at the feeders. Two types of trials were employed to test my hypothesis. The first involved a human present to observe the avian interactions and the other utilizing a trail camera to record avian behavior without an observer present. I collected data on Buffalo State's campus and other locations and analyzed the data using several linear mixed models. These models tested various dependent variables related to avian behavior, including the number of individuals visiting the feeder, the diversity of species present, and the timing of the earliest arrival at the feeder. As predicted, there were no major significant differences in avian behavior between in-person and video trails across the variables I collected. Thus, trail cameras represent a potential method for recording animal behavior.

Food Pantry Management Barriers: A Mixed Methods Study of Perceptions and Practices

Stephen Faro, Dietetics, MS
Faculty mentor: Professor Danielle King, Health, Nutrition, and Dietetics

Access to healthy and nutritious foods is paramount to the health and well-being of communities and individuals alike. The inflated poverty level of Buffalo, NY indicates a need for community-based interventions, such as food pantries, to alleviate the economic burden associated with food insecurity. Thus, the purpose of this cross-sectional, mixed methods study was to explore food pantry operators' perceptions of barriers that influence food acquisition, storage, desirability, and distribution to patrons managing chronic disease. Participants were food pantry operators (i.e., managers, employees, volunteers) in Buffalo, NY, and were recruited via purposive sampling. Participants completed questionnaires assessing pantry characteristics (i.e., number of employees; pantry resources), and nutrition knowledge (an 11-item instrument adapted from the "NLit" nutrition literacy questionnaire). Semi-structured qualitative interviews were further conducted to obtain richer detail on operators' experiences managing food pantries. Descriptive and inferential statistics will be used to quantify trends in pantry characteristics and nutrition literacy. Qualitative interviews will be recorded and transcribed verbatim, and content analysis will be employed. An inductive and deductive analysis approach will be used to determine reoccurring themes.
Exploring food pantry managers' perceptions and lived experiences of pantry operation may inform interventions to better address their needs in supporting our communities.

Understanding the Stateless Rohingya Refugee Community in Buffalo: Resettlement Experiences and Educational Aspirations

Imran Fazal, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

This research explores the lives of stateless Rohingya refugees resettled in Buffalo, focusing on their resettlement experiences and the educational aspirations of the Rohingya youth. Given the lack of scholarly literature on the Rohingya in the U.S., this study aims to fill a critical gap by providing insights into the unique challenges faced by this community, particularly after the end of the U.S. resettlement support program, which only lasts for the first three months. The study employs a mixed-method approach, including interviews with Rohingya adults and surveys of Rohingya students and resettlement agencies. Early findings suggest significant barriers due to illiteracy, lack of a written language, ongoing trauma, and lack of continuous support, which exacerbate difficulties in adapting to life in the U.S. They struggled with life-and-death situations most of their lives and never got the opportunity to understand the value of education. The research highlights the need for improved support systems, especially tailored to the unique linguistic and cultural needs of the Rohingya. The study suggests that a Rohingya-led organization could greatly benefit the community in the long run as it will allow the community members to receive the

services in a language that they understand, and it can also play a major role in helping the Rohingya students pursue their further education by exposing them to careers that they never thought existed. The implications of this study could inform more effective resettlement strategies and advocate for better educational pathways for Rohingya youth. The project also opens avenues on refugee studies, education in underserved communities, and trauma in displaced populations and contributes to ongoing discussions about creating sustainable support networks within refugee communities. More research is needed to understand these experiences longitudinally and qualitatively.

How Adult Learners Adjust to Adversity, a New Environment, Age Integration into Higher Education, and Adapting to Technology.

Michael Ferraro, Higher Education and Student Affairs, MS
Faculty mentor: Professor Kim Kline, Higher Education Administration

Adult learners are a diverse group – typically age 25 and older – with a wide range of educational and cultural backgrounds, adult responsibilities and job experiences. They typically do not follow the traditional pattern of enrolling in postsecondary education immediately after high school. They often return to school to stay competitive in the workplace or prepare for a career change. And they usually study on a part-time basis, taking one or two courses a term while maintaining work and family responsibilities. This study seeks to explore How adult learners adjust to adversity, a new environment, age integration into higher education, and adapting to technology.

Pleistocene and Holocene Climatic Influence on Woodrats of the Sierra Juarez

Ralph Garrett, Environmental Geography
Faculty mentor: Professor Camille Holmgren, Geosciences

Prior studies have demonstrated a strong relationship between body size of bushy-tailed woodrats (Neotoma cinerea) and temperature in the Great Basin and Mojave Desert as populations adapt to changing climates from the last ice age until present. This relationship, calculated using fecal pellet width, is consistent with Bergmann's rule of smaller body size in warmer environments and larger body sizes in colder environments. It is unknown, however, if a similar response is present in desert woodrat (Neotoma lepida) populations in the Sonoran Desert in northern Baja California. To test this, fecal pellets from twenty radiocarbon-dated middens were measured to estimate body size of N. lepida over the past 55,000 years from Guadalupe Canyon in the Sierra Juarez of Baja California. Following the Pleistocene full glacial period, late glacial/early Holocene body sizes decreased as temperatures warmed. However, measurements from the more recent Holocene period produced body sizes on par with or exceeding sizes of Pleistocene woodrats, not following

Bergmann's rule. This may be due to pellet degradation of older middens or dietary effects on body size as vegetation changed. Alternatively, woodrat populations in Guadalupe Canyon may have responded to past climate changes by migration and species/subspecies replacement at the site, rather than physiological adaptation of the populations living in the area. Future research could use DNA analysis to identify the species producing the middens through time at the site to see if there was in fact a change.

Personality Disorder-Like Symptoms in Parents and Relationship Characteristics in Offspring

Elsa Graf, Psychology
Faculty mentor: Professor Jill Norvilitis,Psychology

The relationship between parents and their offspring can impact the attachment style of the offspring later in life. This study examined the relationship between personality disorder-like symptoms in parents, as reported by participants, and relationship independence, self-esteem. and attachment among 275 participants. Independence, self-esteem, and attachment were all found to be related to rates of personality disorder like symptoms in parents.

Digital Etch-a-Sketch: A Web-Based Drawing Experience

Jonathan Grano, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

This project explores the development of a browser-based digital Etch-a-Sketch, transforming the classic physical drawing toy into an interactive web application. Instead of using knobs to draw lines on a glass screen, users will drag their mouse to draw on a customizable grid, making it both a creative tool and an entertaining digital toy. The motivation for this project stems from a desire to apply and enhance my current knowledge of web development, specifically JavaScript, HTML, and CSS. By creating this project, the aim is to strengthen my understanding of front-end programming concepts while creating an engaging and interactive user experience. The application will be built using JavaScript for functionality, HTML with Flexbox for structuring the grid, and CSS for styling. Users will have the ability to select grid sizes—such as 16x16 or 64x64—and interact with the interface by hovering over squares to change their color, mimicking the effect of an Etch-a-Sketch. Additional features include buttons for erasing the canvas and adjusting the grid size dynamically. The project will be developed in Visual Studio Code, using JavaScript's event-driven programming to enable real-time user input for drawing. By the end of this project, users will have an intuitive and responsive web-based drawing tool. The final product will demonstrate the possibilities of interactive web design and serve as a foundation for further exploration into JavaScript-driven creative applications.

Hunger on Campus: Investigating SNAP Enrollment Barriers Among College Students at SUNY Buffalo State University

Dana Hart, Dietetics, MS
Faculty mentor: Professors Jonathan Lindner, Health Nutrition and Dietetics; Tina Colaizzo-Anas, Health, Nutrition and Dietetics

Food insecurity affects approximately 30% of college students which can impact their academic performance, mental health, and overall well-being. Despite the availability of the Supplemental Nutrition Assistance Program (SNAP), only four out of ten eligible students are enrolled. The purpose of this study was to investigate the barriers contributing to discrepancies between SNAP eligibility and enrollment among students at SUNY Buffalo State University. This was an observational study conducted during the Spring semester of 2025 at SUNY Buffalo State University in Buffalo, New York. Participants included current undergraduate and graduate students at Buffalo State who were enrolled in at least six credits at the time of the study. Participants took a survey intended to assess knowledge of SNAP, eligibility, and past application attempts, as well as personal opinions to determine preconceptions of enrolling in SNAP. Findings from this research indicated that only 23% of participants had applied for SNAP and only 7% were currently enrolled in the program. The study showed that students were significantly more likely to apply for SNAP if they felt confident in completing the application on their own (p< 0.001). The most frequently reported potential barriers to enrollment included lack of knowledge about SNAP, perceived eligibility for SNAP, confidence in finding information about SNAP, and confidence in completing the SNAP application. Results from this study suggest that Buffalo State students could benefit from support in obtaining information about SNAP and assistance with the enrollment process.

Disrupting Polymeric SUMO-2/3 Chains: A Novel Approach Using Synthetic Peptides and Peptoids

James Hayes, Psychology
Faculty mentor: Professors Sujit Suwal, Chemistry; Xiang-Dong Zhang, Biology

Polymeric SUMO-2/3 chain modification plays a critical role in control of chromosome segregation, DNA damage repair, stress response, and ubiquitin-dependent proteolysis. Poly-SUMO-2/3 chain signals are recognized by various proteins containing multiple SUMO-interacting motifs (SIMs), such as the SUMO-targeted ubiquitin E3 ligase RNF4, which is considered as a major regulator of poly-SUMO-2/3 chain signals in mammalian cells. However, no approach is currently available to specifically inhibit or disrupt the poly-SUMO-2/3 chain signals. In this study, we have focused on developing a novel method to disrupt poly-SUMO-2/3 chain signals by introducing the chemically synthesized peptides or peptoids, which simulate SUMO-

interacting motifs, into cultured human cancer cells. We have successfully synthesized the biotin-tagged SIM peptide of the SUMO E3 ligase PIAS1α by Fmoc-chemistry using a solid phase synthesis approach. We further created the PIAS1α-SIM surrogate peptoid that can disrupt poly-SUMO-2/3 chain signals and multiple SIMs-containing proteins such as RNF4. We are currently analyzing the intracellular delivery and biological effects of the biotin-tagged PIAS1α-SIM peptide/peptoid by immunofluorescence microscopy using the fluorescently labeled NeutrAvidin protein with highly specific binding to the biotin tag. This research project will enable us to test our hypothesis that inhibiting the recognition of poly-SUMO-2/3 chain signals by the chemically synthesized SIM peptide/peptoid represents a novel approach to elucidate mechanisms by which poly-SUMO-2/3 chain signals regulate many critical cellular processes in human cells.

Mental Health and Advocacy: Bridging Clinical Care and Community Outreach

Kayla Innocent, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

My applied learning project focuses on my two distinct field placements that helped my understanding of Mental Health Care and Community Service. At Envision Wellness, my first placement, I worked with adults experiencing schizophrenia and co-occurring challenges such as substance use disorders, diabetes, and visual impairment. Working in a group therapy setting, I facilitate discussions around coping mechanisms, treatment adherence, and self-management of physical health. The second placement at Mobile Counseling of New York (MCNY) is more community-based advocacy and volunteerism. My role involved engaging with underserved populations, offering outreach services, and promoting resource access. I addressed issues such as healthcare access, education, and student loan forgiveness, focusing on reducing systemic barriers to well-being. These two placements provided me with a well-rounded perspective on mental health. Individual and community-level interventions are critical in improving outcomes for vulnerable populations. Recent studies show that individuals receiving integrated care are 30% more likely to experience improvements in mental and physical health. (Druss & Walker, 2011). While facilitating group therapy for adults with schizophrenia, I observed the impact of discussing not only mental health but also co-occurring issues like substance use and diabetes. Clients felt more comfortable in other sessions after hearing their peers' experiences. In my future work, I will use these experiences to ensure individuals receive comprehensive care that addresses personal and systemic challenges. Participants in this poster presentation will gain insight into how integrated clinical and community-based interventions improve outcomes for individuals facing mental health challenges.

Heavensward: A Study on Dark Energy

Mikayla James, Computer Information Systems
Faculty mentor: Professors Sarbani Banerjee, Computer Information Systems; Joaquin Carbonara, Mathematics

Modern cosmology, fueled by significant technological advancements, has enabled us to explore and uncover phenomena we humans only dreamed of doing long ago. One such phenomenon is dark energy, a theorized and invisible force believed to be driving the accelerated expansion of the universe, pushing galaxies farther apart. This project aims to investigate the nature of dark energy and its crucial role in the expansion of the universe. Using data from the Dark Energy Survey (DES), which maps and measures the distribution of galaxies using 4 unique methods, I will examine two primary methods for studying dark energy: gravitational lensing and Type Ia supernovae. These techniques offer complementary insights into the rate of cosmic expansion, providing a more holistic understanding of dark energy's influence. To measure this expansion, I will apply the Hubble constant ($v = H_0D$), a key formula that describes how far a cosmic entity, such as a galaxy, is moving away from Earth. By using this constant, I will calculate the rate of expansion, estimate the universe's growth over the years and possibly predict it's future trajectory. For data analysis and presentation, I will utilize Python and Visual Studio Code alongside plugins like Pyarrow, Pandas and Conda for calculations, data manipulation and management, wwwmodeling, and visualization. These tools will help me simplify and communicate my findings clearly and possibly provide new insights on the ever-growing neighborhood we reside within.

Struggling to Stay Afloat:The Reality of Single-parent Poverty in Buffalo

Sarah Jasper, Sociology
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What does poverty and single parents look like in Buffalo NY? Across the United States approximately 80 percent of single parent households are headed by mothers, in the U.S. the poverty rate for single-mother families was 29 percent, many single mothers must provide income for their families while also being the primary caretakers, a dynamic that affects their attachment to the labor market. In 2023, 4.4 percent were unemployed, 20.6 percent were not in the labor force, and with the expenses of childcare it is hard to get the proper assistance to help your child when the parent must go to work. I examined local data and reports to determine if this is also the case here in Buffalo. Poverty rates in Buffalo NY among single-parent households are higher than the national average, in Buffalo the poverty rates are 27.2 percent which is significantly higher than the national average of 12.6 percent, single-parent households are struggling heavily in Buffalo NY alone and 12,898 of these families live below the poverty line. On my poster you will see resources and action plans to take to spread awareness and feel educated on the matter of poverty and how it affects single-parent families.

Differential Strain Record among Different Metasedimentary Rocks Deformed During the Same Orogenic Event, Southeastern Pennsylvania.

