



Carolyn & Norwood
Thomas
13TH ANNUAL
UNDERGRADUATE
RESEARCH & CREATIVITY EXPO
April 4, 2019



**13th Annual
Carolyn & Norwood Thomas
Undergraduate Research
& Creativity Expo**

April 4, 2019



UNC GREENSBORO

Undergraduate
Research, Scholarship
and Creativity Office

Elliott University Center



UNC GREENSBORO

Undergraduate Research, Scholarship *and* Creativity Office

utlc.uncg.edu/ursco

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**URSCO is a unit within the
University Teaching and Learning Commons**



UNC
GREENSBORO

Undergraduate
Research, Scholarship
and Creativity Office

University Teaching and Learning Commons
130 Shaw Hall
Greensboro, NC 27402-6170
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April 4, 2019

Dear Students, Colleagues, and Guests,

I would like to welcome you to the 13th *Annual Carolyn and Norwood Thomas Undergraduate Research and Creativity Expo*. We are pleased to include 203 presentations by more than 245 students, working with 111 mentors, and representing 42 academic departments/programs.

The ***Undergraduate Research, Scholarship and Creativity Office (URSCO)*** is dedicated to promoting and supporting student success through mentored undergraduate research, creative inquiry and other scholarly experiences for the UNCG community. The URSCO is also dedicated to helping faculty become increasingly effective with mentoring undergraduate research and integrating research skills into courses and curricula. These experiences can occur in many ways, including co- or extracurricular projects involving one or more students mentored by UNCG faculty. Scholarship is achieved by using the tools of an academic discipline to answer questions that enhance knowledge and understanding. We seek to highlight the diversity of disciplinary scholarship for and through our students in order to help cultivate a culture of life-long learning.

The URSCO offers financial assistance to promote faculty-mentored student scholarship and creativity. This academic year, we have provided ***travel assistance*** to more than 55 students to present the results of their inquiry at local, regional and national meetings. We have also provided support for 89 ***Undergraduate Research and Creativity Awards (URCA)***, of which 28 were part of the ***Globally Engaged URCA*** program and 7 were part of the ***Community Based URCA*** program. Finally, 4 students participated in the ***Artists in Residence*** program, in partnership with the *Lloyd International Honors College* and the *College of Visual and Performing Arts*.

Today is a day to celebrate your scholarly accomplishments. I would like to thank all students and their faculty mentors for taking the time to share your work with the university community. Many thanks go to the Associate Vice Provost of the University Teaching and Learning Commons, Dr. David Teachout, Vice Chancellor for Research and Economic Development, Dr. Terri Shelton, as well as Provost Dana Dunn, and Chancellor Franklin Gilliam for their unwavering support of the office and their dedication to student success. As always, special thanks go to Mrs. Carolyn Thomas for her generous contributions in support of the Expo and faculty-mentored undergraduate research. I would also like to thank Adrienne Middlebrooks, Kayla Baker, Antonio Powell, Journey Purvis, Marisa Gonzalez and Damon Roberts for their efforts to ensure the success of today's program.

Sincerely,

Lee Phillips, Ph.D.
Director, URSCO

ACCESSIBILITY INFORMATION

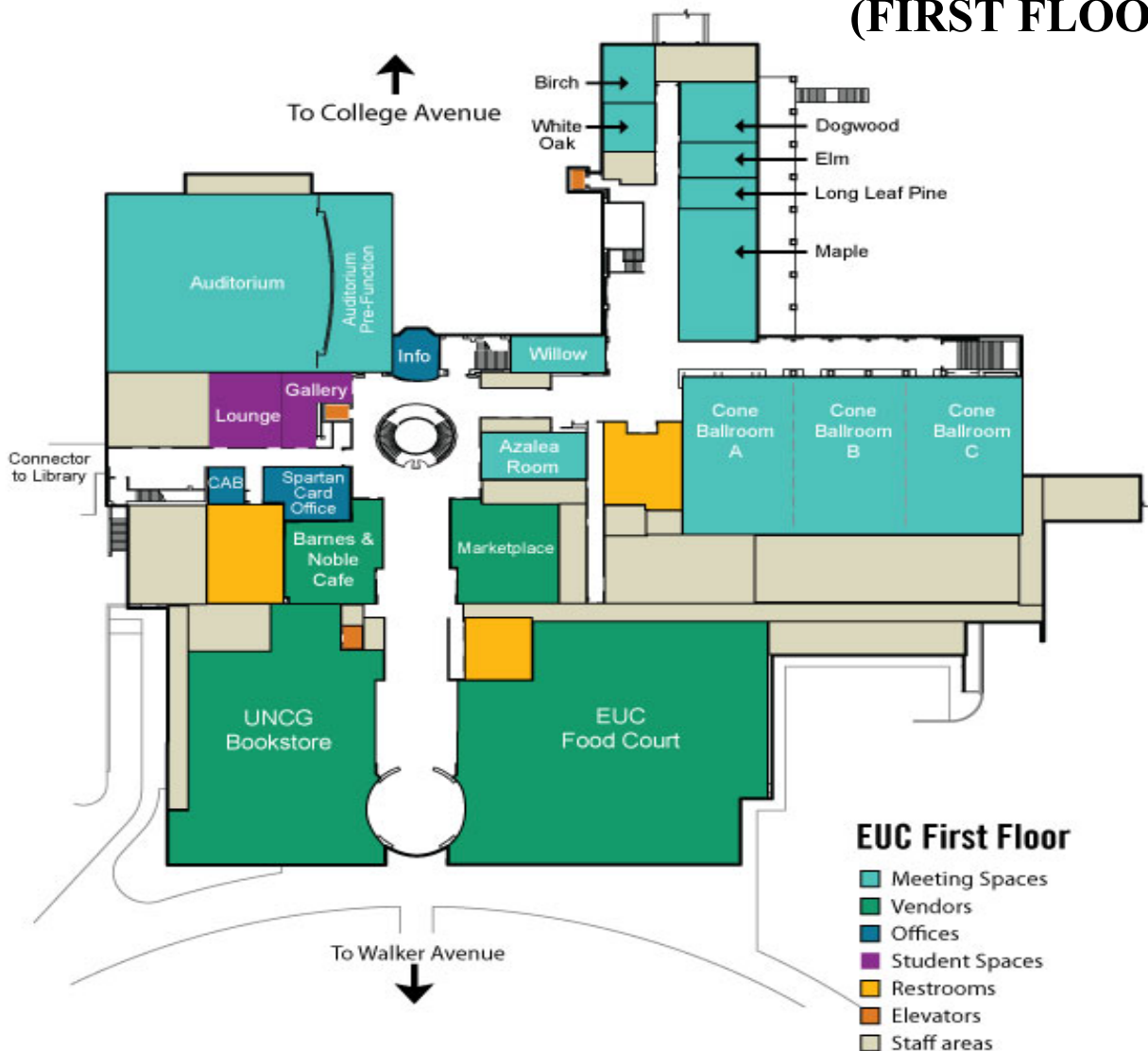
Elliott University Center

- Parking: Walker Avenue Parking Deck is the closest.
- Location in Building: Cone Ballroom (A, B, C).
- Bathrooms: Yes. Two bathrooms on the Ground Floor, three bathrooms on the First Floor, two bathrooms on the Second Floor (see map below).
- Elevators: Yes, two.

Entering UNCG Elliott University Center from Walker Avenue Parking Deck (507 Stirling St, Greensboro, NC 27412)

- Take the Stirling Street exit out of the Parking Deck.
- Walk across Stirling Street to the EUC building (next to the Library Tower)
- Enter building and walk straight toward the information desk.
- Make a right and the EXPO will be straight ahead.

MAP OF EUC (FIRST FLOOR)



SCHEDULE AT A GLANCE

13th Annual Carolyn & Norwood Thomas Undergraduate Research & Creativity Expo

Elliott University Center
The University of North Carolina at Greensboro

April 4, 2019

Registration

8:30 am Pre-function Area - Cone Ballroom

Welcoming Remarks

9:10 am Cone Ballroom

Performances

Noon Cone Ballroom

Oral Presentations

	<i>Arts</i>	<i>Education, Behavioral and Social Sciences</i>	<i>Humanities</i>	<i>Mathematics, Life and Physical Sciences</i>
9:30-10:45	Maple	Dogwood		
10:45-11:45				Dogwood
<i>Noon-1:00</i>	~ go to the Cone Ballroom for <i>Performances</i> ~			
1:00-1:48	Maple		Azalea	Dogwood
2:00-2:48		Dogwood	Azalea	

Poster Presentations

9:30-11:45	Morning Sessions	Cone Ballroom
<i>Noon-1:00</i>	~ go to the Cone Ballroom for <i>Performances</i> ~	
1:00-2:55	Afternoon Sessions	Cone Ballroom

9:30 and 2:30

Appetizers and Beverages will be available in the Cone Ballroom



13TH ANNUAL CAROLYN & NORWOOD THOMAS UNDERGRADUATE RESEARCH & CREATIVITY EXPO

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CAROLYN AND NORWOOD THOMAS

Carolyn Styron Thomas graduated from Woman's College, now UNCG, in 1954 with a bachelor's degree in business. She is very committed to the success of her alma mater and believes strongly in the value of education. "The experience of obtaining my college degree at Woman's College gave me confidence throughout my life to face challenges, raise my family and serve my church and community, all leading to a very rewarding life," says Mrs. Thomas. To express their appreciation for Carolyn's education, the Thomases established an endowed fund in 1996 to support undergraduate and faculty research.