Samantha Kaufman, Earth Sciences
Faculty mentor: Professor Gary Solar, Geosciences

The rocks exposed in southeastern Pennsylvania, located in the Valley Forge area, formed over 470 million years ago, and were deformed 470-300 million years ago during two episodes of continent-continent collision that formed the Pangaea supercontinent. The first mountain-building deformation episode created recrystallization. The second episode created the Cream Valley - Huntington Valley (CVHV) shear zone system which extends east of the field area and southwest into Virginia. This dextral strike slip shear zone system overprinted the recrystallization with a mineral alignment. This region has been tectonically inactive for a long time and the large mountains created by the collision have since eroded, exposing the underlying rocks that were about 15km deep at the time of collision. These rocks have different resistance to deformation (strength) and would have deformed differently at the same conditions. Quartzite, phyllite, and marble samples were collected from the field to be analyzed for mineral patterns that formed during deformation. Evidence of the deformation episodes are recorded at grain scale and can be analyzed and measured using polarized transmitted-light microscopy (petrography) in thin sections prepared from these rocks. Mineral composition shows greenschist facies from regional metamorphism. Microstructures were measured based on recorded deformation as difference in length between the longest and shortest axis of crystals as well as porphyroclasts and the matrix minerals surrounding them. Consistently, the crystals aspect ratios and strain shadow tails surrounding porphyroclasts are consistent with shearing stresses. The tectonic history within southeastern Pennsylvania was preserved over two deformation episodes as the minerals that recrystallized became minerally aligned within the CVHV shear zone system structural grain.

Parking Palooza: Avoiding Campus Car-tastropies

Shaikh Ismid Jobayer Kibria, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

Buffalo State University, with over 5,000 students and 1,500 faculty members, faces an ongoing challenge in managing its limited on-campus parking spaces. Finding an available spot, especially during peak hours, results in congestion, frustration, and inefficiencies in campus transportation. This research project aims to develop a mobile application that optimizes parking space usage by leveraging real-time user data and location-based services. The proposed parking app is developed using JavaScript (JSX) and React Native to ensure cross-platform compatibility for both Android and iOS devices. It integrates the Google Maps API to provide accurate, up-

to-date parking availability. The app utilizes user coordinates to categorize individuals as students or faculty and offers tailored parking suggestions based on designated areas for each group. To enhance user experience, the app includes a built-in customizable timer that allows users to set alerts before their parking time expires, helping them avoid violations issued by University Police. Additionally, the app maintains a database of parking regulations, ensuring users are informed about time limits and restrictions for different campus parking zones. By combining academic knowledge with real-world problem-solving, this project showcases how technology can enhance campus efficiency. The app's implementation can significantly improve parking management at Buffalo State University, reducing traffic congestion and enhancing the overall experience for students and faculty. Through this solution, users can efficiently locate parking, minimize unnecessary driving, and ensure better compliance with university parking policies.

The Devastating Precursors of the L.A. Fires

Amber Koeth, Early Childhood and Childhood Ed.
Co-author: Soe Kpaw, Liam Burgeson, Arie Dorsey, Madison Edwards, Anthony Morin,
Faculty mentor: Professor Stephen Vermette, Geosciences

The recent fires in the Pacific Palisades were the largest blaze and most destructive in Los Angeles history. Los Angeles has been exposed to these dangerous wildfires due to many natural conditions. For decades, Los Angeles and all of California have dealt with a megadrought. L.A.'s climate is semi-arid and with a combination of La Niña and the powerful Santa Ana winds, L.A.'s dry climate conditions were exacerbated. The objective of our group project was to raise awareness of the devastating precursors that led to the L.A. fires. Our research indicates that the sheer destructive nature of this wildfire was due to a combination of all these isolated factors.

Hope After Grief: A Mixed-Methods Needs Assesment for Adult Grief Support Services At Laurel's Love Center

Julia Lange, Public Administration, MPA
Faculty mentor: Professor Laurie Buonanno ,Economics, Finance, and Public Administration

With an increasing mortality rate, grief is more prevalent than ever. Despite being a universal human experience, in Western culture, grief is traditionally a silent journey. If-grief breaks from norms, people face stigmatization, dismissal, and isolation, leaving them prone to prolonged grief symptoms, relationship problems, substance abuse, chronic illness, and suicide. The most significant antidote to maladaptive grief symptoms is social support, yet appropriate bereavement support services remain

limited, particularly for those seeking non-clinical, nondenominational peer-based services. Organizations like Laurel's Love Center (LLC), a Buffalo, New York nonprofit agency, strive to bridge these gaps by providing unbiased peer-based grief support for underserved populations. This study examines the needs of grieving adults in the Western New York area using a convergent mixed-methods approach, interviewing LLC's Board of Directors and conducting a survey of the center's peer volunteers and participants. The study's results suggest areas of expansion at Laurel's Love Center to make its grief services more inclusive and holistic. Furthermore, the results contribute to a greater discourse of grief care, emphasizing the importance of peer-led services in grief recovery and overall resilience.

Beyond the Grocery Aisle: Cultural Food Access and Acculturation in Buffalo, NY

Franjeline Madera, Dietetics, MS
Faculty mentor: Professor Danielle King, Health, Nutrition, and Dietetics

Cultural food availability plays a crucial role in shaping dietary habits. The accessibility of culturally relevant foods can influence dietary acculturation, or the process of adapting traditional eating habits to those of a host country. Yet, there is limited research examining how food availability impacts dietary acculturation in the Hispanic community, specifically in urban areas. This cross-sectional study aimed to explore the availability of cultural foods within the Hispanic community in Buffalo, NY, and to assess how this availability affects food purchasing behaviors and dietary acculturation. Participants were recruited via convenience sampling from online Hispanic support groups and snowball sampling. Eligible participants completed an online questionnaire consisting of open- and closed-ended questions to assess food purchasing behaviors, barriers to accessing traditional foods, and dietary acculturation using the Brief Acculturation Scale for Hispanics (BASH). Descriptive statistics will be used to quantify participant characteristics. Inferential statistics such as ANOVA will be used to examine and compare relationships between food purchasing attitudes across acculturation levels. Thematic analysis will be used to identify reoccurring themes in the open-ended questions. Providing insight into strategies that can support dietary diversity and cultural preservation may assist in promoting inclusivity and maintenance of cultural heritage in multicultural cities.

Helping Hands: Why do States Give Aid to Conflict Actors?

Evan Maher, International Relations
Faculty mentor: Professor Mehwish Sarwari, Government, Planning, and Philosophy

Ukraine, a former member of the Soviet Union which had been gradually leaning towards western political ideology in recent years, applied to join NATO in 2008. Putin saw this encroachment of the North Atlantic Treaty Organization on his doorstep as a threat, and in late February of 2022, Russia launched an unprovoked

invasion of Ukraine. This situation caused worldwide alarm and sparked many nations to declare their foreign policies in support of either the aggressor or the defender, with some states sending physical aid in the form of money or equipment. While some sent physical aid or provided funds to keep Ukraine's government afloat during the conflict, many states showed their position at the United Nations General Assembly in March of that year, where they voted to condemn Russia's invasion. Studies have pointed out how regime type, security interests, economic factors, and geographic proximity have shaped foreign support decisions by states. This study investigates the role of regime type on foreign policy related to the provision of aid to and showing of support for Ukraine. This study considers the idea of democratic peace to predict that democracies will be more likely to provide aid to Ukraine than nondemocracies. Looking at aid allocation by all countries during the period of 2022-2023 and estimating statistical models to test the theoretical claims put forth in the study, this study finds support for the hypothesis proposed. Specifically, countries with a foreign policy interest tied to democratization are more likely to provide aid to Ukraine, with stronger support for certain types of aid.

Never Forget Your Keys: A Password Manager App

Fransley Michel, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

This project's goal is to promote secure password practices through the use of a password manager that facilitates the generation and storage of unique passwords. Despite the widespread use of advanced encryption algorithms, a user's password is often the weakest link to their account's security. This vulnerability can be mitigated by using a password that conforms to most requirements (8+ characters, 1+ numbers, special characters, capitalizations). However, such passwords are either difficult to remember, leading to insecure storage like on sticky notes, or are easy to remember but end up being vulnerable to dictionary attacks due to using common words. Password managers aim to solve both of these issues, by generating strong passwords and securely storing them in an encrypted file. Furthermore, the latest NIST standards encourage the use of passphrases, the use of multiple words together to create passwords that are longer and are significantly easier for people to remember. Through two algorithms included within the program, a password generator and a strength checker, the program aims to showcase ideal password creation while providing insightful feedback on potential passwords to enhance users' understanding of strong password practices. By presenting the advantages these tools provide in improving our password practices, we can bolster our digital security, protect our information from unauthorized use, and foster a safer environment online.

What are Some Ways to End Child Hunger in Buffalo, NY

Suzana Mmunga, Psychology

Faculty mentor: Professor Jessica Fitzpatrick, Social Work

My research question is: What are some ways to end child hunger in Buffalo, NY? This poster emphasizes how urgently structural change and shared accountability are needed to eradicate child hunger in Buffalo and throughout the United States. To guarantee that no kid goes hungry, communities can cooperate by enlisting the help of local resources, developing alliances with advocacy organizations, and advocating for sustainable solutions. All around the United States Millions of children are impacted by the national epidemic of child hunger, which keeps them from realizing their full potential. Without regular access to wholesome food, kids struggle in school, experience health issues, and continue to live in poverty. Even with initiatives to address food insecurity, many families continue to lack the means to feed their kids wholesome meals. With 20% of children in Western New York facing food insecurity and more than 40% of Buffalo's youth living in poverty, childhood hunger is a serious problem in the city. Serving over 53,400 children in the counties of Erie, Niagara, Cattaraugus, and Chautauqua, FeedMore WNY is a pivotal organization in tackling this issue. Therefore, this poster aims to create meaningful conversations and increase community awareness in Buffalo and across the United state.

Paleoecology and Taphonomy of the Middle Devonian Bay View and Smoke Creek Beds

Andrew Monteforte, Geology
Faculty mentor: Professors Nicholas Sullivan, Geosciences; Gary Solar, Geosciences

The fossil record provides a unique window to the evolution of environments and faunas across deep time. This ongoing research has focused primarily on the invertebrate paleontology of western NY, with a specific focus on Middle Devonian (Givetian) assemblages. Macrofossil collections have been gathered from comparatively undeformed strata exposed at Buffalo Creek, Penn Dixie Fossil Quarry, and 18 Mile Creek, comprising the Moscow Formation of the Hamilton Group. These sites are rich in fossils, comprising exceptional preservation and abundance, and reveal distinct ecological changes across space and time. In these sites we have found a multitude of fossils including a diverse suite of brachiopods, bivalves, trilobites, crinoids, bryozoans, and corals common to the area during the Middle Devonian. Focused research has been conducted on the brachiopod-rich Bay View and the trilobite-rich Smoke Creek beds. This reveals a Middle Devonian shift from filter feeders to deposit feeders occurred during the middle Devonian. These provide us with a window of time in which the local fauna were preserved ~350 million years ago. These snapshots have provided us with a new interpretation and many more questions about the preservation and history of these beds.

Lock It Down: Evaluating and Enhancing Password Strength

Sadat Nurudeen, Computer Information System
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

In an era of rising cybersecurity threats, weak passwords remain one of the most frequently exploited vulnerabilities. This project aims to address this issue by evaluating the effectiveness of password strength assessment tools and developing a reliable password strength tester. A key question explored in this study is: How reliable are password-strength testers? The project will be implemented using Python, with the primary objective of creating a tool that provides users with a quick and straightforward method to assess their password strength. The program will analyze various factors, including length, complexity, and the presence of special characters, to determine password robustness. Additionally, it will offer actionable recommendations for improving weak passwords. The project will focus on developing an intuitive desktop or web-based application with a user-friendly interface. It will integrate reliable algorithms to deliver precise password strength assessments, helping users make informed decisions about securing their accounts. By the end of this project, I aim to produce a comprehensive and accurate password strength evaluation tool that not only identifies vulnerabilities but also provides actionable strategies for stronger passwords. The final presentation will feature an analysis of real-world password security trends based on dataset evaluations, along with a live demonstration of the tool in action.

No Place to Call Home: The Rise of Family Homelessness

Isohie Ogiugo, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What role does generational poverty play in the cycle of family homelessness, and what strategies have proven most effective in breaking this cycle? Poverty and family homelessness have increased by 200% over the past five years, indicating a substantial rise in the number of families without stable housing. Throughout the country, family homelessness has risen by over 40%, particularly in major cities such as New York City and Chicago. Poverty and family homelessness are deeply interconnected social issues that affect millions of individuals across the United States. The approach used to collect data and obtain information will involve analyzing government policies, nonprofit interventions, and community-based solutions. I expect to find statistics and information about policies and interventions that decrease family homelessness. Additionally, I anticipate finding data on the impact of family homelessness on children. Preliminary research indicates that the root causes of family homelessness stem primarily from barriers to affordable housing. The impact of homelessness on children is particularly severe, leading to disruptions in education, adverse health outcomes, and long-term economic disadvantages. Understanding the complexities of poverty and homelessness is essential to developing sustainable solutions that break the cycle of generational poverty and ensure long term housing security.

Establishing an in Vitro SUMOylation System for Identifying and Validating SUMO-modified Protein Targets

Samuel Okoli, Biology
Co-author: Aesha Khanam
Faculty mentor: Professor Xiang-Dong "David" Zhang, Biology

SUMOylation regulates many critical cellular processes, including chromosome segregation, DNA damage repair, stress response, and protein degradation, by covalent conjugation of small ubiquitin-related modifier proteins (SUMOs) to thousands of different protein targets in eukaryotic cells. Among the three SUMO isoforms expressed in mammals, SUMO-2 and SUMO-3 are ~95% identical to each other and thus named SUMO-2/3, but their identity to SUMO-1 is only ~45%. SUMO conjugation to lysine (K) residues of protein targets is catalyzed by the single SUMO-activating E1 enzyme (SAE1 and SAE2 heterodimer), the sole SUMO-conjugating E2 enzyme (Ubc9), and multiple SUMO E3 ligases. In this project, we aim to purify the recombinant human SUMO E1 enzyme (SAE1/2), SUMO E2 enzyme (Ubc9), and SUMO E3 ligase (RanBP2 also called Nup358) from transformed E. coli cells so that we can establish an in vitro SUMOylation system for identifying and validating SUMO-modified protein targets. We have successfully purified both His-tagged human SUMO-2 and SAE1/2 using Ni-NTA affinity chromatography beads and also analyzed these two recombinant proteins by SDS-PAGE electrophoresis, Coomassie blue staining and Western blot using anti-His antibody. In addition, we are currently working on purification of the GST-tagged human SUMO E2 enzyme (Ubc9) and SUMO E3 ligase (RanBP2/Nup358) using Glutathione Sepharose 4B affinity chromatography beads. Lastly, we will test the activities of the purified human SUMO-2, SAE1/2, Ubc9, and RanBP2/Nup358 by performing in vitro SUMOylation assays.