Mrs. Thomas has served on the board of directors for the UNCG Alumni Association and, most recently, the UNCG Board of Visitors. She is a member of the Harriet Elliott Society at UNCG. She has also been involved in numerous organizations in her hometown of Durham, NC, including the Junior League, the United Arts Council and the Methodist Retirement Home.

Her husband, the late Norwood A. Thomas, Jr., graduated from Duke University in 1955. The Thomases dated in college and were married for 46 years. Mr. Thomas retired from his position as Executive Vice President at Central Carolina Bank after 37 years. He later was a founding partner of the investment firm of Wilbanks, Smith & Thomas Asset Management of Norfolk, Virginia, where he worked for more than 10 years. Mr. Thomas was very active in community affairs in the Thomas' hometown of Durham.

2019 Thomas Undergraduate Research Mentor Award



The **2019 Thomas Undergraduate Research Mentor Award** for *Early Career Faculty* goes to Dr. Ramji Bhandari.

Dr. Ramji Bhandari's research is focused on understanding the relationships between environmental chemicals and the inheritance of adverse health conditions. He joined the faculty at UNCG as an Assistant Professor in the Department of Biology in 2016 and has already mentored 15 of our undergraduates. Seven of these students have already graduated, one of which is first author on two recently submitted manuscripts, and two others are co-authors on two additional manuscripts. His students have been actively presenting the results of their inquiry at venues including the NC Academy of Sciences, the Society of Environmental Toxicology and Chemistry, and Developmental Biology. Two of his students are currently pursuing advanced degrees at other institutions. Dr. Bhandari is a committed educator and researcher who seeks to mentor students in both the classroom and laboratory.

In his teaching and research philosophy he stated, "My lab is a family" and goes on to explain that he seeks to develop student confidence, provide research opportunities to learn process, and help cultivate critical thinkers. One student wrote, "Dr. Bhandari gave me the opportunity to learn and grow as a scientist," and the "... experience ... made me an attractive candidate for PhD programs..." Another student wrote, "Dr. Bhandari displays tremendous respect toward his students," and "His confidence in my abilities eliminated self-doubt during the challenges of my project."

Dr. Bhandari's commitment to student learning permeates every aspect of his role at UNCG. He has taken on the challenge of transforming course-work to include experiences that promote an understanding of process and structure that lead to problem solving. Students have been energized in these classes, stating that "he encouraged us to ... ask relevant research questions." Such integration of research and research-skills-development into the curriculum allows him to have an impact on more students than he can possibly mentor in his laboratory.

The Undergraduate Research, Scholarship and Creativity Office at UNCG established this award to recognize faculty members who engage students in projects that contribute to the expansion of knowledge and understanding in their discipline, while demonstrating excellence and innovation in doing so. Dr. Ramji Bhandari has managed to have an incredible impact upon arriving at UNCG, and we are honored to recognize him with the 2019 Thomas Undergraduate Research Mentor Award.

LILIAN NILE UNDERGRADUATE RESEARCH ASSISTANTSHIP

Dr. Terence A. and Julia B. Nile established the Lilian Nile Undergraduate Research Assistantship Fund in honor of Terry's mother with a named fund that will support undergraduate research in the field of Chemistry and Biochemistry at The University of North Carolina at Greensboro.

Dr. Nile's career at UNCG began in 1970 with a teaching internship sponsored by the Woodrow Wilson International Foundation. Following the award of his D.Phil. in Chemistry from the University of Sussex, England, in 1975, Terry returned to UNCG as an Assistant Professor and has subsequently served as Professor, as well as Head of the Department of Chemistry and Biochemistry (1998 – 2005).

Terry's mother, Lilian, was born in 1917 and lived her whole life in Cornwall, England until her passing in 2012. Although she was smart and well-read, the era and family circumstances meant that she never had the opportunity to go on to high school or further education. This was something she regretted for the rest of her life and, as a result, was determined that her only child would have the very best education possible. In earlier years she visited UNCG several times and took pride in all of Terry's accomplishments.

Terry has always focused on both teaching and research, as he has a gift for both. He has introduced hundreds of students to the world of research in Chemistry, the majority of them undergraduates. He is beloved by his students and research assistants, many of whom credit him with instilling in them their love of research, introducing them to careers in research and/or higher education or jump-starting their careers in industry. Terry's accomplishments are many, and include the UNCG Teaching Excellence Award (1978) and the University of North Carolina Board of Governors Teaching Excellence Award (1996).

The Lilian Nile Undergraduate Research Assistantship Fund is a perfect legacy in that Terry is a proponent of undergraduate research and has positively impacted the lives of so many budding chemists through the years.

This year, the Assistantship was awarded to **Jarrold Stanley**, an undergraduate student majoring in Chemistry. He has extensive interest in drug development and intellectual patent law. He finds organo-metallic chemistry to be the best and joined the Croatt group Summer of 2016.



SCHEDULE OF ORAL PRESENTATIONS

(BY STUDENT NAME)

Student Presenter(s)	1 st Student's Major	Title	Time	Room
Yathrip Abdelgadir	Religious Studies	Racialization of Religion: Islamophobia in the African American Community	1:36-1:48	Azalea
Honora Ankong	English	"When the Masquerade Comes" A chapbook by Honora Ankong	2:24-2:36	Azalea
Meagan Bess	Communication Sciences and Disorders	Bilingualism: Is It or Is It Not A Risk Factor for Stuttering?	9:54-10:06	Dogwood
Celeste Cervantes	Teacher Education and Higher Education	Developing a Sustainable Assessment Association in Mexico for Indigenous Language Assessments	2:12-2:24	Dogwood
Sarah Cratt	English	The Statue of Peace: catalyst for outrage and memory	2:36-2:48	Azalea
Ayesha Ejaz	Chemistry	Simulating a Microchip-based Stark Guide and Decelerator using Simion	11:09-11:21	Dogwood
Kaylee Faw	Political Science	Social Class and Voting Behavior: 21 st Century Changes	1:48-2:00	Azalea
Brianna Ferraro	Specialized Education Services	From Accommodation to Invitation: Roles Communication Centers Play in Acknowledging and Empowering People with Disabilities	9:30-9:42	Dogwood
Julian Gooch	Nursing	Effects of Nurse-Driven Quality Improvement Measures on Failure to Rescue for Patients with Sepsis	2:24-2:36	Dogwood
Malanah Hobgood	Art History	80s Aesthetic Impact on Claymation for Television	1:12-1:24	Maple
Sharneisha Joyner	Music	Classical Music Isn't Dead: How to Format an Old Tradition for the Current Times	9:42-9:54	Maple
Sharneisha Joyner	Music	From Beginning to End - The Journey of a Written Work of Music	9:54-10:06	Maple
Manead Khin	Chemistry	Shelf-life Study of Goldenseal	1:00-1:12	Dogwood
Aidan Lytle	Physics and Astronomy	Be Phenomenon in Local Star v Geminorum	10:57-11:09	Dogwood

SCHEDULE OF ORAL PRESENTATIONS

(BY STUDENT NAME)

Student Presenter(s)	1 st Student's Major	Title	Time	Room
Syvanna Makin	Nursing	Assisting NICU Nurses with Compassion Fatigue Resulting from Caring for Infants with Neonatal Abstinence Syndrome	2:48-3:00	Dogwood
Kylie Mask, Abigail Wilson, and Haley Brantley	Theatre	Sensing the Self: Tools for a Fully Connected Life	1:36-1:48	Maple
Sarah Maske	History	A Place to Call Their Own: North Carolina College for Women's Y.W.C.A. Hut and Campus View on Gender Roles	1:00-1:12	Azalea
Casey Melton	Classical Studies	Catiline: A Madman or A Man Made Mad?	1:12-1:24	Azalea
April Miller	Arts	From 3D Modeling to Robotic Stone Carving	1:00-1:12	Maple
Alexandra Pardo and Kathy Ly	Classical Studies	The Prevalence of the Color Blue during the Minoan Bronze Age in Greece	1:24-1:36	Azalea
Madeline Rees	Psychology	Factors Controlling the Mechanisms of Eating Behavior in Mammals	2:00-2:12	Dogwood
Alexandra Romero	Art History	"Primitive": The New Dirty Word in Modern Art?	9:30-9:42	Maple
Megan Saunders	Anthropology	Taphonomic analysis of the excavated faunal assemblage from BK East at Olduvai Gorge, Tanzania	1:24-1:36	Dogwood
Andrew Savage	Music Composition	Coruscate for Chamber Orchestra	1:24-1:36	Maple
Kristen Scheckelhoff and Ayesha Ejaz	Mathematics & Statistics	Balancing the cost of infection: The effect of clean needle use on the spread of hepatitis C among injecting drug users	1:12-1:24	Dogwood
Ali Shahbandi	Chemistry and Biochemistry	Bacterial Species Identification by Metabolite Profiling Via Ultra High-Performance Liquid Chromatography Coupled to High-Resolution Mass Spectrometry	11:21-11:33	Dogwood

SCHEDULE OF ORAL PRESENTATIONS

(BY STUDENT NAME)

Student Presenter(s)	1st Student's Major	Title	Time	Room
Arielle Smallwood, J. Adams, S. Baggett, and Z. Blackmon-Tate	Media Studies	The Making of Sagittarius	2:00-2:12	Azalea
Brandon Smith	Nursing	Selected Prevention Methods for Hyperglycemia in Community Dwelling Adults	2:36-2:48	Dogwood
Nicholas Smuthwaite	English	To Whom It May Concern: Poems	2:12-2:24	Azalea
Anastasia Temkina	Anthropology and Archaeology	Reassessment of Osteology and Bioarchaeology of the Tutu site	10:45-10:57	Dogwood
Autumn Yates	Social Work	Building a Compassionate Community: Substance Use, Stigma, and Harm Reduction	9:42-9:54	Dogwood
Xuechen Zhu and Austin Miller	Mathematics and Statistics	A New Way to Think of Outliers: Robust Trending Filtering and Outlier Detection	11:33-11:45	Dogwood