Zebra Mussels as Bioindicators of Antibiotic Resistance in the Great Lakes

Danaya Oliver-Ragland, Biology
Faculty mentor: Professor Olga Novikova, Biology

The zebra mussel (Dreissena polymorpha) is an invasive freshwater bivalve that has spread rapidly across North America, particularly in the Great Lakes, after its introduction from Eurasia in the late 1980s. Known for forming dense colonies on hard surfaces, it disrupts ecosystems, outcompetes native species, and clogs water intake systems. Despite its negative impacts, zebra mussels serve as bioindicators, accumulating contaminants, including heavy metals, pollutants, and microbial communities, due to their high filtration capacity. Recently, zebra mussels have been studied as bioindicators of antibiotic resistance, a growing concern in freshwater ecosystems due to agricultural runoff, wastewater discharge, and pharmaceutical contamination. By filtering large volumes of water, they accumulate antibiotic-

resistant bacteria (ARB) and antibiotic resistance genes (ARGs), making them valuable for monitoring microbial resistance. Compared to other bioindicators, zebra mussels are widely distributed, easy to collect, and effectively reflect environmental microbial shifts. Our research project explores the use of zebra mussels in the Great Lakes as bioindicators of antibiotic resistance by sampling mussel populations, isolating bacterial communities from their tissues, and using culture-dependent methods with CHROMagar and other selective media to identify antibiotic-resistant bacteria. This approach enables the selective isolation and characterization of ARB, providing insights into the prevalence of resistant strains and their potential sources. By integrating environmental microbiology and culture-based analysis, our study aims to establish zebra mussels as a cost-effective tool for tracking antibiotic resistance, supporting efforts to monitor and mitigate microbial threats in freshwater ecosystems and contributing to improved environmental management and public health strategies.

L.A. Wildfires: What Comes Next?

Allison Panek, Earth Sciences; Environmental Geography
Co-author: Makenzie Below, Dylan Braunscheidel, William Frederick, Abijah Johnson, Jay McKenzie, West Benosa
Faculty mentor: Professor Stephen Vermette, Geosciences

The 2025 Los Angeles wildfires have led to widespread and lasting impacts on the environment, society, and policies. These fires affected ecosystems, disrupted communities, and prompted changes in governmental response and regulations. Environmental consequences include habitat destruction, air pollution, and long-term changes in land use. In response, governments have implemented new policies, emergency measures, and funding initiatives to improve wildfire management. Additionally, changes in building codes and urban planning aim to increase safety measures and reduce future risks. Understanding these long-term societal responses is important for developing strategies to protect both human and environmental health from future wildfires.

Board Games Are Not Boring! How Board Games Aid in Student Learning, Development, and Achievement.

Sarah Pratt, Early Childhood and Childhood Ed.
Faculty mentor: Professor Pixita del Prado Hill, EELEL

Board games serve not only as a source of entertainment but also as powerful educational tools that can enhance cognitive and social skills. This study explores the educational benefits of board games, highlighting their ability to facilitate learning through play. Through a literature review, qualitative research shows that engaging in board games can improve critical thinking, problem-solving, and memory retention.

These strategic games encourage players to develop goal-oriented strategies and foster creativity, which can be particularly beneficial in elementary and middle school environments. Board games can enrich learning experiences, making them a valuable resource for educators seeking to engage students in the classroom. This literature review emphasizes the unique benefits of face-to-face interaction and trust-building inherent in board games. To learn about this topic, I searched for key words "board games", "classrooms", "schools", and "benefits" and reviewed multiple books and articles. Ultimately, the integration of board games into classrooms can improve social emotional learning, student development, and academic achievement in meaningful and enjoyable ways.

Bengal Bot: Enhancing Students' Experience with Artificial Intelligence

Ei Reh, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

This research effort is focused on designing and developing a specialized AI-driven chatbot that is targeted to meet the academic demands of Buffalo State University students. Unlike general-purpose AI chatbots, this smartphone application is designed to deliver precise and rapid solutions to questions about academic guidance, test preparation, and research help. The chatbot uses the Gemini AI model, which is chosen for its simplicity of integration and cost-effectiveness, guaranteeing that students receive appropriate guidance without incurring additional fees. The project entails creating a user-friendly interface that is consistent with the university's logo, resulting in an intuitive and seamless user experience. The application is thoroughly tested and optimized to ensure dependability and responsiveness across a wide range of Android devices. While full deployment on the Google Play Store did not meet the project deadline, the application is ready for future release. This initiative marks a huge step forward in AI-powered educational technology, introducing a new idea for using AI to increase student access to academic materials, reduce stress, and improve overall academic achievement. The project's findings give useful insights into the development of mobile applications with integration of AI models, highlight the relevance of User Interface design in user engagement and showcase the significance of testing for optimal user experience.

Effects of Gender on Prosocial Behavior

Jessie Ricotta, Psychological Science
Co-author: Kathryn Wilson, Coralie Theogene, Jamie Ervolina, Michael Weyant, Ace Gardner, Alex Valery, Abigail Murphy, Elizabeth Schilling, Darionna Sampson Gilbert, Aiyana Reynolds
Faculty mentor: Professor Eyad Naseralla, Psychology

This study examines how gender influences prosocial behavior, or actions that help others. Research suggests that women are more likely to provide emotional and empathetic support, while men tend to help in ways that involve physical effort or chivalry. To explore this, we will conduct a laboratory observation in which participants take part in an interview about their academic experiences. During the interview, the interviewer will either struggle to lift a heavy box (physical help condition) or express fear about getting in trouble with a professor (emotional help condition). Participants' willingness to offer assistance will be observed and recorded. The findings will provide insight into how gender and the type of helping behavior influence individuals' likelihood of helping others.

The Challenges of Single Mothers Living In Poverty Raising Kids Alone

Princess Saydee, Criminal Justice
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

The question being researched is how poverty impacts being a single mother. In the United States, single mothers face a high rate of poverty and suffer the effects of food insecurity, homelessness, and poor mental health. Daycare is one of the biggest items single mothers cannot afford due to low-income requirements for eligibility. Furthermore, they often work long hours which can effectively interfere with daycare hours. Housing can be difficult to find due to hazardous areas and high rent. In Buffalo Niagara, over half of single mothers are economically insecure, and the region has a high proportion of them in poverty. This topic was chosen to bring awareness to single mother's everyday challenges. It is essential to know that single mothers need help and resources. Without these resources, providing for them and their children will be exceedingly difficult. One of the difficulties that single mothers encounter when they lack resources is a lack of money. Although there have always been single mothers, the need for new regulations is now more important than ever due to shifting family patterns and societal standards. Regulations that can be more supportive can be housing, food, and healthcare for children and mothers

The Effectiveness of Ginger Supplementation as an Ergogenic Aid: A Systematic Review

Steven Schmalfeld, Dietetics, MS
Faculty mentor: Professors Leah Panek-Shirley, Health, Nutrition and Dietetics; Danielle King, Health, Nutrition and Dietetics

One way for athletes to advance their game is ergogenic aids. While these substances may allow individuals to increase their energy, performance, and recovery, there is also a notable gap that exists between current practices in athletes and the latest scientific evidence. This review evaluated the effectiveness of ginger supplementation, in the form of capsules containing either Zingiber officinale or

Kaempferia parviflora, on improving endurance performance, muscle soreness, and inflammatory biomarkers in male endurance runners, untrained women, volunteers, women that exercise regularly, and women with a BMI >30 and Type 2 Diabetes. Randomized controlled trials from 2010 until 2025 were included in the review. Preliminary results of the review are equivocal with some studies published showing ginger had a positive effect on improving endurance performance, muscle soreness, and inflammatory biomarkers, while other studies found ginger supplementation had no significant impact on these indicators. This suggests that while there are some promising results, more research is needed to be done to conclusively rule on the effects of ginger as an ergogenic aid.

Democracy Shouldn't Terrorize, Right?

Tristan Skellie, Political Science
Faculty mentor: Professor Patrick McGovern, Government, Planning and Philosophy

State-sponsored terrorism is not a new phenomenon in international relations, but it has taken on new importance the end of the Cold War and the post 9/11 world. As democracy and democratic nations are experiencing backsliding, this phenomenon creates fewer public supported efforts for diplomacy. This in turn opens up opportunities for more covert terrorist actions aimed at undermining other nation states and political groups. These nations have evaded prosecution for their actions and continue these acts due to the lack of internal deterrents, especially when it is disguised under acceptable, polarized populist terms.

Enforcers in the Eye of the Media

Sarah Theriault, Communication
Faculty mentor: Professor Ann Liao, Communication

Enforcers are part of hockey history. Over the years the intensity of fights and the need for enforcers have decreased. An enforcer in ice hockey is an unofficial role. The enforcer's job is to deter and respond to dirty or violent play by the opposition, either by fighting or checking the offender. Historically, taking on the role of an enforcer was the only way a player was guaranteed to play in the National Hockey League (NHL), but it came at a cost. Drawing on framing theory, this study explores how the results of the fights involving enforcers were portrayed in the media, particularly through social media and news outlets. It examines whether the media downplayed or ignored these incidents until the enforcer was deceased and whether the media adequately covered the long-term consequences faced by these players in the NHL.

Evaluating Antimicrobial Potential of Novel Heterocyclic Dipeptide Isosteres

Kassidy Tucker, Biology
Co-author: Awa Konte
Faculty mentor: Professors Olga Novikova, Biology; Sujit Suwal, Chemistry

Antimicrobial resistance is a significant concern as bacteria rapidly adapt to withstand different concentrations of drugs, similar to how individuals build tolerance to certain substances over time. One of key measures in assessing bacterial resistance is the minimum inhibitory concentration (MIC), the lowest concentration of an antimicrobial agent required to prevent visible bacterial growth. A high MIC indicates increased resistance to the antimicrobial, signaling the need for stronger or alternative treatments. In this study, we determine the MIC of a group of compounds, heterocyclic dipeptide isosteres, for several common bacterial strains associated with infections, including Escherichia coli, Pseudomonas aeruginosa, Enterococcus faecalis, and Staphylococcus aureus. Heterocyclic moieties serve as key pharmacophores in almost all modern FDA-approved drugs, and we recently synthesized a library of functionally diverse heterocyclic dipeptide isosteres through a cross-coupling reaction. To test the antimicrobial properties of these compounds, we employ a serial microdilution technique in a 96-well plate, allowing us to assess how varying concentrations of the compounds inhibit bacterial growth over 18-hour period and to identify the lowest concentration that halts proliferation. Our preliminary results indicate that some of the compounds in our set have a potential for further diversification and development into high-strength antimicrobial agents.

Town of Amherst: Community Profile, 2009-2023

Mapendo Tumaini, Urban and Regional Planning
Co-author: Daniel Krieger, Allen Mendez, Cambridge Boyd
Faculty mentor: Professor Jason Knight, Government, Planning, and Philosophy

This project provides a detailed assessment of socio-economic and demographic trends in the Town of Amherst along with a detailed online mapping application, which the Town will use as a tool for attracting investment and supporting successful community planning. To accomplish this, 5-year ACS data (2009-2023) was used to examine Amherst's social and demographic characteristics, community assets, housing and economic status. The town provided additional data to assist in the strengthening of the project. The poster presentation will focus on highlighting interesting data findings and trends that identifies Amherst's strengths and weaknesses mainly through the use of maps, charts, and graphs.

Chiral Additives Improving Oxygen Evolution Reaction (OER) Metrics

Michael Vullo, Chemistry
Co-author: Aravind Vaddakkayil, Brian Bloom
Faculty mentor: Professor David Waldeck, Chemistry (University of Pittsburgh)

Due to the increase in awareness of the short-comings in traditional energy sources, alternative energy is being sought after with higher demand. Hydrogen has shown promise as a fuel and can be synthesized by a variety of methods. Water electrolysis is one method of producing clean, zero-carbon hydrogen gas. Powerful, yet underutilized as it is bottlenecked by the slow kinetics of the Oxygen Evolution Reaction (OER). To combat this, electrocatalysts are employed to aid in the efficiency and to lower the overpotential required. The Chirality Induced Spin Selectivity (CISS) Effect has also been shown to improve OER efficiency. Traditional approaches at implementing the CISS effect in electrochemistry involve chiral imprinting onto the electrocatalyst directly. In this work, an alternative approach is explored, in which molecular additives are used to create a chiral bias that promotes formation of spin polarized intermediates.

Food Apartheid: It Is a Systemic Issue

Brayden Wall, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

Is Buffalo East Side experiencing food apartheid? Food apartheid is a nationwide lived experience for people of color and low-income areas. It impacts rural and urban locations due to systemic inequalities that create barriers to accessing fresh and affordable foods via grocery stores, resulting in reliance on processed foods that perpetuate ongoing health problems. I will utilize the local Ellicott District Council map to mark the location of the only supermarket available to the community and contrast it with a local district map of Hamburg, NY, to showcase the stark differences in food access. Also, I will employ Photovoice to visually highlight alternative food sources, such as local bodegas or fast food. Buffalos East Side has been fighting food apartheid for decades, resulting from the devastating consequence of racist practices such as redlining, white flight, and "urban renewal," dating back to the end of the 19th century, which contributed to both the alarming lack of access to grocery stores and the onset of generational poverty. Failure to invest in the community and build supermarkets while refusing to address barriers such as limited public transportation and income equality causes the community to rely on fast-food outlets and bodega-style establishments as its primary source of food options. These options are overpriced, limit access to healthy fresh foods options, and perpetuate ongoing health problems. My intention with this poster is to raise awareness of the ongoing food apartheid crisis on the East Side and visually showcase how poverty limits access to food.