SCHEDULE OF ORAL PRESENTATIONS

(BY ROOM AND TIME)

MAPLE ROOM

Arts			
Time	Student Presenter(s)	Major	Title
9:30-9:42	Alexandra Romero	Art History	"Primitive": The New Dirty Word in Modern Art?
9:42-9:54	Sharneisha Joyner	Music	Classical Music Isn't Dead: How to Format an Old Tradition for the Current Times
9:54-10:06	Sharneisha Joyner	Music	From Beginning to End - The Journey of a Written Work of Music
1:00-1:12	April Miller	Arts	From 3D Modeling to Robotic Stone Carving
1:12-1:24	Malanah Hobgood	Art History	80s Aesthetic Impact on Claymation for Television
1:24-1:36	Andrew Savage	Music Composition	Coruscate for Chamber Orchestra
1:36-1:48	Kylie Mask, Abigail Wilson, and Haley Brantley	Theatre	Sensing the Self: Tools for a Fully Connected Life

SCHEDULE OF ORAL PRESENTATIONS

(BY ROOM AND TIME)

DOGWOOD ROOM

Education, Behavioral and Social Sciences			
Time	Student Presenter	Major	Title
9:30-9:42	Brianna Ferraro	Specialized Education Services	From Accommodation to Invitation: Roles Communication Centers Play in Acknowledging and Empowering People with Disabilities
9:42-9:54	Autumn Yates	Social Work	Building a Compassionate Community: Substance Use, Stigma, and Harm Reduction
9:54-10:06	Meagan Bess	Communication Sciences and Disorders	Bilingualism: Is It or Is It Not A Risk Factor For Stuttering?
2:00-2:12	Madeline Rees	Psychology	Factors Controlling the Mechanisms of Eating Behavior in Mammals
2:12-2:24	Celeste Cervantes	Teacher Education and Higher Education	Developing a Sustainable Assessment Association in Mexico for Indigenous Language Assessments
2:24-2:36	Julian Gooch	Nursing	Effects of Nurse-Driven Quality Improvement Measures on Failure to Rescue for Patients with Sepsis
2:36-2:48	Brandon Smith	Nursing	Selected Prevention Methods for Hyperglycemia in Community Dwelling Adults
2:48-3:00	Syvanna Makin	Nursing	Assisting NICU Nurses with Compassion Fatigue Resulting from Caring for Infants with Neonatal Abstinence Syndrome

SCHEDULE OF ORAL PRESENTATIONS

(BY ROOM AND TIME)

AZALEA ROOM

Humanities			
Time	Student Presenter(s)	Student's Major	Title
1:00-1:12	Sarah Maske	History	A Place to Call Their Own: North Carolina College for Women's Y.W.C.A. Hut and Campus View on Gender Roles
1:12-1:24	Casey Melton	Classical Studies	Catiline: A Madman or A Man Made Mad?
1:24-1:36	Alexandra Pardo and Kathy Ly	Classical Studies	The Prevalence of the Color Blue during the Minoan Bronze Age in Greece
1:36-1:48	Yathrip Abdelgadir	Religious Studies	Racialization of Religion: Islamophobia in the African American Community
1:48-2:00	Kaylee Faw	Political Science	Social Class and Voting Behavior: 21st Century Changes
2:00-2:12	Arielle Smallwood, Jamira Adams, Steven Baggett, and Zariyah Blackmon-Tate	Media Studies	The Making of Sagittarius
2:12-2:24	Nicholas Smuthwaite	English	To Whom It May Concern: Poems
2:24-2:36	Honora Ankong	English	"When the Masquerade Comes" A chapbook by Honora Ankong
2:36-2:48	Sarah Cratt	English	The Statue of Peace: catalyst for outrage and memory

SCHEDULE OF ORAL PRESENTATIONS

(BY ROOM AND TIME)

DOGWOOD ROOM

Mathematics, Life, and Physical Sciences			
Time	Student Presenter(s)	1st Student's Major	Title
10:45-10:57	Anastasia Temkina	Anthropology and Archaeology	Reassessment of Osteology and Bioarchaeology of the Tutu site
10:57-11:09	Aidan Lytle	Physics and Astronomy	Be Phenomenon in Local Star v Geminorum
11:09-11:21	Ayesha Ejaz	Chemistry	Simulating a Microchip-based Stark Guide and Decelerator using Simion
11:21-11:33	Ali Shahbandi	Chemistry and Biochemistry	Bacterial Species Identification by Metabolite Profiling Via Ultra High-Performance Liquid Chromatography Coupled to High-Resolution Mass Spectrometry
11:33-11:45	Xuechen Zhu and Austin Miller	Mathematics and Statistics	A New Way to Think of Outliers: Robust Trending Filtering and Outlier Detection
1:00-1:12	Manead Khin	Chemistry	Shelf-life Study of Goldenseal
1:12-1:24	Kristen Scheckelhoff and Ayesha Ejaz	Mathematics & Statistics	Balancing the cost of infection: The effect of clean needle use on the spread of hepatitis C among injecting drug users
1:24-1:36	Megan Saunders	Anthropology	Taphonomic analysis of the excavated faunal assemblage from BK East at Olduvai Gorge, Tanzania

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Morning General Session

Poster No.	Student Presenter(s)	1 st Student's Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
M-01	Lydia Bailey, Victoria Borrowdale, & Tyler Grissom	Kinesiology	Tracking Head Trauma in Youth Sports	X			
M-02	Christina Brown	Interior Architecture	Employee Wellness and Productivity in the Workplace	X			
M-03	Morgan Bryant	Interior Architecture	The Ancillary Office: The Effects of Biophilia and Ergonomic Solutions within the Workplace		X		
M-04	Davares Burnett	Psychology	Musical Ability: The Prescribed Drug		X		
M-05	Tabitha Canipe et al.	Biology	Effects of environmentally relevant concentrations of glyphosate on hatching and survival of <i>Artemia salina</i>	X			
M-06	Maria Cateriano Bartet	Biology	Effect of the inactivation of the Myosin IIA Heavy Chain on GLUT4 Translocation during Insulin Stimulation in Adipocytes.	X			
M-07	Brittany Charles	Psychology	Relationship Between Mother-Child Conflict and Child Internalizing Behaviors		X		
M-08	Melissa Chicoma	Chemistry	Novel Ligands for Degradable Biopolymer Formation from Renewable Sources		X		
M-09	Laura Clifton	Interior Architecture	The Historic Dimension Series: Launching an Online Student Publication Series		X		

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Presenter(s)	1 st Student's Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
M-10	Alicia Costa-Terryll	Biology	Preliminary Phytolith Analysis at BK East (Middle Bed II, Olduvai Gorge, Tanzania)	X			
M-11	Christopher Cotter	Biology	Investigating the Effects of Peroxiredoxin from <i>Pyrococcus furiosus</i> on Heat Stress Tolerance in Model Tobacco		X		
M-12	Taylor Crawford & Elizabeth Willard	Biology	Does Glyphosate, an Herbicide in Round-Up, affect Human Bone Stem Cells?		X		
M-13	Grace Crowley	Biology	The effects of tall fescue cultivars on dung beetle choice and survival	X			
M-14	Emily Edwards, et al.	Interior Architecture	Community Development	X			
M-15	Melissa Edwards	Nursing	A Test for Everyone: HIV Screening in the Emergency Department	X			
M-16	Vanessa Enoch & Savannah Sommers	Human Development and Family Studies	Trauma and Abuse Experience and Elevated Scalp Hair Cortisol Concentrations Among SE Asian Refugees in the US South	X			
M-17	Victoria Espinoza & Vanessa Enoch	Sociology	Oral Health Disparities Among Montagnard Refugee Community of Guilford County	X			
M-18	Kiersten Eury	English	Gate City Writers: A community-integrated and holistic approach to writing development	X			
M-19	Elisa Frazier	Kinesiology	The Effects of Acute Cycling on Cognitive, Neurocognitive, and Academic Achievement in Children Diagnosed with ADHD		X		
M-20	Emily Gaines, & Lindsey Flowers	Consumer Apparel & Retail Studies	Designs in Plus-Size Children	X			

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Presenter(s)	1 st Student's Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
M-21	Aran Garnett-Deakin, Kaicee Beale, Bailey Woodruff, & Rachel Fuqua	Human Development and Family Studies	A Meta-Analytic Review of the Associations between Marital Dissolution and Anxiety		X		
M-22	Claire Griffith	Biology	Cellular uptake of Carbon Nanodot in THP-1 Human Monocytes	X			
M-23	Jennifer Gubbins & Holly Lail	Specialized Education Services	A preliminary study of knowledge transfer and application of functional behavior assessments and behavior intervention plans in K-12 classrooms	X			
M-24	Kestyn Harris & Andrea Yuly	Psychology	Gender Differences in Reported Affiliation and Liking for Gender Ambiguous Individuals		X		
M-25	Lindsay House	Physics & Astronomy	Can Grandeur Overcome Insecurity? Seeking Specific Astronomy Course Experiences That Can Diminish Stereotype Threat and Enhance Students' Self-Efficacy		X		
M-26	Tyson Howlett, et al.	Interior Architecture	Millennial Campus		X		
M-27	Caroline Infante Arismendi	Psychology	Spatial Cueing Effects on Memory for Event Changes		X		
M-28	Oluwaseyi Isijola	Public Health Education	Do Health Behavior Relationships with Depression Symptoms Vary across Racial Groups?	X			
M-29	Trey Johnson & Patrick Macarilay	Chemistry	Temperature dependence studies of chloride and nitrate function in the light-induced catalytic production of oxygen by Photosystem II during photosynthesis		X		
M-30	Zari Johnson	Nutrition	The Fat and Protein Composition of Donor Human Milk	X			

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Presenter(s)	1 st Student's Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
M-31	Melissa Lore	Psychology	Foster Care Alumni Success in Higher Education	X			
M-32	Kennedy Maeder	Biology	The impacts of grazing on North Carolina Longleaf Pine Savanna grasses	X			
M-33	Janae Massey	Psychology	Preparation of Bias- Are Children Understanding Their Parents?	X			
M-34	Kala McKoy	Biology	Transgenic tobacco expressing Archaea's Superoxide Dismutase enzyme for stress tolerance		X		
M-35	Breana Melvin	Communication Sciences & Disorders	Traumatic brain injury stemming from intimate partner violence: The occurrence and lasting effects.	X			
M-36	Faye Milford, et al.	Interior Architecture	The Triad Nepalese Community Center Renovation		X		
M-37	Chioma Onokalah	Chemistry	Synthesis of novel chiral carbene ligands with potentially chelating substituents		X		
M-38	Ryan Parks	Mathematics & Statistics	A Binary Unrelated Question RRT Model Accounting for Untruthful Responding		X		
M-39	Kyle Pontieri	Archaeology	Neotaphonomy of a "common amenity" on the grasslands of the Ngorongoro Conservation Area, Tanzania	X			
M-40	LaTraikeyonia Pridgen	Nursing	Vitamin D Deficiency affects on mortality on critically ill pediatric patients	X			
M-41	Michael Puerto	Psychology	"Are WE connecting" <i>We-Talk</i> in young adult text message conversations with parents, peers and romantic partners	X			

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Presenter(s)	1 st Student's Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
M-42	Olivia Redd	Public Health Education	Identifying community-clinical linkages to promote physical activity among Latinos at risk of diabetes		X		
M-43	Alexis Rice	Psychology	Differences in College Students' Exercise Identity, Self-Efficacy and Physical Activity Based on Minority Status		X		
M-44	Rebecca Rice	Kinesiology	Changing in Identity across the Transition out of College Athletics		X		
M-45	LaShunta Rodgers	Kinesiology, Biology	Experimental Evolution of Magnetite Nanoparticle Resistance in <i>Escherichia coli</i>		X		
M-46	Ekaterina Ellyce San Pedro	Biology	Effect of the Regulatory Light Chain of MyosinII on Glut 4 Translocation to the Plasma Membrane	X			
M-47	Tamika Smith, Kenya Downing, & Phillipian Flowe	Psychology	Parental Involvement in African American Children Kinship Care Families: The Pilot Study		X		
M-48	Aika Ueno	Kinesiology	Acute exercise and memory in older adults (EMO)		X		
M-49	Ariana Watkins	Psychology	Can You See Me: Student-Faculty Interactions		X		

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Afternoon General Session

Poster No.	Student Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
A-01	Andrew Ainsworth	Sociology	Teachers, Students, and The Columbine Problem: Informing Pedagogy and Classroom Practices in the Age of American Gun Culture			X	
A-02	Itzel Avila Ramirez	Psychology	Do Ethnic-Racial Socialization Messages Manifest in Technological Communication Between Romantic Partners of Latinx Heritage?			X	
A-03	Michael Bell	Classical Studies	Control and Production of Apicultural Commodities on the Island of Kea				X
A-04	Gia Born	Public Health Education	Perinatal Opioid Use: Examining Best Practices in Service Provision"				X
A-05	Maura Bourne	Psychology	Low Resistance to Peer Influence Increases Risk Taking in Sensation Seeking Youth				X
A-06	Quashawn Chadwick	Biology	Transgenic Tobacco with Archaeal Heat Stress Resistance			X	
A-07	Nicholas Chambers	Biochemistry	Synthesis of Quaternary Chiral Centers in the Spirocyclic Lactone Motif Using Asymmetric Brønsted Acid Catalysis			X	
A-08	Amanda Chase	Anthropology	Use-Wear Analysis of the Middle Horizon			X	
A-09	Kimberly Colon	Psychology	Stress Appraisals: Personal and Group Discrimination			X	
A-10	Kali Cox	Biology	The impact that Apis Mellifera's body size has on the number of ovarioles present/produced in the ovaries				X

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
A-11	Bret Dang	History	Negotiating Imperial Legitimacy and Authority in Ottoman Cilicia, 1400-1900 CE				X
A-12	Alexis Davis	Biology	The Oncogenic Epstein-Barr Virus Alters the Expression and Localization of Cellular MNK				X
A-13	Adam Deese	Anthropology	An Open-Access Geodatabase for Paleoanthropology				X
A-14	Lauren Dorn	Kinesiology	Vitamin D Dietary Intake and Serum Vitamin D in Adolescents				X
A-15	Logan Elliot	History, Classical Studies	Going So Far for Love: Alexander and Hephaestion's Hero Cult				X
A-16	Lindsey Flowers	Consumer Apparel & Retail Studies	Using 3D Design in V-Stitcher to Create Plus Size Clothing				X
A-17	Rachel Fuqua, K. Beal, B. Woodruff, & A. Garnett-Deakin	Human Development and Family Studies	The Linkages between Marital Satisfaction and Anxiety: A Meta-Analytic Review				X
A-18	Brittany Gagné	Interior Architecture	Next: Living, Exploring, Growing				X
A-19	Julian Gooch, D. Lee, E. Wayne, L. Pridgen, B. Darnell	Nursing	Rooming-In to Treat Neonatal Abstinence Syndrome			X	
A-20	Karena Graves	Arts	Digital Stone Project: Sculpting with Robots in Italy			X	

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
A-21	Nima Hajhashemi	Biology	The cost of autogeny in sandflies: does egg production without blood-meal reduces fitness?				X
A-22	Meghan Harduk	Kinesiology	Co-occurrence of activity-related behaviors and fluid consumption among African American college freshmen				X
A-23	Jonathan Harris	Sociology	Analyzing Inequalities using Quantitative Data Analysis: Aid to and from family members by Immigrants in College			X	
A-24	Keia Harris	Public Health Education	Tobacco Ads: What Messages Are They Sending in Minority Communities?			X	
A-25	Rachel Hodges	Biochemistry	Synthesis of Photodynamic Therapy Ligands			X	
A-26	Cameron Hoyle	Psychology	Unveiling 'the quit' journey: Ecological barriers and facilitators to smoking cessation on a college campus.			X	
A-27	Han Jiang	Chemistry	Method Development for Measuring Stress Level Using LC-MS			X	
A-28	Dianna Kidd	Archaeology	Visualizing Guilford Courthouse's Revolutionary Landscape Through Historical Archaeological Research				X
A-29	Michael Kress	Kinesiology	Changes in Joint Angles from Virtual Reality Training Correlates with Foot Clearance Metrics				X
A-30	Dre'Quan Lee	Nursing	Preventing the Transmission of Methicillin-Resistant Staphylococcus Aureus in the Hospital Setting: Perspectives From Health Care Workers			X	
A-31	Shayla Lee	Political Science	The 311 System as a Civic Engagement and Citizen Satisfaction Tool for Municipalities: The Case of			X	

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
			the '311 City Link' Program in Winston-Salem, NC				
A-32	Margaret Leone	Classical Studies	Representation of Women Throughout Material Evidence in Caesarea Maritima				X
A-33	Jacob Lipps	Specialized Education Services	American Sign Language Sociolinguistic and Strategic Performance Assessment (ASLSSPA): A Pilot Study			X	
A-34	Kayla Martin	Nursing	The Lived Experience of Adults with Congenital Heart Disease				X
A-35	Esther Mununga	Languages, Literatures and Cultures, Psychology	Cultural Perspectives on Adolescent Mental Health for Congolese Families in Two Western Countries			X	
A-36	Kathryn Murphy	Psychology	<i>[Insert School Name]</i>			X	
A-37	Hieu Nguyen	Biology	The role of organic matters extracts and conspecific eggs in effecting <i>Phlebotomus papatasi</i> sand flies egg hatching			X	
A-38	Biana Okhaifor	Biology	Making a Neural Circuit Work Without Oxygen			X	
A-39	Lunda Onesias & Valerie Nkansah	Psychology	Transglobal Refugee Living Experiences: Post-resettlement Housing Conditions and Concerns of Congolese Mothers with Children and Families				X
A-40	Jamie Phelps	Environmental and Sustainability Studies, Biology	Nitrogen levels for successful Wiregrass Restoration			X	
A-41	Courtney Phillips	Nursing	Nurse Practitioner Knowledge and Use of Complementary and Alternative Therapies for the Management of Chronic Pain: A Pilot Study				X

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
A-42	Juan Quiroa	Mathematics & Statistics	Enumeration of Ramification Polygons of Degree p^2				X
A-43	Sarah Ragab	Biology	The Transfer of Global Applications of Sport for Positive Youth Development				X
A-44	Alexandra Smith	Psychology	Emotion Regulation as a Protective Factor for Surgent Children with Social Difficulties				X
A-45	Elyse Smith	Music Education	Themes of Metacognition during Teacher Self- Reflections of Preservice Music Educators				X
A-46	Megan Toler	Biology	Analysis of Phototropism and Gravitropism in <i>Arabidopsis thaliana</i> in a Ground-based Control Experiment			X	
A-47	Zachary Tuomey	Anthropology	500 Years of Struggle: Miners, the State and Mining in Sonora, Mexico				X
A-48	David von Dohlen	Chemistry	Lipophilicity Determination for New Photodynamic Therapy Agents			X	
A-49	Christian Walters	Geography	Mapping the Correlates of Alcoholic Dispensaries and Heavy and Binge Drinking in Guilford County				X
A-50	Hongzhou Wang	Chemistry	Towards High Resolution Ion Mobility Mass Spectrometry			X	
A-51	Sarah White	Nutrition	Scoping Review of Implicit Bias Curriculum in US Dietetic Undergraduate Programs			X	
A-52	Emilee Witte	Anthropology	Using Portable X-Ray Fluorescence to Test Andean Ceramics			X	