Is Education a Right or a Privilege? The Role Poverty Plays in Buffalo's Education

Trionna Williams, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

Does Poverty impact educational outcomes, and does this pattern affect the residents in Buffalo, NY? Across the United States, economically disadvantaged children suffer from absenteeism from school, which impacts their academic performance, social skills, and opportunities long term. Children in poverty experience food insecurities, housing instability, and lack of access to additional educational support. Research has found that by age three, children from low-income homes hear 30 million fewer words than financially stable families, which leads to language and literacy gaps. Early disadvantages impact school readiness, making it harder to catch up and increasing the likelihood of long-term academic struggle. With further exploration, the systemic inequalities in public school funding continue to perpetuate academic achievement gaps, leading to lower graduation rates among disadvantaged children. This poster focuses on how poverty affects educational attainment, access to early childhood education, academic achievement gaps, and higher education enrollment. In Buffalo, poverty impacts a large portion of students, affecting school funding, academic performance, and graduation rates. With the intervention from the federal and state, including Title I Funding, education disparities, and economic hardships continue to hinder the success of students. Poverty continues to create significant barriers to educational success, and addressing these disparities requires reforms in school funding and accessible early childhood education. Tackling Poverty in Buffalo, NY, will require creating a strategic investment plan in the Public School system, increasing access to early education learning programs, creating more jobs, and building a strong community to improve the future of Buffalo.

The Effects of Educational Opportunity Program on Students' Outcomes

Lily Wright, Public Administration, MPA
Faculty mentor: Professor Ikhee Cho, Economics, Finance, and Public Administration

This research project will conduct a comparative evaluation of the Higher Education Opportunity Program (HEOP) at D'Youville University and the Educational Opportunity Program (EOP) at SUNY Buffalo State University. Both programs aim to support academically and economically disadvantaged students but differ in structure, resources, and outcomes. The study examines critical components, including admission criteria, academic and social support services, and student success metrics such as retention and graduation rates. Using a quantitative approach, the paper analyzes quantitative data of counseling and tutoring hours received compared retention rates to highlight best practices and areas for improvement. The findings provide insights for enhancing access and equity in higher education programs serving underserved populations.

Do Government Efficiency Commissions Deliver on Their Promises? An Analysis of the Grace Commission and the National Partnership for Reinventing Government

Musah Abubakar, Public Administration, MPA
Faculty mentor: Professor Laurie Buonanno, Economics, Finance, and Public Administration

This study examines the effectiveness of two prominent U.S. government efficiency commissions: the Grace Commission (1984) and the National Partnership for Reinventing Government (NPR) (1993). Both commissions aimed to enhance government operations, reduce waste, and improve public service delivery, yet their actual impact remains debated. By analyzing the recommendations, implementation processes, and outcomes of these initiatives, this research evaluates whether these commissions fulfilled their promises of efficiency and cost savings. The research is particularly relevant in light of current government efficiency efforts, such as the Department of Government Efficiency (DOGE) and Project 2025, which propose significant reforms amid fiscal challenges and public demand for greater accountability. By contributing to the understanding of past government efficiency efforts, this research aims to guide more informed policy decisions and foster a culture of effective governance in the future. At the poster presentation, I will share insights from this analysis, illustrating the interplay between political, institutional, and economic factors in shaping government reform efforts. I will also offer recommendations for improving future efficiency initiatives based on the successes and challenges faced by the Grace Commission and the NPR.

Poster Session IV
5:00-5:55, SAMC atrium

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Predict Disaster

Bakim Alijaj, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

In the United States, natural disasters have seriously threatened numerous populations and ecosystems. Better response to disasters, community readiness, and disaster forecasting are all made possible by understanding trends and patterns. Trends in natural catastrophes can be found using predictive analysis, indicating which are rising annually, which are falling, and which are staying the same. With the goal to find trends that can improve preparedness and mitigation tactics, this project will look at past disaster data. FEMA's Disaster Declaration Summaries, which cover recent disaster reports and go back to 1953, are employed in this study. By using such techniques, areas of greatest risk can be properly identified, and people or governments can decide which actions to take to prevent or reduce the harm and losses brought on by disasters. The results of the research could be helpful to the public, responding agencies, and policymakers in creating data-driven disaster management strategies. This research utilizes statistical modeling with Pandas, heatmaps for visualization with Vega, trend charts with Matplotlib and Altair, and growth trend analysis with Facebook Prophet, all leveraging JSON for data structuring and processing. The programming will be done with Python and primarily conducted in Jupyter Notebooks within Anaconda Navigator, using a personal laptop as the primary hardware. The long-term objective of this research is to reduce the impact of natural emergencies on the environment and human lives by promoting a more proactive and informed approach to disaster management.

Tiny Teeth, Big Problems: Social Work, Cavities, and the Hidden Impact of Lead

Taijah Banyan, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

Imagine being a child trying to learn, with unseen obstacles like untreated cavities, unsafe lead levels, or unstable home environments that stand in the way of success. For many children in underprivileged communities, these barriers are everyday realities that impact their development, education, and future opportunities. Holy Cross Head Start is dedicated to breaking these cycles, ensuring that every child, regardless of background, has the foundation needed to thrive. As a social work health intern, I have completed 400 hours at the agency, contributing to its mission of providing early childhood education and family support services to low-income families. My responsibilities include case management, conducting family needs

assessments, and promoting community health endeavors. I work closely with the Cavity Free Kids program, educating families on oral hygiene, and support efforts to explore the impact of lead exposure on behavior, as research links it to developmental concerns, including autism spectrum characteristics. Throughout my internship, I have applied the nine social work competencies, including ethical and professional behavior, diversity and difference in practice, and engaging with individuals, families, and communities. By demonstrating critical thinking, advocacy, and intervention strategies, I have strengthened my ability to support vulnerable populations. This hands-on experience has deepened my understanding of social justice and the systemic barriers families face, reinforcing my commitment to community-based solutions. My time at Holy Cross Head Start has been an invaluable step in preparing for a career in social work, allowing me to apply classroom knowledge in real-world settings while developing skills essential to making a meaningful impact.

Federal Court Reform: Lowest Hanging Fruit

Angel Becerra, Communication Studies
Faculty mentor: Professor Adamu K. Shauku, Government, Planning, and Philosophy

The American federal court system is organized hierarchically into three tiers—districts courts, courts of appeals, and the Supreme Court. The system is also organized regionally—with the district courts operating within states, and courts of appeal presiding over district courts in twelve regional jurisdictions or circuits. The post-WWII federalization of American law has put increasing strain on federal court caseloads. More federal law means more disputes over federal law, and federal court capacity has not kept pace. One of the biggest indications of the brewing crisis has been the proliferation of unresolved conflicts over the appropriate application of federal law between the regional circuits. Scholars have noted that the U.S. Supreme Court has failed to resolve all conflicts generated by the lower federal courts and no longer has capacity to do so, leading to increasing fragmentation in the application of federal law by region. This project provides a comprehensive review of federal court reform proposals, catalogs the proposals by type, and identifies four proposals which demonstrate the greatest promise for enactment.

BABY Benefit: Breaking Barriers Before Birth

Lamiya Begum, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

How will the BABY Benefit impact children living in poverty in Buffalo? The Birth Allowance for Beginning Year (BABY) Benefit, a proposed policy in NY for 2025, would provide women with $100 monthly throughout pregnancy and a one-time

payment of $1,200 at birth if you receive public assistance. This approach looks to reduce financial stress and improve newborn health, providing a stronger foundation from birth. Currently the U.S. offers limited benefits during pregnancy, WIC (Women, Infants, and Children) being the most common, focused primarily on providing food assistance rather than cash support. In contrast, Finland and Canada have successfully implemented similar programs, reinforcing how early financial help reduces child poverty. This study will analyze local poverty statistics, compare international policies, and examine financial interventions during pregnancy to assess the BABY benefit's potential impact locally. Buffalo has one of the highest child poverty rates in the nation. Financial insecurity during pregnancy increases the risks of inadequate prenatal care, infant mortality, along with food and housing instability, continuing the cycle of poverty. Findings suggest that having direct cash assistance during pregnancy can ease financial hardship while improving infant and maternal health. This project highlights an unusual approach to poverty reduction by developing a plan before the child is even born. Join me to discuss how the BABY benefit challenges traditional poverty managing efforts, why early financial intervention matters, and how you can help advocate.

Eligibility and Enrollment in SNAP among Buffalo State University Students

Annie Benson, Dietetics, MS
Faculty mentor: Professors Jonathan Lindner, Health, Nutrition and Dietetics; Tina Colaizzo-Anas, Health, Nutrition and Dietetics

Food insecurity is prevalent among college students and is associated with decreased GPAs, completion rates, and poor attendance. Objective: This research investigates the relationship between eligibility and enrollment in the Supplemental Nutrition Program (SNAP) by examining the extent to which eligible students are enrolled. Methods: An IRB-approved cross-sectional observational study was performed via an online Qualtrics survey distributed to both the Undergraduate and Graduate Buffalo State University student bodies through email. Those included in the study were at least 18 years of age and enrolled at least part-time during the Spring 2025 semester. SNAP eligibility was determined by comparing survey responses to NYS SNAP eligibility requirements. Chi-squared and Spearman's rank correlation tests were conducted using SPSS software. Results: A relationship between SNAP eligibility and SNAP enrollment by Chi-squared analysis showed a trend ($p= 0.054$). The students who previously applied to SNAP varied by income by one-tailed Spearman's rank order ($p= 0.032$). Relationships between SNAP eligibility, residence type, and employment were evaluated. Conclusion: Results can be applied to inform efforts to combat food insecurity among college students.

Geospatial Analysis of Oil and Gas Fields and Their Proximity to Sensitive Ecosystems in Erie County

Skyler Braeges, Great Lakes Environmental Science, MA
Faculty mentor: Professor Tao Tang, Geosciences; Lisa Matthies-Wiza, Erie County Office of Geographic Information Services

This study uses geospatial analysis to identify potential locations for oil and gas reserves in Erie County, New York, while considering the environmental impacts of their proximity to sensitive ecosystems. Utilizing data from the NYS GIS Clearinghouse, oil and gas well locations are mapped, and hot spot analysis is performed to highlight areas with the highest potential for exploration. The research then integrates environmental data, including protected areas, wetlands, waterways, and wildlife habitats, to assess the risk of development to these sensitive sites. Using ArcGIS Pro, the analysis employs tools such as buffer zones and proximity analysis to determine the spatial relationship between potential oil and gas reserves and environmentally sensitive areas. The findings provide a visual representation of high-risk areas where oil and gas extraction could threaten local ecosystems, while also suggesting areas where exploration may be more suitable for development. This study aims to balance the demand for natural resources with the need for environmental preservation, providing valuable insights for policymakers, researchers, and stakeholders involved in land use and environmental conservation.

What I've Learned From Working With Families at Head Start

Katrina Brindley, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

The Niagara Falls City School District Head Start program is a school readiness program designed to promote social, emotional, and educational development in children ages 3 through 5. The program provides quality and research-based curriculum to the neediest children within the community. Head Start is an income-based program providing children living in poverty, homelessness, or foster care with the opportunity to have a quality early education. Head Start is proficient in demonstrating the Council on Social Work Education competencies by engaging in diversity and difference while working with diverse populations and being culturally sensitive. Head Start also implements strategies to engage with diverse families to build relationships to promote positive impacts in their child's education. Working as an intern within Head Start, the focus areas were establishing and maintaining a recruitment process with the Family Service Team and ensuring enrollment of eligible children for their assigned service area. What I learned throughout my internship was the importance of building relationships with parents to help empower them to be an active advocate in their child's education while partnering with them to engage in parent activities. Working with diverse populations, I learned that being knowledgeable about the client's culture created a positive and respectful rapport with the client. While providing referrals to community resources using their written language assured, they understood what services they could access and provided a better outcome for their family.

Fabric Analysis of Metapelites from Western Connecticut

Heather Buskist, Geology
Faculty mentor: Professor Gary Solar, Geosciences

This research focuses on the study of metamorphic fabrics: the altered arrangement of minerals in a rock resulting from deformation and chemical reactions. It involves interpreting past geological events recorded in minerals and their deformation and comparing the fabric strengths of various specimens through use of graphical representations of strain states (e.g., a Flinn diagram). The rocks examined consist of metasedimentary rocks from eight outcrops in Roxbury, Connecticut, surrounding a formation called the Log Jam Schist, containing large kyanite crystals (> 10cm long). This region has been significantly influenced by multiple orogenic events during the Paleozoic era, ancient mountain-building events from tectonic plates colliding over millions of years, that contributed to the formation of the Appalachian Mountains, including the Taconic, Acadian, and Alleghenian orogenies that produced the Pangaea supercontinent. The images utilized in this project were captured with a petrographic microscope, and data were measured using LAS X software. Measurements were taken along the long and short axes or inequant grains. For irregularly-shaped minerals, measurements were taken at 90 and 180 degrees to ensure consistency. The outcome of this study is a mineral fabric assessment for each specimen, in addition to interpretations of evidence related to past geological events.

Combining Digital and Traditional Media: Risograph and the Interactive Classroom

Paige Ciezki, Art Education
Co-author: Eryn Conlon
Faculty mentor: Professor Dave Mawer, Art & Design

As art educators, introducing students to local artists and arts resources can make arts learning relevant and meaningful. The animations we are presenting at this conference were created as the culminating project for the Fall 2024 section of AED 398: Art, Society, and New Media Technologies for Art Educators. Throughout this course, we learned how to use and integrate Adobe Illustrator, Photoshop, and After Effects into classroom learning. While we learned to use each program separately, we discovered how they can function together as part of a software ecosystem. This project involved using each program at different stages of the creative process—designing graphics in Illustrator, animating them in After Effects, and creating an animation in Photoshop. As part of this experience, our class visited a local artist and his print company, Libby Projects, where we printed individual frames using a risograph machine, a specialized printer that layers colors through a multi-pass process similar to screen printing. The collection of animations we present originated

as a grid of images printed using a combination of two ink colors with the risograph. Our visit to Libby Projects helped us gain familiarity with the risograph process and understand how to use both digital and traditional art forms to create artwork. We were also able to create drawings to be printed while in the studio, so we could see how risograph printing works. This project gave us valuable insights into incorporating arts software into the classroom and collaborating with local artists to create meaningful work.