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Emerging Scholars (ES) Morning Session

Poster No.	Student Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
ES-M01	Lael Beatty	Kinesiology	How Physical Therapy Addresses Chronic Musculoskeletal Pain	X			
ES-M02	Nari Beatty	Nutrition	Managing Fibroid Tumors Through Nutritional Science	X			
ES-M03	Brianna Blackmore	Kinesiology	Discrimination against Natural Hair In The Workforce	X			
ES-M04	Faith Brown	Family and Community Health	Perceptions of Private vs. Public High Schools Among College Freshmen		X		
ES-M05	Viola Byass	Psychology	Exploring How to Overcome the Hesitancy to Begin New Ventures		X		
ES-M06	Kayla Coe	Economics	LGBTQ travelers visiting Japan: How best to navigate evolving Japanese LGBTQ Culture	X			
ES-M07	Autumn Davis	Nutrition	Social Media Health Trends: Healthy?		X		
ES-M08	Nicholas DeSimone	Media Studies	A Better Look at the ADA Laws for the Vision Impaired	X			
ES-M09	Belle Downing	Community and Therapeutic Recreation	How Recreation Therapy Can Improve the Quality of Lives within Human Trafficking Survivors	X			
ES-M10	Karen Espinoza-Argueta	Marketing, Entrepreneurship, Hospitality and Tourism	Sleep and Productivity	X			
ES-M11	Reginald Glenn	Psychology	Games and Behavior	X			

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
ES-M12	Michael Grant	Kinesiology	Acute and Chronic Hormonal Adaptations to Exercise	X			
ES-M13	Destiny Hayes	Public Health Education	The Benefits of Natural Medicine Compared to Pharmaceutical Options	X			
ES-M14	Midori Hill	Computer Science	The Blurred Lines of Cultural Appropriation	X			
ES-M15	Kailah Jones	Management	A Tragic Love Story: Uncovering the Beauty of Black Hair	X			
ES-M16	Ivan McAgy	Classical Studies	Going Under the Knife: Rewiring Our Perception on Cosmetic Surgery		X		
ES-M17	Taylor McMahon	Psychology	Their Rights Matter, Too: Violence & Discrimination Against Sex Workers		X		
ES-M18	Maniya McNeal	Communication Studies	Disconnecting devices: Connecting with the five senses to communicate with your environment		X		
ES-M19	Tennah Murphy	Languages, Literatures, and Cultures-German Studies	Analysing the effect of idealized reception of characters on relationships between people to convey the importance of looking at another holistically.	X			
ES-M20	Aby Musa	Pre-nursing	Depression in African Americans		X		
ES-M21	Lauren Nelson	Public Health Education	Do Residential Learning Communities Support Student Engagement in Difficult Conversations about Differences?		X		
ES-M22	Malaika Nzau	Media Studies	Black, but Not Too Black: Black Women and Colorism Within Television and Film	X			

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
ES-M23	Ryan Peace	Political Science	The Effects of Child Sexual Abuse on Black Men		X		
ES-M24	Ahmad Romero	Biology	The reasons why standardized testing is failing us		X		
ES-M25	Rosa Santana-Cruz	Political Science	Importance of Climate Change	X			
ES-M26	Corey Shields	History	How Mass Incarceration Effects the Development of a Child	X			
ES-M27	Jocelyn Steslicke	Arts	The Media's Influence on Romantic Love		X		
ES-M28	Mikayla Taylor	Marketing, Entrepreneurship, Hospitality and Tourism	The Truths about Multitasking		X		
ES-M29	CaTerra Townsend	Peace and Conflict Studies	An Argument of the Systematic Factors along with Personal Factors that Leaders to a Higher Risk in Homelessness in the Trans People of Color Community	X			
ES-M30	Victoria Treadway	Management	Is your college education a scam?		X		
ES-M31	Aidan Ward	Marketing, Entrepreneurship, Hospitality and Tourism	Cat Café's are Good for People but Not the Cats		X		

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Emerging Scholars (ES) Afternoon Session

Poster No.	Student(s) Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
ES-A01	Barry Abdoul	Computer Science	Virtual Reality is a developing industry that will change our lives in the future for better or worse.				X
ES-A02	Chimeri Anazia	Kinesiology	A Brief History of Physical Therapy and the Methods Used to Treat Pain			X	
ES-A03	Noor Ayesh	Psychology	Solutions to the Great Pacific Garbage Patch				X
ES-A04	Belicia Badibanga	Public Health Education	Racism and Its Effects on Male Minorities in American Prison Systems			X	
ES-A05	Brandon Banner	Computer Science	Where Do Stereotypes Originate?				X
ES-A06	Axel Battista	English	The Othering Effect in Regards to Transgender Students at the UNCG and Manchester Metropolitan Universtiy				X
ES-A07	Ashley Bonner	Art Education	Creativity in the classroom and its contribution to employability				X
ES-A08	Dominque Bradley	Biology	A Fight for Women to Peacefully Breastfeed In Public			X	
ES-A09	Sydney Chamberlain	Biology	Cannibalism in Food Culture: Why Prions Need Regulation				X
ES-A10	Kendall Church	Psychology	The transition from Early College to a University			X	
ES-A11	Danaye Connor	Biology	The lack of representation for women in STEM courses is due to the bias in the STEM community				X

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student(s) Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
ES-A12	Isabell Cooper	Environmental and Sustainability Studies	An Interactive Map of Holistic Veterinary Medicine				X
ES-A13	Kaiden Davis	Arts	The Exploration of Art Theft on Social Media			X	
ES-A14	Daijah Dixon	Human Development and Family Studies	How Child Corporal Punishment Negatively Effects People Long-Term				X
ES-A15	Gabriel Hastings	Media Studies	LGBT World Cinema			X	
ES-A16	Alena Jones	Chemistry	Progeria-a disease hidden in the shadows				X
ES-A17	Jayne Lawrence	Psychology	The Social Effects of Depression on Black Women			X	
ES-A18	Daniel Lopez	Accounting & Finance	Autism in Pop-Culture			X	
ES-A19	De'Viona Lowery	Consumer Apparel & Retail Studies	Cancel Culture: Destroyer of Celebrities but How Does it Affect You?			X	
ES-A20	Tarja McDonald	Biology	Better for Grieving Dogs			X	
ES-A21	Timothy McWilliams	Psychology	How a Dedicated Career in the Competitive Fighting Game Scene Can Positively Affect Your Life				X
ES-A22	Christian Moss	Computer Science	The Ineffectiveness of a Four-Year University			X	
ES-A23	Jana Nolen	Human Development and Family Studies	Racism in the Beauty Industry				X
ES-A24	Calvin Patton	Management	Health Implications Associated with the use of Social Media				X

SCHEDULE OF POSTER PRESENTATIONS

(BY LAST NAME)

****ALL POSTER PRESENTATIONS WILL BE IN THE CONE BALLROOM****

Poster No.	Student(s) Name	Student Major	Title of Presentation	9:30-10:30	10:45-11:45	1:00-1:55	2:00-2:55
ES-A25	Za'Darius Phifer	Biology	The evolution of managing and financing healthcare			X	
ES-A26	Alec Schachner	Political Science	Sentencing and How it Affects Defendants Differently Based on their Appearance in the Courtroom			X	
ES-A27	Josi Sellers	Arts	How Studying Animals' Perception Will Improve Our Treatment of Them			X	
ES-A28	Bailey Smith	Sociology	The Origin of Violent and Criminal Behavior in Adolescence				X
ES-A29	Shawn Smith	History	Coping with Family Relocation and Social Integration as an Adolescent				X
ES-A30	Emma Stevens	Art Education	Effects of Art Education				X
ES-A31	Dynah Sutton	Biology	The Benefits of ASMR Videos			X	
ES-A32	Jerry Thornton	Media Studies	Toxic Masculinity A Misnomer?				X
ES-A33	Ally Whitman	Arts	Picasso's African Influence			X	
ES-A34	Barrett Woodruff	Classical Studies	What Do the Waterways of Ancient Rome Have to do With Us?				X
ES-A35	Shanelle Ypema	Nutrition	Nutritional Therapy in Managing the Symptoms of IBD			X	

~ M = Morning, A = Afternoon, ES=Emerging Scholar ~
 ~ Posters will be up for the duration of the Shaded Times. ~
 ~ Authors will be present during the time marked "X". ~

SCHEDULE OF PERFORMANCES

**** ALL PERFORMANCES WILL BE IN THE CONE BALLROOM ****

Time	Student Presenter(s)	1st Student's Major	Title
12:00 – 12:15	Taylor Barlow	Music	The Bass Clarinet Liberated: The Expanded Textural Universe of Eric Mandat's "Chips Off the Ol' Block"
12:15 – 12:30	Kaitlyn Chaplin, Ariana Chavez, and Briana Rogers	Communication Studies	There's No Place Like Home Screen
12:30 – 12:45	Amari Jones	Dance	Two Warring Ideals in One Dark Body
12:45 – 1:00	Michael Newman, Jordan Speas, Steve Williams, Auntais Faulkner	Theatre	MAMA (Mindfulness Arts Mindfulness Action)

ABSTRACTS

1. **Racialization of Religion: Islamophobia in the African-American Community**
Student Author(s): Yathrip Abdelgadir, Senior (Religious Studies, Political Science)
Faculty Mentor(s): Alyssa Gabbay (Religious Studies)

When Martin Luther King Junior wrote his famous Letter from Birmingham Jail in 1963, he addressed to his Jewish and Christian brothers. Missing was a mention of his Muslim brothers, though he must have been aware of the large population of African American Muslims in the United States and knew of Malcolm X. This omission illustrates a fundamental dynamic of the Civil Rights movement: the marginalization of Black Muslims from the movement. Black Muslims were often seen as militant and, political rather than religious. Why did this marginalization exist? What does this say about the formation of African American identity? (i.e., that at least in this context, it was seen as Christian – or, that Christian African Americans were seen as the “good” Blacks, the lesser of two evils.) What implications did it have for today – and to what degree do the identity markers formed during the Civil Rights movement continue to persist today? Or has Blackness expanded to include Muslims. In this research, I will examine the marginalization of African American Muslims during the Civil Rights and how this has shaped what it means to be Black and Muslim in the United States.