Housing Crisis in Buffalo

Taya Conway, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

My research will explore if people in poverty can afford housing in Buffalo, NY. Since Covid the housing market has increased in the U.S. With not only the housing prices increasing the availability of rentals has decreased. The combination in the housing market is forcing many people to become homeless or live in unstable living conditions. I have examined reports from companies that sell homes and that own rentals that claim to easily see the change in the market. People also trying to find a home or rental have reported the same things. Local data reports affordable housing for low income has decreased. Across the whole U.S people are struggling with housing. Buffalo is one of the big cities where people in poverty can not find homes. The rising costs of rent and buying homes contribute to the high rates of poverty in Buffalo. Many people say the housing market goes up and down often. While it may eventually decrease, data shows this is a current and big problem for Buffalo and its citizens. People with low income are very limited with what affordable housing options they have if any. If these affordable housing options improved maybe poverty would decrease and people would not have to spend all their money on living in unlivable homes. I hope my poster will raise awareness to the unaffordable, and sometimes unlivable housing people in poverty deal with.

Housing Crisis: Why Is it a Thing

Gerrod Craig, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What does poverty and the housing crisis look like in Buffalo? Poverty and the housing crisis are deeply connected. Many residents are facing homelessness and the lack of affordable housing due to economic and systemic barriers. The bigger the city, the worse the crisis. The average person will have to work ten hours over to afford a decent apartment. The Buffalo News Editorial Board reported that “nearly 50% [of households] spend more than 35% of their incomes on rent. That number can go up to 70% in some neighborhoods.” When you look at buffalo you can look around and see abandoned houses and empty lots. There are also some

neighborhoods they neglect when it comes to progress. But, when it comes to the homeless population the lack of affordable and available homes can be a factor in the growth of the population. Looking into the lack of affordable homes can show you one problem with the housing crisis. I believe a good method will be for the city to take the abandoned homes and lots to make more affordable housing.The city did make a task force created by the Buffalo Common Council to do a deep dive into the housing crisis, where they are collecting data to see where to fix the problem. When it comes to the housing crisis do not forget it's not only economic but racial at the same time. The poster will touch on some of those topics.

Send Nudes: Explicit Image Sharing Among University Students

Canyon Damon, Applied Psychology
Faculty mentor: Professor Eyad Naseralla, Psychology

The study will use a survey to explore the prevalence of sending and receiving illicit images through digital means, such as text messages and social media among university students. Additionally, the study will look at the psychological factors linked to these behaviors. Specifically, the study will examine the relationships between sending/receiving explicit images and the Big Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism), as well as ambivalent sexism, which includes both hostile and benevolent sexism. Participants will complete a survey measuring their experiences with sending and receiving illicit images, along with their scores on the Big Five personality inventory and an ambivalent sexism scale. The goal of this study is to identify any connections between personality traits, gender attitudes, and the likelihood of engaging in sexting. It is expected that certain personality traits, like higher extraversion or lower conscientiousness, may be linked to a greater likelihood of sending or receiving illicit images. Additionally, people with higher levels of hostile or benevolent sexism may also be more likely to engage in sexting. By examining these factors, the study aims to better understand the psychological characteristics that influence sexting behaviors.

Screening Heterocyclic Compounds Against Triple-Negative-Breast-Cancer (TNBC)

Nicole Delli Colli, Forensic Chemistry
Faculty mentor: Professors Sujit Suwal, Chemistry; Sandra Borbor-Sawyer, Biology

Triple-negative breast cancer (TNBC) is a highly aggressive subtype of breast cancer that lacks expression of receptors such as estrogen, progesterone, and HER2. Treatment of TNBC is often challenging due to poor prognosis, high recurrence rates, and its resistance to many available therapies. Heterocyclic molecules with diverse scaffolds are known to interact with various biological targets and are emerging candidates that can offer effective treatments for TNBC with high potency and

specificity. These molecules are known to modulate the proteins involved in critical signaling pathways that regulate cell cycles, apoptosis, and angiogenesis. An aberration of such a cellular process triggers tumor formation and cancer. Heterocyclic-based molecules are known to demonstrate anti-TNBC activity through mechanisms such as DNA intercalation, kinase inhibition, and immune modulation. In this project, we studied the cytotoxicity of the structurally and functionally diverse heterocyclic molecules created through cross-coupling reactions using MTT/AlamarBlue assay. Through this approach, we have identified a few hit molecules that can be further diversified into a lead through a structural-activity relationship (SAR).

Strong Passwords In Cybersecurity

Abdikadir Farah, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

In today's digital world, cybersecurity is essential as technology advances and threats to sensitive data, systems, and networks increase. Cybersecurity involves protecting digital information from unauthorized access, attacks, and damage. This project focuses on three key aspects of cybersecurity: security measures, threats, and vulnerabilities. A Password Manager, developed as a website using HTML and CSS, will practically demonstrate how to enhance digital security. To safeguard data and systems, several security measures are used. Encryption scrambles data so only authorized users can access it. Firewalls block harmful traffic from entering a network. Multi-Factor Authentication (MFA) adds extra security steps, like a code sent to a phone, to prevent unauthorized access. Access control limits who can view or alter information. To minimize risks, organizations should update software, use strong passwords, and train employees on security best practices. For this project, a website-based Password Manager will be developed using HTML and CSS. The site will securely store user data, including name, password, security code, and security questions, ensuring sensitive information is well-protected. The website will include features for generating strong passwords and securely retrieving stored credentials. The focus will be on creating an interface that ensures password protection through careful design and security measures. This project will help improve digital security by providing a user-friendly platform for safely managing passwords, preventing unauthorized access, and enhancing overall cybersecurity.

Let's Get Digital: Exploring Technological Literacy in Italian Classrooms

Janinna Farragher, Technology Education, MSED
Faculty mentor: Professor Sherri Weber, EELEL

This study dives into how Italian schools aim to foster digital and technical literacy. In today's society, we are experiencing technology at an increasingly fast pace. As our

world evolves, our classrooms must too. Digital and technical literacy starts in the classroom, where students can explore an abundance of skills related to managing, assessing and understanding technologies, all while aiming to become an upstanding digital citizen. Focusing on primary schools in the southeastern Italian town of Torremaggiore, this research will explore how digital literacy is taught, assessed, and integrated alongside traditional curriculum. Using a mixed-methods approach, data will be collected through classroom observations and teacher interviews. This study will also highlight the impacts of explorative digital and technical learning and project-based assignments. My findings will allow me to see an entirely new perspective on how schools in Italy manage and promote technical learning while also seeing possible drawbacks that schools and teachers might be experiencing. These findings will show the impact of the advancement of digital and technical instruction and highlight the development of this type of learning on a national level.

Supporting New Refugees Integrate into Our Community at Jewish Family Services (JFS)

Imran Fazal, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

This poster presentation discusses my experience working with the refugee resettlement program at Jewish Family Services (JFS) of Western New York, a vital community organization since 1862, providing critical services such as Therapy & Counseling, Career Services, Refugee Services, and the Refugee & Immigrant Center for Healing (R.I.C.H.). The primary focus of my internship was refugee resettlement, assisting newly arrived refugees with housing, school enrollment, medical access, cultural orientation, and employment support. During my internship, I directly engaged with refugee families, helping children enroll in school and guiding parents through essential processes like understanding bus schedules and communicating with teachers. I observed the significant challenges refugees face, including financial instability and difficulty accessing basic services. JFS caseworkers work tirelessly to assist families in applying for SNAP, Medicaid, and cash assistance, but the process is complex, and recent federal funding cuts have further limited resources With JFS resettling over 300 refugees in less than two months, the lack of extended support has left many struggling. Advocacy, policy reform, and community involvement are crucial to sustaining these programs. We must push for policies that ensure refugees receive the resources necessary to rebuild their lives with dignity and stability. This experience reinforced key social work skills, including adaptability, resourcefulness, cultural humility, and active listening. Managing time-sensitive situations and prioritizing client needs has strengthened my professional judgment and ethical decision-making. These lessons have prepared me to approach social work with confidence, compassion, and a deep understanding of its responsibilities.

Co-Constructing an Art Curriculum to Improve Student Motivation and Engagement in the Art Making Process.

Amanda Feraldi, Art Education, MSED
Faculty mentor: Professor Alexandra Allen, Art & Design

This research aims to investigate the effectiveness of co-constructing an art curriculum with elementary students to combat disengagement and foster their intrinsic motivation. Recognizing the limitations of traditional, teacher-centered curriculum development, this study explores how active student involvement, through interviewing, discussions, and material explorations, impacts engagement, creative expression, and artistic creation in a 4th grade art class. By aligning with Self-Determination Theory, which emphasizes autonomy, competence, and relatedness, this research aims to develop a dynamic, student-centered learning environment. I plan to present a poster showcasing the findings of this study, including photographic evidence of student artwork created within the co-constructed curriculum. The poster will illustrate how increased student ownership, achieved through collaborative processes, influences their participation and investment in art education, demonstrating the potential of this approach to revitalize elementary art classrooms.

Cross-Cultural Classroom Dynamics: A Comparative Study of Student Behaviors in Italian and American Classrooms

Jennifer Flick, Early Childhood and Childhood Education
Faculty mentor: Professor Sherri Weber, EELEL

Student behaviors and management strategies are key discussion points for teacher candidates and practicing teachers, many of whom feel unprepared to address the diverse range of student behaviors. This study explores student behaviors in Italian elementary classrooms to determine how location and cultural contexts might affect students' behavior and teachers' management strategies. The primary question I will focus on is, "What are the similarities and differences in student behaviors and classroom management strategies in American and Italian schools?" While observing and teaching at a school in Torremaggiore, Italy, I will examine the similarities and differences in student interactions, participation, and engagement, as well as the strategies teachers use to manage behaviors, including reinforcement, expectations, and consequences. This information will be collected through observations in both American and Italian elementary classrooms and examination of my peers' blogs. The findings from this research will help inform educators about different approaches to behavior management and can help them create a classroom environment that is inclusive of students' varied experiences. This research may also be implemented into my future classrooms and shared with my future peers and colleagues.

Healing and Hope Resides Through Cazenovia Recovery

Janesa Gamblin, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

Substance use disorders affect millions of individuals, families and communities worldwide, requiring the urgent need for effective rehabilitation programs. Sundram Manor is one of 10 facilities within the Cazenovia Recovery Systems network, that provides a supportive environment for men and women with children, guiding them through their journey to recovery and structured environment. My poster focuses on understanding the role of Cazenovia recovery in addressing the many challenges of addiction recovery and reintegration into society. During my internship at Sundram Manor, I observe daily operations within the facility, such as group sessions and individual counseling sessions. These experiences provide valuable insights into the rehabilitation process, applying evidence-based techniques such as motivational interviewing, client-centered approach designed to strengthen motivation for change, and person-centered therapy, which highlights empathy and collaboration to adapt personal growth. I have also observed relapse prevention strategies and life skills training, with communities. Peer support networks and individualized care plans play an important role in promoting sustainable recovery in addiction. Comprehensive support systems, such as counseling and community integration initiatives, play important roles in addressing the physical, emotional, and social of recovery. Challenges faced by residents and staff underscore the ongoing need for the development of resources and advocacy in addiction recovery programs. Through this presentation, I will highlight how Cazenovia Recovery's policies and strategies support individuals on their recovery journey.

WFTC: A Break For New York Families

Jasmine Gilmore, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

How does the New York Working Families Tax Credit (WFTC) impact poverty In Buffalo? Nationally, tax credits have been shown to reduce poverty by providing direct financial support to families in need once a year. As it stands, the Earned Income Tax Credit (EITC) offers $500 per dependent to a person or family that has a social security number and earned income under a certain threshold. This leaves all immigrant families with Individual Taxpayer Identification Numbers (ITIN) and those without an earned income unable to file for aid. The EITC system creates a possible 4.56 million New York immigrants unable to qualify for the tax credit. This plays a significant role in family poverty as roughly 18.5% of the immigrants in New York are experiencing poverty. The WFTC intends to expand aid eligibility to immigrants with ITINs, remove minimum income requirements to qualify, increase the maximum tax credit to $1600 per child, provide a $500 relief credit per child regardless of income, and disperse aid on a quarterly basis. If passed, this tax relief is projected to reduce children living in poverty by 13.4% and reduce deep poverty by 19.6%. This offers

great relief for not only immigrants but all families in Buffalo. Within Western New York, statistics have shown 40-46% of children have lived in poverty increasing concerns locally. The intention of this project is not only to raise support and awareness for the WFTC but to encourage others to get involved in local government and advocate for change.

Views from the Lake: Group Home Internship

Garisha Greer, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

Here at The Arc Erie County, we are dedicated to providing safe, nurturing, comfortable environments for children and young adults who need support in all different aspects of life. Our group home, located in Hamburg, New York, right off the lake, “The Lakeview Ira,” is a specialized group home dedicated to helping with the growth of young men who are deaf and nonverbal—helping them learn essential life skills, practice independence, and remain confident regardless of their barriers. The core function and purpose of the Arc Erie County group homes is to provide essential support to individuals with intellectual and developmental disabilities with the person-centered approaches to promote self-determination. As an intern assistant house manager, I assist with filing data, documenting residents’ progress monthly, maintaining residents’ finances, maintaining clear and understandable communication with family members, and participating in and training new staff on working the floor. In another role as an intern, I ensure the house is stocked with inventory orders and keep track of supplies. As the assistant house manager, I am to ensure the staff who work under me are providing residents with a safe work environment, focusing on the well-being of the residents and always being present, providing them with emotional support at all times. Staff is trained and provided with resources that help them assist with living skills that are utilized daily, medication management, social engagements, and access to get out in the community and thrive.

Visual Journaling and Self-Efficacy in High School Art

Sydney Hafner, Art Education, MSED
Faculty mentor: Professor Alexandra Allen, Art & Design

This study explores the impact of Visual Journaling on high school students’ self-efficacy and motivation in art making through the lens of Bandura’s Theory of Self-Efficacy. Many students in required art courses experience low confidence and loss of motivation, perceiving artistic skill as innate rather than a skill that can be developed. Through regular use of a visual journal students are presented with opportunities to explore and reflect on various art media, techniques and personal expression through activities linked to key sources of self-efficacy. Data is collected

through student surveys and reflections, field notes of observations collected during classes, and photographs of visual journal pages. By emphasizing process over product in the low-stakes environment of a visual journal, risk taking and a growth mindset may be fostered, in turn enhancing self-efficacy and intrinsic motivation in the arts. The findings aim to inform art educators on practices that enhance student engagement and allow students who do not otherwise perceive themselves as artists to connect to and find value in a personal artistic practice.

Gentrification Watch: Using Python to Track Changing Neighborhoods in Buffalo, NY

Makaila Hall, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

Gentrification is an ongoing and complex issue in historically Black neighborhoods, particularly in Buffalo, NY. My entire life I have heard about and witnessed rising rental prices, changing business landscapes, and shifting demographics. These changes often lead to the displacement of long-term residents, altering the cultural and economic fabric of these neighborhoods. As an African American woman from Buffalo who is deeply invested in the well-being of my community, this project holds personal significance for me. My goal is to track and analyze these changes using Python-based data collection and analysis techniques, with the ultimate aim of presenting my findings to the City of Buffalo to advocate for equitable development. By employing tools such as BeautifulSoup for web scraping, I will gather data from real estate websites to monitor rental price trends over time. Additionally, Yelp reviews, Google Reviews, and business listings will be scraped to track new business openings and closures, reflecting the evolving commercial landscape. Census data will be integrated to observe demographic shifts, including changes in income levels, racial composition, and population density. Pandas will be utilized for data manipulation and analysis, providing a structured approach to managing large datasets. Matplotlib will be used for data visualization, enabling clear and impactful representation of trends and patterns. Development will be carried out in VS Code, leveraging its extensions and debugging tools for efficient coding. The feasibility of this approach is reinforced by the accessibility of public real estate data and the robustness of Python-based tools in handling and analyzing substantial amounts of information.

MOSFET: P-typed...Silicon

Diamond Hamilton, Electrical Engineering Technology
Faculty mentor: Professor Stephanie Goldberg, Engineering Technology

The current research study will dive deeper into understanding the inner workings of logic circuits as well as their packaging. The project is expected to show the mechanical and electrical makeup of the MOSFET transistor. Specifically, I will

discover and discuss information regarding its materials' conductivity, oxidation and its other aspects that prove its effectiveness. A MOSFET transistor is the most common type of transistor and is used to control the flow of electricity within the system. I will be researching by using the traditional method of reading articles and textbooks to gather knowledge as well as observing the transistor itself. I will be able to demonstrate these findings by recording them as I observe the usage of the transistor within a circuit in two different ways: one including the AND gate and one utilizing the OR-gate; which both are made with the MOSFET transistors from the CMOS family. The results and the investigative observations discovered during this project will explain how the components and materials used to produce the MOSFET transistors affect its functionality and effectiveness. This project will go in depth about the reasons why this type of transistor is so commonly used and more specifically, how these transistors are manufactured. The significance of this project goes beyond this generation's prototypes and inventions. Alas, by using the concepts and technical information found in this study, future generations will be able to enhance the smart grid, improving the quality and speed of electrical tools and resources.

The Link Between Food Insecurity and Stress in College Students

Stephanie Hassell, Dietetics, MS
Faculty mentor: Professor Jonathan Lindner, Health, Nutrition and Dietetics; Tina Colaizzo-Anas, Health, Nutrition and Dietetics

Mental illness affects 1 in 5 adults, with the highest prevalence observed among individuals aged 18-25, particularly in college students. Concurrently, food insecurity is rising among this population. This study aimed to determine how food insecurity influences perceived emotional stress levels among college students. An electronic survey was distributed on campus, targeting students through Milligan's Food Pantry and the Buffalo State University Buzz newsletter, students were enrolled via email. A total of 66 students participated. The results revealed a moderate, statistically significant correlation ($r= 0.256$, $p= 0.038$), indicating that greater food insecurity severity is associated with higher levels of perceived stress. Additionally, food access was strongly correlated with perceived distress, showing a moderate to strong positive relationship ($r= 0.386$, $p= 0.002$). Further analysis indicated that food not lasting due to insufficient funds ($r= 0.260$, $p= 0.035$) and eating less because of financial constraints ($r= 0.274$, $p= 0.026$) also significantly contributed to increased perceived stress. These findings suggest that food insecurity, particularly in relation to food access, food availability, and financial constraints, is a significant contributor to stress among college students. This study highlights the importance of addressing food insecurity on campuses to mitigate its impact on mental health.

What Impact Do Democratic Mediators Have on Women's Economic Empowerment in Conflict-affected Countries?

Asma Islam, International Relations
Faculty mentor: Professor Mehwish Sarwari, Government, Planning, and Philosophy

What impact do mediators from democratic regimes have on women in conflict-affected countries? Women's economic empowerment in conflict-affected countries is often hindered by political instability, structural inequalities, and restrictive socio-cultural norms. Democratic mediators such as international organizations, civil society groups, and transitional governments play a pivotal role in fostering inclusive economic recovery by advocating for gender-sensitive policies, ensuring legal protections, and facilitating access to financial and educational resources. This paper examines the impact of democratic mediators in post-conflict settings through case studies of Rwanda, Afghanistan, and Colombia, analyzing their role in promoting labor market participation, entrepreneurship, and property rights for women. Findings suggest that while democratic mediators create critical opportunities for women's financial independence, challenges such as weak institutional frameworks, persistent gender biases, and security threats often undermine progress. By evaluating the successes and limitations of these mediators, this study offers policy recommendations to enhance sustainable economic empowerment for women in conflict-affected regions.

The Influence of Stress on Cannabis Craving in University Students

Meghan Johnson, Psychology
Faculty mentor: Professor Gehan Senthinathan, Social & Psychological Foundations of Education; Psychology

Undergraduate students are exposed to a variety of social stressors, which can influence decision-making, and the development of substance use disorders. As legalization of cannabis becomes more widespread and availability of the psychoactive substance becomes more ubiquitous, it is essential to better understand how social stress influences cannabis use among undergraduate students. This study is part of a larger experimental procedure that included additional measures. The purpose of this study is to explore how social stress influences cannabis craving. Participants will be randomly assigned to one of two groups. Saliva samples will be collected to analyze a biomarker of stress, and participants will complete the Core Alcohol and Drug Survey, which assesses the nature and scope of psychoactive substance use. Subsequently, Group 1 (the experimental group) will participate in the Trier Social Stress Test (TSST), which includes an anticipatory period for a mock interview, delivering a speech, and performing a mental arithmetic task in front of two judges. Group 2 (the control group) will complete a simple reading and counting task for a similar duration as the experimental group. A second saliva sample will be collected to explore changes in stress induced by the TSST. Finally, all participants will complete the State Trait Anxiety Inventory and the Marijuana Craving Questionnaire-12. Preliminary data will be presented. This study will improve our understanding of current patterns of psychoactive substance use among

undergraduate students and explore whether social stress impacts cannabis craving. Results might inform future interventions aimed at reducing problematic cannabis use among undergraduate students.

Beyond the Classroom: What Educators Need to Understand about Child Maltreatment to Ensure Successful Learning

Mya Jones, Early Childhood Education
Faculty mentor: Professor Pixita del Prado Hill, EELEL

This study explores how educators can create a healthier classroom environment by taking time to learn and understand the impacts child maltreatment has on students. Child maltreatment refers to the abuse or neglect a child may face, this can take place in various forms. Maltreatment involves any actions or failure to act by a parent/caregiver that results in harm or potential harm to a child's safety, well-being, or development. Child maltreatment can affect a child's academic performance and social-emotional development which will be reflected in their classwork and relationships with peers. A literature review will inform teachers of the effects child maltreatment has on a student's behavior, learning, and overall success in the classroom. Teacher awareness is essential because it helps them recognize the signs of maltreatment and its impact on a student's social-emotional development. Understanding child maltreatment in an educational context allows teachers to build stronger and deeper relationships with their students. With increased knowledge and training educators will feel more empowered to create inclusive and supportive environments which will have a greater impact in their students' lives.

Ethical Hacking with Kali Linux

Rakib Kabir, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

As computers being the norm in every aspect of daily life, the increase in cyber threats over the past years has left many individuals and organizations vulnerable to attacks such as data breaches, ransomware, and system intrusions. The issue is that many systems are not adequately tested for vulnerabilities before an attack occurs and as a result of improper testing, many organizations are not prepared when faced with cyberattacks. In this research project I will focus on using Kali Linux, an open-source penetration testing distribution to ethically hack, identify and mitigate common security flaws in computer systems. Kali Linux offers ethical hacking tools like Metasploit, Nmap, and Wireshark, which can simulate cyberattacks and assess the security of networks, applications, and systems. This project will create a controlled test environment where common attacks such as brute force attacks, SQL injections, and cross scripting (XSS) can be simulated. The goal is to provide security insights, such as patching vulnerabilities, using multi-factor authentication, and encryption. By

the end of this project, Kali Linux will demonstrate its role of identifying vulnerabilities and offer solutions to secure systems, improve networks, and protect confidential/sensitive data. The tools and methods will show how organizations can protect themselves from cyberthreats but will also provide roadmap for ethical hacking practices that can be applied to real-world scenarios.

Examination of Food and Nutrition Security Amongst Food Pantry Clientele with Chronic Disease: A Mixed Methods Study

Luke Lojek, Dietetics, MS
Faculty mentor: Professor Danielle King, Health, Nutrition, and Dietetics

Food insecurity is broadly defined as the limited/uncertain availability of safe, nutritionally adequate, and culturally appropriate foods. Food insecurity disproportionately affects those who are impoverished, have chronic health conditions, and face social inequalities. Thus, assessing the suitability and nutritional adequacy of food pantry items in meeting the needs of food pantry clientele with chronic disease is warranted. Therefore, the purpose of this cross-sectional, mixed methods study was to understand the barriers to accessing and consuming suitable foods for disease management at food pantries in Buffalo, NY.
A convergent parallel study design was employed. Participants were recruited via convenience sampling from food pantries in Buffalo, NY. Participants completed questionnaires assessing food insecurity, nutrition literacy, and usual dietary intake. Interested participants further completed a semi-structured, qualitative interview, designed to obtain richer detail on the individual's lived experience managing a chronic disease. Descriptive and inferential statistics will be used to quantify participant characteristics and nutrition literacy; NutritionistPro will be used to analyze dietary data. Content analysis will be used to analyze semi-structured interviews for emerging patterns and themes. Identifying barriers to obtaining and consuming healthful foods for disease management at food pantries may assist in informing future interventions for community and population health.

Simple Firewall

Connor Mack, Computer Information Systems
Faculty mentor: Professors Sarbani Banerjee, Computer Information Systems; Neal Mazur, Computer Information Systems

This project focuses on developing a dynamic firewall system to enhance network security by providing real-time monitoring, filtering, and logging of network traffic. Traditional firewall models often struggle to adapt to evolving cyber threats, making static firewalls inadequate for modern security needs. This project aims to address these limitations by implementing a rule-based system that allows users to define and enforce custom traffic filtering policies. The firewall is designed to inspect incoming

and outgoing packets using Python and Scapy, blocking unauthorized access based on predefined rules for IP addresses and ports. By enabling users to configure specific security policies, the system enhances protection against malicious activity while maintaining flexibility. The project is developed using Visual Studio Code, providing an efficient environment for writing, testing, and refining firewall functionality. Logged data will help analyze traffic patterns and detect potential threats, offering insights into network security challenges. The expected outcome is a functional, customizable firewall that can adapt to different security requirements. By attending the presentation, participants will gain an understanding of key cybersecurity concepts, real-time traffic filtering, and the practical implementation of packet inspection using Python. This study contributes to the ongoing effort to develop more adaptive security solutions, demonstrating the importance of user-defined rules in strengthening network defenses against unauthorized access and emerging threats.

New York's Empire State of Mind

Anany Marcano, Psychology
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

The New York Empire State child credit was created upon the federal child tax Credit but focuses on providing financial relief for families specifically in New York State. Established in 2006, the credit benefits families with children aged four to seventeen by providing up to $330 per child. However, under Governor Hochul's new proposal, in 2024, the tax credit will now grant children over four with $500 and children under four with $1,000. It is equitable as the proposition will now cover families with children starting at a younger age. It is processed through tax returns meaning direct assistance. These changes are suggested to double the average credit and reduce child poverty. This policy will be effective when implemented in the state, as Buffalo withholds one of the highest child poverty rates in the U.S. Information was sourced from the U.S. Census Bureau, NY State OTDA, CGR, the Community Foundation for Greater Buffalo; etc. Buffalo is ranked seventh in the child poverty rate among U.S. cities and about 40% of children live in poverty. A concern is that it may not profit the families who need it or fraud may occur. This child tax credit will alleviate families and allow them to focus more on their quality of life. To help lower child poverty, one could contact Governor Hochul's office to express support for the proposition, engage in the Community Foundation for Greater Buffalo and other local organizations, and spread awareness to eligible families.

Experimenting Data Collections for Digital Twin Models for Urban Planning and Urban Design

Allen Mendez, Urban and Regional Planning
Faculty mentor: Professor Tao Tang, Geosciences; Mary Perrelli, Geosciences

To create a scaled-three-dimensional (3D) digital model using ArcGIS Pro GIS software, data must be collected through a ground LiDAR or laser scanning system. In this project, our team developed a LiDAR system, consisting of a LiDAR scan head, a laptop, a Global Positioning System (GPS) for real-world coordinate data, and a portable power supply. This system was used to gather 3D point cloud datasets at two locations on campus: the courtyard of the Student Union and the Library. The goal of this project is to construct digital models of these buildings within the ArcGIS Pro environment with the ultimate aim to create a digital twin of the campus in providing a virtual representation of SUNY's major urban campus for prospective students.

Poverty Within Communities of Color in Buffalo

Khushayah Morris, Psychology
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

My research topic will be poverty and the impact it has on communities of color in Buffalo. As of 2020 14 percent of people of color lived in poverty in the United States. These numbers rise year by year in the United States . As of 2021 ,thirty-five percent of black residents in Buffalo live in poverty, compared to less than ten percent of white individuals. People of color in Buffalo face significantly higher poverty rates and limited access to resources compared to white residents . I chose this topic because being from the city of New York I see the parallels that different communities of color face in Buffalo compared to Brooklyn . I understand that the Poverty levels in Buffalo compared to white Communities is unsettling .I will examine local data and interview experts in the field to understand the impact of poverty within communities of color. I expect to find more on how communities of color differ between the white population of Buffalo while finding more on how things got to the way they are now . I also expect to find resources that can help poverty within communities of color . My goal for this project is to educate and make people aware of this great social issue happening in buffalo and for some rights in their own home . I want issues to be made aware so real progress could be made but I would just like to educate people interested in the poverty problem of people of color in Buffalo.