2. **Virtual Reality is a Developing Industry That Will Change Our Lives in the Future for Better or Worse**
Student Author(s): Barry Abdoul, Junior (Computer Science)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

I argue that current virtual reality gaming technology can cause a disillusionment with reality. Games have swept the world and given many individuals the chance to explore different worlds and experience a multitude of things but it has also brought a mixture of disillusionment with reality. Games out on the market currently and older games have allowed players to explore everything from fantasy worlds to the dark regions of space, but with the advancement of VR tech gaming could be taken to an entirely different level with gamers instead of just controlling characters in their games to actually becoming the characters in the games and this is a scary thought. Imagine you plug up your headset and dive into a world where you can slay a dragon with magic or dive to the deepest depths of the ocean. It is possible for you to lose track of time in this world and also possible that you become so attached to the world that when you take off your headset and come back to reality you lose interest in your surroundings and fail to function. I will be analyzing VR tech and the social problems it may bring if fully realized.

3. **Teachers, Students, and the Columbine Problem: Informing Pedagogy and Classroom Practices in the Age of American Gun Culture**
Student Author(s): Andrew Ainsworth, Senior (Sociology)
Faculty Mentor(s): Cindy Dollar (Sociology)

What is at the center of gun violence? Who perpetrates these violent acts? How do these events shape school systems, communities, and the nation overall? Can there ever be a solution to our “Columbine Problem?” In the wake of the continued dialogue on school violence, teachers and students alike can benefit from understanding the systemic, social and political implications of rampage shootings. Are school shooters born, or are they made? Are schools taking the appropriate steps to prevent another Columbine, or is the matter out of their hands entirely? This project seeks to provide not only answers to

ABSTRACTS

these fundamental questions, but resources for educators, parents, students and concerned citizens regarding school security and cultural trends. Paying scrutiny to perpetrator demographics, shifts in school administration, and political responses to this form of violence, the epidemic of school shootings is one that follows stark patterns that can lead to actionable solutions. With a clear understanding of these concepts, communities can act to better ensure the safety of everyone.

4. **A Brief History of Physical Therapy and the Methods Used to Treat Pain**

Student Author(s): Chimeri Anazia, Sophomore (Kinesiology)

Faculty Mentor(s): John Sopper (Grogan College)

My research examines the history of physical therapy (PT) in the United States and the development of different methods used to treat pain. I conducted a Literature Review by reading and analyzing relevant scholarly articles, books, and journals to gain an understanding of PT and its history. I identified the methods most commonly used by physical therapists for treating chronic pain. I also found that PT developed into a distinct profession partly in response to the Pentagon and the needs of soldiers for rehabilitation after World War I and again after World War II. Also influential was the passage of the Hill Burton Act in 1946 and the development of a PT professional association. In further research, I plan to assess which of the most commonly used physical therapies are most effective in treating particular types of pain.

5. **“When the Masquerade Comes” A Chapbook by Honora Ankong**

Student Author(s): Honora Ankong, Senior (English)

Faculty Mentor(s): Emilia Phillips (English)

I will be presenting on a collection of poetry that I have composed for both the Lloyd International Honors College Artist in Residence fellowship and my Senior Honors thesis. This collection of poetry is chapbook length (20-40 pages) that explore the themes of self-discovery and identification as a Cameroonian immigrant in America; of which I journey through language, my childhood in Cameroon, my family’s immigration to the United States, and my life in America. My presentation will consist of reading selected poems from this collection, sharing my research methods and writing process and discussing the Poets and works from which I got inspiration and learned craft techniques.

ABSTRACTS

6. **Do Ethnic-Racial Socialization Messages Manifest in Technological Communication Between Romantic Partners of Latinx Heritage?**

Student Author(s): Itzel Avila Ramirez, Senior (Psychology)

Faculty Mentor(s): Michaeline Jensen (Psychology)

Ethnic-racial socialization messages (ERS) refer to messages youth receive regarding their ethnic-racial group. These messages play a critical role in the development of one's ethnic-racial identity, and are exchanged across different contexts: between parents and children, peers, and quite possibly, romantic partners. In today's technology-oriented society, college students maintain open lines of communication through cell phone use, particularly with the exchange of text messages. Therefore, the current study investigated whether ERS messages manifest in technological communication messages focusing on romantic partners of Latinx heritage. This study used grounded theory to qualitatively code ERS in 11,754 text messages exchanged over two weeks between 12 Latinx college students and their self-identified romantic partners. ERS themes which have emerged include discrimination, education, culture sharing, values sharing, identity affirmation, and language sharing. These findings highlight that ERS message seem to manifest in technological communication between romantic partners, illuminating the importance of studying ERS in modern contexts.

7. **Solutions to the Great Pacific Garbage Patch**

Student Author(s): Noor Ayesah, Senior (Psychology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

"Many people are aware of the severity of the trash polluting the North Pacific Gyre, however; I argue that education is the key first step in solving the problem".

The North Pacific Gyre, in the North Pacific Ocean off of the West Coast of North America. Gyre is defined as a system of circulating ocean currents. Due to circulating currents and human pollution, trash has been plaguing the area. This is the Great Pacific Garbage Patch. According to National Geographic, the high volume of trash in the patch is not biodegradable which causes accumulation. There are many developing solutions. New technology is available but unknown. This is an important issue that is difficult to solve. However, if more people are aware of the solutions, more people will take action. By using sources such as "Abundance and Ecological Implications of Microplastic Debris in the North Pacific Subtropical Gyre" By Miriam Chanita Goldstein and "Sea Trash Traps Face Doubts..." by Erik Stokstad I will be able to explain the severity of the issue and solutions that are available. I am interested in this because the problem will affect my future if not solved and not enough people are taking action.

ABSTRACTS

8. **Racism and Its Effects on Male Minorities in American Prison Systems**

Student Author(s): Belicia Badibanga

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Prison systems in America are motivated to punish and rehabilitate criminals back into society, yet these facilities often violate the inmates' human rights. Prison is already a as a dreadful place to most, so only gets worse for minorities in the system. Specifically, minorities are constantly faced with racism and bigotry. I find this topic interesting and important to share because society wants to suppress the ideas of racism but ignores places and people that deal with racism continuously. Communities fighting for social justice are effective with recognizing unjust lawful actions but tend to forget about the victims serving the time. Life in prison frequently gets overlooked because society doesn't really share sympathy with offenders in the system. With sources like *Color Behind Bars*, edited by Scott Bowman, I can inform readers about the racial disparities present in the prison system. I plan to explain that in order to change the course of racism that leads to death and disparity in the system, the actions of racist inmates and gang members need to be addressed, the ratio of minorities in the correctional officer position needs to increase, and prison systems need to be closely monitored to control the dangerous environment.

9. **Tracking Head Trauma in Youth Sports**

Student Author(s): Lydia Bailey, Senior (Kinesiology), Victoria Borrowdale, Senior (Kinesiology), Tyler Grissom, Junior (Kinesiology)

Faculty Mentor(s): Donna Duffy (Kinesiology)

Sport-related head trauma has become one of the most commonly discussed topics in the area of human health and wellness. Recently studies have shown that repeated head trauma can lead to negative consequences later in life. Repeated head trauma includes sub-concussive head trauma, where the athlete is playing within the rules of the game (i.e., heading in soccer). Importantly, head trauma does not need to be at the level of a concussion in order to alter brain function and human behavior. Head trauma to a developing brain may have critical consequences, potentially disrupting typical child development processes. However, experimental studies on the role of sub-concussive head trauma on children are relatively rare. It is unknown how to best identify the frequency and magnitude of head trauma in youth sports, as self-report measures are more cost and time effective but may not be as valid as objective measures. Thus, the objective of this project is to validate self-report head impact data relative to objective measurements of head impact, and to begin to understand how head impact may alter behavioral and mechanistic processes of child development.

ABSTRACTS

10. **Where do Stereotypes Originate?**

Student Author(s): Brandon Banner, Junior (Computer Science)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Stereotypes are always there and definitely always bother people. I had many questions pertaining the origin of stereotypes, because stereotypes have affected me; mostly in a negative way, which is why I decided to research stereotypes to get a deeper understanding of stereotypes.

I will be using sources that are either scientific or example based. These sources will give me both concrete data and real life examples. For example, the source *Jews and money: The story of a stereotype* by Abraham H. Foxman, traces the stereotype to its root back to where it is today. Based off of my sources, I argue that understanding the origins of stereotype formation will better equip people to cope with the negative consequences and increase the possibility of reducing the occurrences of this behavior overall.