Spanish Speaking Confidence AI Tutor

Kenneth Mosley, Computer Information Systems
Faculty mentor: Professors Sarbani Banerjee, Computer Information Systems; Joaquin Carbonara, Mathematics

Learning a new language can be daunting, especially for those lacking confidence in verbal communication. This project seeks to develop an AI-driven Spanish-speaking

tutor that offers a low-pressure, interactive environment for practicing conversation without judgment. Unlike traditional tools focused on grammar rules or multiple-choice exercises, this system emphasizes real-time, fluid dialogue tailored to the learner's proficiency. Built with Python and integrating Ollama to deploy a LLaMA 3 model optimized for natural language processing, the AI uses LangChain to manage contextual memory and track progress. The model is fine-tuned with structured prompts to adapt its responses dynamically, ensuring engaging and appropriately challenging interactions. It starts at the user's fluency level and introduces more complex vocabulary, grammar, and cultural context as skills improve. For ease of use, the system is deployed via a Flask-based web app, providing a simple interface where users can interact with the AI through text or speech. Future updates may include speech recognition and pronunciation feedback via Whisper or Deepgram APIs for real-time spoken conversation assessment. The goal is to reduce speaking anxiety while building confidence and fluency. This research contributes to AI-assisted language learning by demonstrating how personalized, adaptive dialogue systems can enhance spoken fluency. By leveraging advanced NLP techniques, the project explores the intersection of machine learning and education, making language acquisition more engaging, interactive, and accessible.

Transportation Poverty in Buffalo

Cecilia Nowak, Criminal Justice
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What does poverty and transportation look like in Buffalo? Approximately 18% of US households do not have access to a reliable vehicle, presenting significant lifestyle barriers, limiting access to essential services, and opportunities for social and economic mobility. Transportation poverty reinforces existing inequalities, disproportionately impacting low income and communities of color. This project utilizes a variety of local studies, reports, and census data to examine the impact of transportation access on poverty in Buffalo. The study found over 29% of Buffalo households lacked access to a vehicle, 67% of these households are low income. However, almost 58% of jobs in the region are beyond the reach of public transit. NTFA bus routes are concentrated around the city of Buffalo, lacking in suburban and rural areas. Buffalo's public transportation system has failed to keep up with rapid sprawl and urban development, decreasing mobility and isolating residents without access to personal vehicles. In conclusion, accessibility to affordable, reliable transportation has a significant disproportionate impact on low income households and communities of color in Buffalo. Attend my poster to learn more about how access to transportation contributes to poverty in Buffalo and different steps we can take as a community to address this issue.

We are Watching: Intrusion Prevention Systems

Jamie Olivier, Computer Information Systems
Faculty mentor: Professors Sarbani Banerjee, Computer Information Systems; Cahrles Arbutina, Computer Information Systems

Millions of cyberattacks occur daily, threatening the security of private networks and putting sensitive data at risk. To help protect against these threats, organizations use Intrusion Detection Systems (IDS) to monitor network traffic and identify suspicious activity. IDS can detect threats using two main methods: signature-based detection, which recognizes known attack patterns, and anomaly-based detection, which identifies unusual behavior. However, while IDS alerts administrators to potential breaches, it does not take action to stop them. To address this limitation, Intrusion Prevention Systems (IPS) expand on IDS by not only detecting threats but also blocking or mitigating them in real time. IPS actively analyzes traffic and can prevent attacks before they cause harm

How Does Access to Transportation Impact People in Buffalo Living in Poverty?

Anuoluwapo Olupitan, Individualized Studies
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

Living in poverty in Buffalo, New York, poses several difficulties for it's citizens, especially when it comes to having access to dependable transportation. Lacking a personal vehicle can impair many people's capacity to find work, obtain necessary services, and engage in educational opportunities in low-income regions. People who depend on public transportation can have to deal with lengthy journeys and wait times, which could discourage job seekers and make it more difficult for them to access better work possibilities.In the United States, poverty and transportation are closely connected the absence of access to reasonably priced and dependable transportation options contributes to poverty and hinders economic mobility. And it's harder for locals to get to grocery stores, medical facilities, and recreational opportunities that enhance general wellbeing. Furthermore, the high expenses of auto repair together with the difficulty of finding reasonably priced accommodation close to places of employment create an endless cycle of distress that is challenging to escape. Helping the transit rate, improving connection, and improving public transportation infrastructure could enable people and families to break free from poverty, promoting economic mobility and a better future. In urban areas like Buffalo, strategies that make affordable transportation first are essential for ending the cycle of poverty. To see if this is an issue in Buffalo as well I will look at local data and include it in my work.

Normalized Difference Vegetation Index (NDVI) Analysis of Southeast Alden, NY

Allison Panek, Earth Sciences; Environmental Geography
Faculty mentor: Professor Tao Tang, Geosciences

This study investigates the land use changes in Southeast Alden, NY for the growing season (April to October) in the years 2008 and 2021, through the analysis of the Normalized Difference Vegetation Index (NDVI). Alden is home to significant farming districts, making remote sensing a beneficial tool to use in agriculture for reasons such as monitoring crop health, managing irrigation techniques, and detecting potential pests and or invasive species. High-resolution orthoimagery and Landsat satellite images were downloaded from "Discover GIS Data NYS" and "USGS Earth Explorer," and processed using ArcGIS Pro and ERDAS Imagine. The research questions addressed were: “How does land use change between the 2008 and 2021 years?” and “How does land use change within the 2008 growing season and within the 2021 growing season?” Analyses indicated stable vegetation health for the specified study period, with observations suggesting that crop growth cycles, weather conditions, and management practices influenced these visual changes. Many famers utilize satellite imagery, because it is useful for analyzing a large area in a short amount of time to gauge issues like infestations, nutrient deficiencies, and irrigation problems.

Evaluation of a Protocol to Investigate Outcomes and Challenges Post-Bariatric Surgery Using Simulated Data

Lindsey Parisse, Dietetics, MS
Faculty mentor: Professor Tina Colaizzo-Anas, Health, Nutrition, and Dietetics

Background. Obesity is a multifactorial, chronic disease characterized by excessive adiposity, often necessitating medical interventions beyond lifestyle modifications. Bariatric surgery, a set of procedures designed to induce weight loss through anatomical and physiological modifications, has emerged as an effective long-term intervention. However, research is needed to assess the sustainability of weight loss and patient-reported outcomes. Objective. This study aimed to evaluate the feasibility of a research protocol designed to assess post-bariatric surgery outcomes. Methods. The protocol involves administering a Qualtrics survey to individuals who had undergone bariatric surgery. The survey incorporates a validated Eating Behavior After Bariatric Surgery (EBBS) questionnaire. Due to recruitment challenges, simulated data are utilized to test the feasibility of the protocol. Results. Frequencies evaluate types of challenges in adherence to diet, physical activity, and supplements. One-way ANOVA evaluates the difference in weight loss between different bariatric procedures. Pearson correlation evaluates the relationship between percent weight loss and EBBS score. These proposed mock statistical analyses suggest that the protocol is feasible with alternative recruitment strategies. Conclusion. This study highlights the potential applicability of the proposed protocol in bariatric research. Future studies with expanded recruitment efforts may generate clinically meaningful insights that inform post-surgical nutrition counseling and long-term weight management strategies.

The Cephalopod Fossil Collections of Buffalo State University

Anthony Puleo, Earth Sciences
Faculty mentor: Professors Nicholas Sullivan, Geosciences; Kevin Williams, Geosciences

The purpose of this project was to gain a more thorough understanding of fossil preparation, sample curation, and identification of fossil cephalopods, a diverse class of the phylum Mollusca. This project was conducted in three phases. First, a complete inventory was made for the entire Buffalo State cephalopod fossil collection, helping to re-organize and digitize it. This collection, assembled by several faculty members over the past 50 years, comprises four major subclasses (Ammonoidea, Bactriodea, Coleoidea, and Nautiloidea), subdivided into eight orders, 42 families, and 61 genera. The second objective of this project was to clean and prepare a new cephalopod specimen. This was accomplished with dental picks and an air abrasion unit used to remove matrix and reveal more of the phragmocone and treating the exposed fossil with museum-grade glue for protection. Finally, the identification of a professionally prepared cephalopod specimen, using relevant literature to compare anatomical features to determine the identification of the genus. The specimen is an ammonite, most likely an Early Cretaceous (Aptian-Albian) member of the family Hoplitidae from Madagascar. We interpret it as a representative of the genus Cleoniceras. The poster summarizes the individual phases of the project, and includes an anatomical overview of cephalopods, an overview of the physical and digital cephalopod collection of Buffalo State, a detailed look into the process of cleaning and preparing a fossil for display, and a systematic description of the Madagascar ammonite.

What Influences an Individuals' Food Selection at Pantries, and Can We Intervene?

Lorelei Right, Health and Wellness
Faculty mentor: Professor Danielle King, Health, Nutrition, and Dietetics

Food insecurity, defined as the limited or uncertain availability of safe, nutritionally adequate and culturally appropriate foods, affects millions worldwide. While often perceived as a simple lack of food, its impact extends far beyond immediate hunger, as compromised dietary quality often accompanies food insecurity. When resources are scarce, individuals are often forced to prioritize affordability or accessibility over nutritional value. Food pantries aim to alleviate hunger by providing food assistance to individuals and families experiencing food insecurity. Pantries strive to bridge the gap between need and access, ensuring that community members have access to essential groceries and other food items.
A healthful diet provides the essential nutrients the body needs for optimal function, protecting against many chronic diseases including heart disease, obesity, and diabetes. Considering the impact diet can have on overall wellbeing, mental health, and energy levels, the purpose of this study is to understand what factors influence

patrons' food selection at food pantries, and explore what interventions can be employed to positively influence the selection of healthful food.

Cyber Ethics

Rose Rivera, Computer Information Systems
Faculty mentor: Professors Sarbani Banerjee, Computer Information Systems; Gang Hu, Computer Information Systems

This project aims to enhance dental health for children from marginalized communities by integrating AI, gaming, and educational tools into a medical/dental platform. It focuses on at-risk populations, including those living in poverty, BIPOC (Black, Indigenous, and People of Color), refugees, individuals with intellectual and developmental disabilities (IDD), and non-native English speakers—groups that face significant barriers to regular dental care. Key components include AI-driven dental self-diagnosis, 3D teeth model reconstruction, an interactive avatar chatbot, dental health education, and community outreach, all accessible through a HIPAA-compliant patient portal. AI-powered diagnostics enable patients to submit intra-oral images for automated, remote assessments, improving early detection and reducing reliance on in-person visits. Additionally, AI-driven 3D modeling streamlines the creation of dental prosthetics like crowns and implants, minimizing errors, lowering costs, and accelerating production compared to traditional methods. By integrating AI-driven diagnostics, personalized education, and advanced dental modeling, this project seeks to improve access to quality dental care, particularly for underserved and remote populations, fostering healthier smiles and brighter futures.

Domestic Violence: Advocating for a Safer Future

Laura Rupell, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

Domestic violence is a pervasive social issue that impacts individuals across all demographics, and often leads to extreme physical, psychological, and socioeconomic consequences. One in four women, and one in seven men in the United States have experienced some form of domestic violence during their lifetime (CDC, 2011). Victims/survivors of domestic violence are often hesitant to report and are often unaware of or have a reduced ability to access resources that can assist them. I have been motivated to decrease the number of victims/survivors that have not been connected to resources with the goal of increasing social justice, well-being, and safety for those experiencing domestic violence in Erie County. For my senior year, I have been interning at Child & Family Services, Haven House. Haven House is a domestic violence shelter that provides housing, domestic violence counseling and education, victim advocacy, support, and more. My position as an intern has granted me the ability to apply the knowledge and skills I have acquired through the

Social Work program. I worked primarily completing outreach calls to connect people with resources, finalizing applications for financial reimbursement through the New York State Office of Victim Services, contributing to therapeutic and educational groups, and in different court locations alongside victim advocates to provide support during legal proceedings. This internship has integrated my education with social work practice and has helped me to leave an impact on individuals in my community.

What Does Child Poverty Look Like in Buffalo?

Khaled Saeed, Criminal Justice
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What does child poverty look like in Buffalo? At the national level, child poverty is 16%, and many children experiencing food insecure, have limited access to quality healthcare, and are facing challenges in education. Locally in Buffalo, child poverty remains a high concern with more families experiencing food insecurity, poor health care, and education. This project explores how local factors lead to childhood poverty by analyzing data from census reports and local agency data. The initial outcomes of the study show that the visual documentation is in agreement with the national studies which show that children in low-income areas have worse academic achievement, more health issues and food insecurity. The latest data from the U.S. Census Bureau shows that more than 40% of youth in Buffalo live in poverty, which is significantly higher than the state and national averages. This project finds that systemic change in the form of policy changes and enhanced community support is necessary to address childhood poverty in Buffalo. The audiences of this presentation will be able to identify current resources, policy and advocacy opportunities, and collaborative strategies to ensure equal opportunities for education, nutrition, and healthcare for the youth of Buffalo. In the end, the idea is to raise the community's concern and action toward policies that will lead to lasting positive changes in the lives of children in poverty.

Utilizing Exercise Snacks in Graduate Level Courses to Improve Students' Mental and Physical Health

Kaylea Schiedel, Higher Education and Student Affairs, MS
Faculty mentor: Professor Kim Kline, Higher Education Administration

The majority of college students report high levels of depression or anxiety at some point during their college experience (Zhang, et al., 2022). While being in graduate level courses, college students have limited time to spend on self-care habits such as exercising. With that, stress levels are heightened, goal setting is limited, and focus and attention in class becomes a challenge for students (Colman et al., 2016). There is a positive relationship between exercise and mental and physical health benefits (Zhang, et al., 2022). In the last several years, people have been utilizing exercise

snacks as a way to fit physical activity into their busy schedules. Exercise snacks involve short bouts of physical activity throughout the day that are proven to contribute to cardiovascular health (Jones, et al., 2024). College students can use exercise snacks to improve their well-being, focus, goal setting strategies, and self-efficacy both in and out of the classroom. All of these areas are closely related to physical and mental health. Studies have shown that by having students participate in exercise snacks during class can have a great influence on students' academic success as well. Students who engage in self-care practices to support their well-being, engage in the classroom by setting goals for themselves, paying attention, and maintaining self-efficacy are all ways to boost academic performance. However, exercise elements can be used to promote all of these factors. Students who exercise regularly, take care of themselves, while staying engaged in school are more likely to be happier and less stressed, which ultimately contributes to mental and physical health.