Therefore, through science and example based sources, I can learn the origins of stereotypes. By the end of my research, I should be better able to understand stereotypes and better equipped to deal with them. In addition, I hope that my research can educate people about where stereotypes originate and their impact on all parties involved.

11. **THE BASS CLARINET LIBERATED: THE EXPANDED TEXTURAL UNIVERSE OF ERIC MANDAT'S "CHIPS OFF THE OL' BLOCK"**

Student Author(s): Taylor Barlow, Sophomore (Music)

Faculty Mentor(s): Andy Hudson (Music)

In spite of its title, "Chips Off the Ol' Block," by composer Eric Mandat, is more than a forgotten stepchild of its more established soprano clarinet counterparts. Forging a unique sonic path by exploring the full range of the bass clarinet and employing multiphonics, quarter tones, and flutter tonguing, "Chips Off the Ol' Block" has become a cornerstone of the bass clarinet repertoire. When the work premiered in 1999, the bass clarinet had just begun to be viewed as a viable solo instrument. Mandat fused the melodic and technical qualities the bass clarinet was known for in the symphony orchestra with a varied palette of contemporary sounds in a way that feels fresh to this day. Each marking, whether dynamic or stylistic, helps achieve certain elements of the extended techniques he writes. The work is based on four themes that develop but are each interrupted by a different theme, each of which stuck with him while improvising on the bass clarinet. "Chips Off The Ol' Block" has created a pathway for the bass clarinet into the soloistic world, allowing the character and nuance of the instrument to shine, rather than only serving a supporting role in the orchestra.

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12. **The Othering Effect in Regards to Transgender Students at the University of North Carolina at Greensboro and Manchester Metropolitan University**

Student Author(s): Axel Battista, Sophomore (English)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

I am aiming to prove that transgender students are “othered” by their peers at both MMU and UNCG. I’m specifically interested in the treatment/experiences of transgender students, considering how often their rights are put into question in the US, and because I am a transman. My thesis statement is: Through my research, I hope to prove that transgender students are more often than not “othered” by their peers in both the UK and the US. Even though this trend/rhetoric is beginning to deteriorate, both countries could use a sufficient amount of education on the LGBT community, and specifically how to understand, support, accommodate, and accept transgender students. I am interested in this topic because I am a transman, so this topic affects me personally and deeply, as well as the people around me. I will be referencing multiple online journals through MMU and UNCG library websites throughout my research. One article is called “Teaching Transgender Students,” by Miss Loraine Sims, which has helpful terminology and information regarding transgender students. From my research, I will be able to prove that transgender students are othered by their peers, and debunk different misconceptions surrounding the transgender population at UNCG and MMU

13. **How Physical Therapy Addresses Chronic Musculoskeletal Pain**

Student Author(s): Lael Beatty, Sophomore (Kinesiology)

Faculty Mentor(s): John Sopper (Grogan College)

A significant amount of the United States’ population is suffering from disabilities and diseases, affecting their motor movement. Beginning with the treatment of soldiers during World War 1, Physical Therapy has gradually developed into a distinct profession dedicated to restoring patients’ mobility. My research examines the different ways contemporary Physical Therapists treat physical injuries to restore patients’ mobility.

Methods:

Observed PT practices as a Physical Therapy Job Observationist at Results Physiotherapy clinic.

Conducted an informational interview with a physical therapist at Results Physiotherapy

Conducted a Literature Review of studies on the impacts that various physical therapy treatments can have on musculoskeletal pain.

Findings: Physical therapy can help individuals improve and/or restore joint mobility and reduce musculoskeletal pain. The most commonly used therapies are heat, exercise, water, massage therapy, electrical stimulation, manual physical therapy and exercise. Manual physical therapy and exercise are the most effective.

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14. **Managing Fibroid Tumors Through Nutritional Science**

Student Author(s): Nari Beatty, Sophomore (Nutrition)

Faculty Mentor(s): John Sopper (Grogan College)

Fibroid tumors are a plethora of muscles that bind together, forming a fibrous knot within the uterus. My research explores the causes of the high rate of fibroid tumors among African-American women, and what can be done to reduce it. I focus on how nutritional status plays a role in the development of these abnormal growths, and I suggest ways that dietary and lifestyle changes might reduce their occurrence. I conducted a literature review of recent published studies. I also interviewed a professor in the Nutrition professor. I found that fibroid tumors are thought to be caused by an imbalance of hormones in the uterine, and that the risk of developing fibroid tumors can potentially be reduced by consuming foods that are nutrient dense, low in saturated fats, and that are high in fiber, as well as incorporating lots of exercise into your daily routine, specifically cardiovascular exercises, to reduce weight gain around the waistline. Exercise and nutrition are very crucial to lowering this risk.

15. **Control and Production of Apicultural Commodities on the Island of Kea**

Student Author(s): Michael Bell, Senior (Classical Studies)

Faculty Mentor(s): Joanne Murphy (Classical Studies)

The Cycladic island of Kea boasts a considerable amount of evidence of apicultural production from the Bronze Age to the present day, predominantly in the form of ceramic beehives. This study explores the anthropological and economic principles of control of luxury commodities as they apply to Keian apicultural products (honey, beeswax).

Using surface survey and GIS data, I have mapped finds of the remains of ceramic beehives collected by the Kea Archaeological Research Survey and have correlated the undatable examples to nearby diagnostics. This has allowed for the contextualization of the production of apicultural goods through space and time. Several clusters of apicultural activity have been isolated, many of which conform to ancient literary descriptions of ideal beekeeping sites. Although the evidence for most clusters points to extremely long-term use, one site in particular seems to have been used only during the Late Roman period of Kea's habitation.

16. **Bilingualism: Is It or Is It Not A Risk Factor For Stuttering?**

Student Author(s): Meagan Bess, Senior (Communication Sciences and Disorders)

Faculty Mentor(s): Robert Mayo (Communication Sciences and Disorders)

This independent study focuses on stuttering in children who speak more than one language and how speech-language pathologists personally perceive the impact of bilingualism on stuttering. I begin with a definition of bilingualism and its impact on people in society. I define stuttering, core features of stuttering, and the ABC's of stuttering, which are affective, behavioral, and cognitive. With my interest in the Spanish language, I hoped to find a specific percentage on those in the United States who stutter. I only discovered information that one in seven people in the United States speak a language other than English, though it is unknown how many people who are bilingual stutter. Information from Dr. Courtney Byrd and her colleagues share the impact of stuttering on bilingual children. I also compare a study by Rodney Gabel to Byrd and colleagues. My independent study also includes benefits of assessments, treatments, and sessions with speech-language pathologists. The conclusion of this project shows that there is still a lot to learn about impacts of bilingualism on communication and stuttering.

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17. **Discrimination Against Natural Hair in the Workforce**
Student Author(s): Brianna Blackmore, Sophomore (Kinesiology)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Natural hair should not be discriminated against in the workforce. Being that some African Americans hair does not grow straight and silky from the roots does not make African Americans unqualified or unprofessional. Being that I an African American female with natural hair, this discrimination can affect me in my career and just by whether I will get a job. The kinks, curls, and the melanin in our skin does not make African Americans an object to discriminate against. No workforce should judge by the texture of our hair rather than our work ethics. The main source I will be using is a video from Sophie Wishes. In this video she is telling her story of how she was discriminated against at her job because the style she wore her natural hair in. The second source I will be referring to is Brittany Noble-Jones story about being fired from WJTV. The story is coming from Brianna Williams. Fired, because they wanted the viewers to see a “beauty queen”. The only thing that change was her hair. From this research I’m learning to love me for me not to satisfy anyone’s expectations of me, expect mine.

18. **Creativity In the Classroom and its Contribution to Employability**
Student Author(s): Ashley Bonner, Sophomore (Art Education)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

The K-12 School System is set up in the style of a factory, class changes are dictated by bells and learning has been standardized. In contrast, employers are looking for people who can provide something creative and new to their company. Some say that the emphasis should be strictly on what is called core classes such as science and math. I argue, that providing students with a stronger arts education, and connection with creativity, will strengthen their skills needed in the future. As a sophomore in the study of arts education, I am interested in finding a connection between creativity, individuality, and employability in order to promote the importance of the arts. Through sources such as the article, *Creativity and education* (Creativity, education and the arts), which examines creativity as a needed skill in the job market, along with other articles and journals, I will conclude that creativity is an important skill that should be fostered throughout education in order to better prepare students for the future. Through my research, I hope to bring to light the value of creativity and push for more ways to implement the arts and creativity in all classrooms.

19. **Perinatal Opioid Use: Examining Best Practices in Service Provision**
Student Author(s): Gia Born, Sophomore (Public Health Education)
Faculty Mentor(s): Tracy Nichols (Public Health Education)

Using data from a larger study that has been following North Carolina’s response to perinatal opiate use, this substudy examines the role of intersectional stigma in providers’ perceptions of treatment services for women who use opioids while pregnant. The primary focus in the study is on opioid use but perceptions of other substance use relative to opioid use are also being examined. The overall research question guiding the substudy is: What is the role of intersectional stigma in the provision of services in North Carolina for women who use opioids while pregnant? For this substudy, five established code categories are being examined: Treating Addiction, Using Drugs, Being in Recovery, Judging Mothers, and Mothering with an Addiction. we completed the codes Treating Addiction and Judging Mothers in spring 2018. Additional completing codes Separating Families and Advocating for Mothers/Infants in

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fall 2018. Each code category is reviewed for significant quotations and compared across data sources. Memo-writing occurs at each level of analysis and guides interpretation of the findings. Currently, we are looking at creating a grounded theory for best treatment of mothers addicted to substances. This presentation will include examining a grounded theory that works best for the implementation of these best practices and the role of stigma.