Evaluation of a Protocol to Investigate the Effect of Varying Added Sugar Intake on Pain in Dysmenorrhea Using Simulated Data

Hannah Schmidt, Dietetics, MS
Faculty mentor: Professor Tina Colaizzo-Anas, Health, Nutrition, and Dietetics

Dysmenorrhea, or menstrual pain, affects 60% of women, leading to decreased quality of life and reliance on pharmacological treatments, including nonsteroidal anti-inflammatory drugs (NSAIDS) or hormonal/contraceptive treatments. Current research suggests that diet may ameliorate symptoms of dysmenorrhea, yet high-quality studies are limited. After piloting a novel protocol, we propose a randomized crossover study to evaluate the effects of varying added sugar intakes on menstrual pain among students aged 18-35. Participants are randomly assigned to the Low-Sugar Mediterranean Diet (LSMD) or Non-Restricted Sugar Mediterranean Diet (NRSMD), followed by a washout, and opposite diet. The primary outcome is change in pain scores using a validated Visual Analogue Scale (VAS). Secondary outcomes include anthropometric data, NSAID use, and caffeine intake. Dietary adherence is assessed through Nutritionist Pro 24-hour recalls and food frequency questionnaires, and PREDIMED diet assessment tool. Using simulated data we tested statistical procedures using paired t-tests to evaluate the differences in VAS scores. We propose a protocol to assess the relationship between added dietary sugar intake and dysmenorrhea. The methods we describe are feasible with a streamlined recruitment plan. Future application of this protocol may help support the use of nutrition as an effective form of symptom management.

In Buffalo, What Were the Factors That Caused Poverty Among Marginalized Groups in the 1970s?

Margaret Schwagler, Social Work

Faculty mentor: Professor Jessica Fitzpatrick, Social Work

At the age of immigration, poverty has become more apparent to cities, which created more low income areas. In the 1970s, poverty started to slowly increase, which led to more income inequality across the country. I looked through different documents that went into poverty in Buffalo during the 1970's. Donald G. Fowles has found that approximately 71, 204 individuals were identified as African American, which creates 59.9 percent of the population who identifies as being in a low-income area. Given that this was the decade after the civil rights movement and progression, it's not surprising that African Americans will come into bigger cities like Buffalo to find a change and create a new life. Seeing the number has given a better understanding on how many people did move into Buffalo, but there could also be a stigma that only affects those who are not middle-class, white, or male. The programs that would be created would attempt to help those families, but there could be some form of bias towards African Americans, which could add a stigma towards the groups. Today, there are risks of social services being harder to get into due to politics and the federal government. It is important to hear how much different programs and policies affected society in the last century, especially to marginalized groups.

Buff State Shuttle: Navigate Campus Life

Saugat Siwakoti, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems

This research aims to develop a comprehensive shuttle management system for SUNY Buffalo State University to improve transportation accessibility for students. The primary goal is to provide real-time tracking of university shuttles, which will help students who do not have personal transportation to reach nearby stores and key locations efficiently. The system will be accessible through an Android application, with the potential to expand to a web version if there is demand. A separate application will also be developed for shuttle operators, allowing them to update shuttle locations and schedules in real time.
The shuttle management system is being built using React and React Native for the frontend and Supabase for the backend. Supabase, with its PostgreSQL-based backend and real-time capabilities, is essential for dynamically tracking shuttle locations. The system's architecture is designed to ensure high performance, smooth user interaction, and efficient data handling. Key focus areas of the project include optimizing real-time updates to provide near-instantaneous location tracking, enhancing the operator dashboard to make route and schedule management more intuitive, and ensuring that the platform runs efficiently across various devices. The project is structured into several phases, which include data collection, feature development, rigorous testing, and final deployment to ensure system reliability and user satisfaction. Version control is managed through a Git repository, and the backend is hosted on a cloud-based server for scalability. This research contributes to the field of smart transportation systems by emphasizing the integration of real-

time data management and user-centric design to enhance campus mobility solutions.

Empowering Communities Through Cultural Competency and Applied Learning: Insights from My Social Work Internship

Latasha Smith, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

My presentation will discuss my applied learning through the social work internship with BestSelf Behavioral Health. BestSelf Behavioral Health's mission is to deliver accessible, evidence-based, and family-centered behavioral health services that promote health, hope, recovery, and an improved quality of life. They serve individuals of all ages across Western New York, addressing mental health and substance use challenges through inclusive and culturally responsive care. My presentation will address the CSWE (Council of Social Work Education) competencies 6, 7, 8, and 9 are related to the professional work that I have experienced during my care manager internship with BestSelf. My presentation will highlight the importance of how BestSelf demonstrates cultural competency when assisting individuals of marginalized communities. Additionally, I will discuss the different intervention strategies that my Supervisor and I have used to build empowerment within individuals. The aim of my presentation is to provide an overview of BestSelf Behavioral Health and what I have learned as a care manager intern with the organization.

Breaking Good: Cazenovia's Formula for Recovery

Gabrielle Snider, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

Cazenovia Recovery Systems, Inc., the largest residential treatment agency in Western New York, plays a pivotal role in addressing society's dual crises of addiction and homelessness through comprehensive recovery programs. Caz Recovery operates multiple facilities that serve individuals facing substance use and mental health disorders, providing trauma-informed care to help clients develop essential life skills, reconnect with their communities, and build a stable foundation for long-term recovery. In 2023, the opioid crisis reached horrifying levels, with fentanyl implicated in 91% of opioid-related deaths in Erie County, highlighting the critical need for effective solutions (Erie County Department of Health, 2023). In the same year, Caz Recovery supported 796 individuals, with a notable 82% remaining substance-free. The agency's 99% satisfaction rate, as reported in resident surveys, highlights its success in adhering to evidence-based practices and focusing on client-centered approaches (Cazenovia Recovery Systems, Inc., 2023). These insights were reinforced through hands-on experience gained during an internship at

Sundram Manor, a Caz Recovery facility. The internship involved supporting residents through case management, conducting intake assessments, and connecting residents with necessary resources. Through this experience, the intern developed a deeper understanding of clinical documentation, strengthened practical skills in client-centered treatment, and learned the importance of teamwork in coordinating effective, comprehensive care. The poster presentation, based on this internship, highlights how the agency proficiently meets the Council on Social Work Education's standards. It explores how Caz Recovery bridges service gaps and addresses the practical challenges of delivering care to underserved populations across Western New York.

Factors Influencing Participation and Adherence to Resistance Training Among Older Adults: An Exploratory Study

Robert Stabler, Dietetics, MS
Faculty mentor: Professors Leah Panek-Shirley, Health, Nutrition and Dietetics; Danielle King, Health, Nutrition and Dietetics

The US Department of Health and Human Services recommends elderly adults engage in resistance training at least two days a week. Despite recommendations, only 15.3% of adults over 65 y regularly engage in resistance training. And, many health professionals do not counsel their patients on physical activity, citing lack of confidence, training, and resources. The primary aim of this exploratory study was to describe the factors that support elder participation in resistance training. Semi-structured questionnaires were distributed to adults 65 y and older who were engaged in regular resistance training at a single fitness facility. The questionnaire collected information about demographics, perceptions about resistance training, social factors related to resistance training, related health and medical factors, and thoughts about participants' current program. Participants were invited by their fitness instructors to fill out the questionnaires and given a private room and time to complete them. Thematic analysis will be used to understand themes by qualitatively coding the transcribed responses.

Children and Adolescent Mental Health: Perspectives from Inpatient Psychiatry

Megan Stoimenova, Social Work
Faculty mentor: Professor Catherine Mazzotta, Social Work

Providing comprehensive mental health treatment is vital to the success and future of each child. At my internship at the Western New York Children's Psychiatric Center, their mission is to provide effective treatments that support hope and recovery for children and adolescents with significant psychiatric and behavioral challenges. I've gained immense exposure to mental health, working alongside therapists, psychiatrists, and interdisciplinary treatment teams within this inpatient hospital. As

an intern, my role includes conducting admissions with families and children, facilitating group therapy, completing core histories and disability forms, prepping medical consents for physicians, and shadowing evaluations such as initial treatment plans and Columbia Suicide Severity Rating Scale Assessments. I've also observed therapy sessions, family meetings with the psychiatrists, and attended interdisciplinary team meetings. This internship has provided me with experience that will catalyze my career as a social worker, especially in the mental health field. I've gained extensive knowledge on a variety of mental health diagnoses, treatments, therapeutic interventions, psychiatric medications, and de-escalation techniques. Witnessing patients' progress from admission to discharge has reinforced the beneficial impact that trauma-informed care can have. Furthermore, WNYCPC has provided me experience working with diverse families, each with unique needs, allowing me to demonstrate and strengthen the competencies that I have learned throughout my academic experience. This internship has provided immense insight into children's and adolescents' mental health and has been profound to my growth as a social worker.

From Chaos to Cipher: The Beauty of RSA

Jade Taylor, Computer Information Systems
Faculty mentor: Professors Sarbani Banerjee, Computer Information Systems; Neal Mazur, Computer Information Systems

RSA Encryption is one of the most widely used methods to protect data online, using a public and private key system. This project will explore the basic math behind RSA encryption, focusing on how prime numbers, modular arithmetic, and number theory work together to make the system secure. The goal is to better understand how these concepts help generate secure keys and protect sensitive information. Cryptography is the practice of protecting information, and RSA is one of the most trusted systems for encrypting and securing digital communication. RSA relies on the difficulty of factoring large numbers, making it hard to break. This project will dive into how RSA works, from key generation to encrypting and decrypting messages. Python will be used to build and test the RSA algorithm. The code will handle key generation, encryption, and decryption, with particular attention given to the importance of large prime numbers. An IDE like an online Python compiler or the one installed on my computer, to help with coding and testing. The project will also look at how the algorithm works in practice, checking its performance and security as prime number sizes change. The goal is to create a working RSA encryption system using Python, which will show how encryption and decryption are done in real-time. The project will explain how RSA's security works and how different key sizes affect its strength. Additionally, it will discuss RSA's strengths and potential weaknesses, especially in relation to new technologies like quantum computing.

Evolution of Cryptography: The Importance of Cyber-Security Communication Data

Ryan Thompson, Computer Information Systems
Faculty mentor: Professor Sarbani Banerjee, Computer Information Systems; Eric Nagel, Computer Information Systems

I present my experience developing a secure client-server communication system using C# language in Visual Studio in the Computer Information systems at SUNY Buffalo State University. Cryptography is the procedure of encrypting data so that only authorized users have access to it. This project aims to develop secure client-server communication in C# implementing RSA encryption to encrypt and decrypt messages during transmission while preserving data security. Secure communication is critical in modern networking, and this project seeks to create a secure messaging and file-sharing system that prevents unauthorized access. Throughout the development process, I experimented with several encryption techniques and networking protocols to discover the most effective approach for securely delivering data. I considered several encryption methods before selecting RSA encryption due to its strength in public-key cryptography and widespread use in secure communications. My project also required creating a client-server model that could handle TCP socket connections, HTTP requests, encrypted messages, and file transfers. I implemented data verification techniques to detect any loss or disruption during transmission. Furthermore, the server keeps a file directory where clients can search and retrieve shared files using a keyword-based system. If requested file is not available, the server provides a "404 Not Found" error message, providing correct error handling. My presentation will explain why I chose RSA encryption, how we designed and implemented our client-server model, and the difficulties we encountered during development. I will demonstrate encrypted message exchange and secure file sharing to emphasize the importance of cryptographic security in client-server communication.

The Nature And Scope of Psychoactive Substance Use in Undergraduate Students

Krystal Wainwright, Psychology
Faculty mentor: Professor Gehan Senthinathan, Social & Psychological Foundations of Education; Psychology

Patterns of licit and illicit psychoactive substance use are influenced by availability. For example, alcohol (a licit drug) in the United States, is readily available and is the most common drug of choice among undergraduates. Cannabis use is also prevalent, particularly among individuals in their early twenties. With the increasing legalization of cannabis across many states, its use among undergraduate students has risen. Past-year and past-month use of cannabis are highest among people in their early twenties. While alcohol remains more prevalent overall among undergraduate students, levels of cannabis users categorized as “intensive” users have surpassed that of daily alcohol consumers. An improved understanding of the nature and scope of psychoactive substance use among undergraduate students

might support educational interventions aimed to reduce the incidence of substance use disorders within this population. This study is part of a larger experimental procedure that included additional methods and measures. The purpose of this study was to explore the nature and scope of psychoactive substance use among undergraduate students. Buffalo State University undergraduate students aged 18-26 years of age will complete the Core Alcohol and Drug Survey. Preliminary results will be presented, highlighting key findings on drug prevalence rates and usage patterns. With an improved understanding of current patterns of psychoactive substance use, it will be possible to inform future educational interventions, public policy, and treatment strategies to substance use disorders.

The Student Studio: Empowering Youth Voice Through Multimodal Composition

Jarrett Whipple, English Education, MSED
Faculty mentor: Professor Pixita del Prado Hill, EELEL

This is a study which seeks to examine the impacts of independent multimodal composition on students, how classrooms which engage in this work are structured, and the accessibility of this work to a variety of classrooms. In order to reach conclusions which speak beyond a single school's circumstances, research was engaged at two separate schools in the greater Western New York area; a high school within a first ring suburb and a high school in a rural town. Research data was collected through observational notes, interviews with teachers, and in viewing student composition work. Data was analyzed using the methods of qualitative and In Vivo coding. This study found that student learning, development, and engagement is tied to authentic classroom practices and audiences to have real impact; the importance of fluid instruction and practices to create a productive learning environment; and that multimodal composition work has become democratized with the advent of ready access to smartphones. This project was limited through factors relating to time researched within both classrooms, as time spent in both classrooms was not equal and was over a short period of time.

When Was the Last Time that You Drove Down Broadway?

Christopher Wright, Social Work
Faculty mentor: Professor Jessica Fitzpatrick, Social Work

What is the correlation between poverty and substance use in Buffalo? In America the relationship between addiction and poverty is a complicated one. Within areas of lower income across America there are slightly higher rates of individuals who struggle with alcohol or substance use addiction then any other areas. In order for me to determine if this factor is applicable in Buffalo I will review and examine local relevant statistics, review local news stories and talk with experts who work with this population. Buffalo having a population which is comprised of 28% living below the

poverty level rates Buffalo as the third poorest city in America. Buffalo is the largest city in Erie County and in the year 2022 there were 379 fatal overdoses reported in this county. These numbers do not include non fatal overdoses or overdoses which are not reported. As someone who currently works as a community engagement specialist with a concentration on substance use I have been witness to the substance use crisis and how it has plagued impoverished communities. I have seen how the lack of support to effectively address addiction has created a crisis within these areas. This poster is an opportunity for me to explore the data and research that has been completed thus far on this issue. My aim is to shed light on the growing addiction problem and how this is not being addressed within impoverished communities.