20. **Low Resistance to Peer Influence Increases Risk Taking in Sensation Seeking Youth**

Student Author(s): Maura Bourne, Senior (Psychology)

Faculty Mentor(s): Susan Keane (Psychology)

Extant research supports the link between (1) high sensation seeking and risk taking behavior and (2) peer influence impacting risk taking in adolescence. Less is known about how peer influence might interact with sensation seeking to predict risky behavior. The current study hypothesized that higher sensation seeking would predict greater risk taking, particularly among adolescents endorsing low levels of resistance to peer influence. From the RIGHT Track study, 230 adolescents (40% male) completed measures of sensation seeking and resistance to peer influence at age 15 and a measure of risk taking behavior at age 17. A regression analysis revealed a significant interaction ($\beta = -.153$, $P = .015$), where resistance to peer influence moderated the link between sensation seeking and risk taking. In other words, higher sensation seeking predicts greater risk taking behavior, particularly among youth who are more susceptible to peer pressure/influence. These findings may inform interventions aiming to increase levels of resistance to peer influence, especially among sensation seeking youth.

21. **A Fight for Women to Peacefully Breastfeed in Public**

Student Author(s): Dominique Bradley, Sophomore (Biology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Every part of a person's body has a specific purpose for why it's there. The body has teeth to chew food, fingers on the hands to grab things, and women have breast to feed their newborns. The issue with that is we as a society have let our minds over sexualize women to where we don't want women to use their breasts to feed their children in public because we think it is indecent. For the world to change, our society needs to realize that women are not sexual objects. As someone who plans on publicly breastfeeding, I will argue that women should have the freedom to peacefully breastfeed because it is a benefit to both the child and the mother also it's natural. Some sources that I will use to help me get my point across include the book *Beyond Health, Beyond Choice: Breastfeeding Constraints and Realities*, personal interviews, and articles that state the importance of breastfeeding as it will help me in explaining why women shouldn't be harassed for publicly breastfeeding. Based on facts, I want the world to understand the freedom that women have and prove a point that breastfeeding in public is natural and not indecent.

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22. **Employee Wellness and Productivity in the Workplace**
Student Author(s): Christina Brown, Senior (Interior Architecture)
Faculty Mentor(s): Travis Hicks (Interior Architecture)

Next, a Global Real Estate firm in Denver, Colorado sought to create a work environment to enhance the wellbeing of their employees while improving productivity. The office space needed to be designed without assigned seating while encouraging employee engagement. Design solutions were based on the research of biophilia, natural light, ergonomics and color theory. Biophilia was implemented by allowing a sense of nature into the space to enhance well-being and improve productivity. Natural light has been shown to relieve stress, therefore ancillary work space and the work café were placed by the large windows. A variety of postures, such as sitting and standing, were accomplished at work stations, in meeting spaces and in ancillary work areas to support individual ergonomic needs. For the application of color theory dark green, the color of nature and money, sets the overall tone for the space. Shades of blue are good for concentration and help people be productive and were applied in heads down focus areas. Reds and oranges activate the common workspace areas and help support the fast paced, Global Real Estate Competitive environment.

23. **Perceptions of Private vs. Public High Schools Among College Freshmen**
Student Author(s): Faith Brown, Sophomore (Nursing),
Amy Elzey, Sophomore (Teacher Education & Higher Education)
Faculty Mentor(s): John Sopper (Grogan College)

RESEARCH QUESTION: How do diverse college freshmen perceive the quality of public vs private high schools?

Hypothesis: Most college freshmen perceive private high schools as “better” than public schools across a spectrum of quality indicators.

Method: Mixed methods approach using a survey questionnaire and follow up focus groups and possibly individual interviews. Our survey questionnaire collects basic demographic data and asks respondents to compare private versus public schools on a variety of indicators of quality (academic, co-curricular, athletics, safety/crime, diversity). Focus groups (and time allowing, individual interviews) with a sample of the questionnaire respondents will provide opportunities to delve more deeply into their perceptions and the reasons and experiences that inform those perceptions. This research will provide a richer understanding of the value laden perceptions that influence public debates about public education.

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24. **The Ancillary Office: The Effects of Biophilia and Ergonomic Solutions Within the Workplace**

Student Author(s): Morgan Bryant, Junior (Interior Architecture)

Faculty Mentor(s): Travis Hicks (Interior Architecture)

As more of today's office employees are seeking mobile opportunities, 60 – 80% of people are choosing to work at the local coffee shop due to a lack in collaboration space as well as focus space within the office. There is a growing need for a separation of zones, based upon activity, within the office. These zones include quiet space, social space, collaboration space, and meeting space with the use of ergonomic furniture in every zone. In response to this emerging need for flexibility, I designed a global real estate office in Denver, CO that supports group development through technological connectivity with the goal of drawing employees back into the office. The design of this office space accommodates a diverse range of employees by creating a desirable workplace for a spectrum of generations and cultures. Implementing biophilic elements inspired by the surrounding Denver landscapes cognitive, emotional, and physical well-being are reinforced. The design allows for opportunity of personalization by the employees to create a stronger connection between workplace and worker; while promoting mental well being using biophilia inspired by the Denver landscapes.

25. **Musical Ability: The Prescribed Drug**

Student Author(s): Davares Burnett, Sophomore (Psychology)

Faculty Mentor(s): None

How music affects the human body and mind has been researched and examined in a visual search task. Applying the usage of music that affect the brain chemistry, it was found that four primary neuro-chemical systems were connected to four areas of a person in a positive way. Immunity, social affiliation, stress and arousal, reward, motivation, and pleasure were all affected by differing healthy levels of cortisol, serotonin, and oxytocin, hormones produced in the body. The purpose of this study is to increase a need of an alternative medicine like music to decrease the usage of prescribe drugs. Patients who listened to music prior to medical procedure had lower anxiety levels that people who took Valium, an anti-anxiety drug. Also people have seen a drop in cortisol, a stress hormone, after listening to relaxing music. Together, these findings suggest that music have an effectiveness to the brain chemistry and the human body to promote a healthier well being. More extensive research on this matter will help support and produce well defined, concrete empirical evidence about music ability, a prescribed drug.

Keywords: music, hormones, prescribed drug, brain chemistry, alternative medicine, human body

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26. **Exploring How to Overcome the Hesitancy to Begin New Ventures**

Student Author(s): Viola Byass, Sophomore (Psychology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Why do people wait to undertake new tasks? The most common answer for that question is fear. Whether if it's of failure or of embarrassment, fear can sometimes be irrational and can hold people back from discovering their full potentials. People can begin to become more comfortable breaking out of this hesitation by understanding the true nature of their resistance, changing their attitude, and obliterating uncertain feelings towards the interest. It started freshman year where no one knew anyone and many were scared to make new friends, but after observing this I began to notice this hesitation within more settings and situations and began to wonder why. While facilitating personal interviews, I got some of the answers I needed. Scholarly articles provided proof for how the methods listed above can help one overcome their hesitancy toward new interests. The Harvard Business Review is home to two articles I will be referring to, one of them being *Ten Reasons People Resist Change*, written by Rosabeth Moss Kanter. The outcome of this research could help one understand the bases of their fear a bit more when it comes to jumping into new activities.

27. **Effects of environmentally relevant concentrations of glyphosate on hatching and survival of *Artemia salina***

Student Author(s): Tabitha Canipe, Garrett Carr, David Feist, Hilda Kibobi, Erin McNeely, LaShawn Parker, Max Paul, Shanika Uyadi

Faculty Mentor(s): Ramji Bhandari (Biology)

Class Standing: Developmental Biology Lab (BIO 464L)

Glyphosate, a key ingredient in Roundup herbicide, is commonly found in surface waters in the United States. The environmentally relevant concentration of glyphosate is 0.4 mg/L (400 ppb) and maximum concentration allowed for human consumption is 0.7 mg/L (700 ppb). It is not clear whether these concentrations are harmful to microinvertebrates in an ecosystem. The present study, therefore, examined effects of various concentrations of glyphosate on a species of brine shrimp (*Artemia salina*). Using 0, 0.1, 0.4, 0.5, 0.7, and 1.5 mg/L concentration of glyphosate, we examined hatching rate and survival in brine shrimp from cyst to nauplii stage. None of the exposure concentrations caused significant differences in hatching rate and survival in 48 and 120 hours of exposure. Results suggest that environmentally relevant concentrations of glyphosate do not affect hatchability and survival of brine shrimps in salt water.

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28. **Effect of the Inactivation of the Myosin 11A Heavy Chain on GLUT4 Translocation During Insulin Stimulation in Adipocytes**

Student Author(s): Maria Cateriano Bartet, Senior (Biology)

Faculty Mentor(s): Yashomati Patel (Biology)

Diabetes affects more than 422 million people worldwide and is characterized by high blood glucose levels. It is unknown what aspect of the glucose uptake process is impaired in Type 2 diabetics. The glucose uptake process is initiated when insulin binds to its receptor on adipocytes to translocate the glucose transporter, GLUT4, to the plasma membrane to allow glucose into the cell. When the GLUT4 is signaled, it transports it to the membrane. Adjacent to the plasma membrane, is a thin layer of actin filaments which prevent GLUT4 from reaching the membrane on its own. As a result, the actin filaments form a tether to attach to GLUT4 allowing it to reach the membrane. The actin tether may be stabilized by the actin interactive protein, myosin IIA. The goal of my research is to determine the effect of myosin IIA on the formation of the actin tether during insulin stimulation of adipocytes by altering the heavy chain component of Myosin IIA. These studies will provide more information on the role of glucose transport in adipocytes, which may provide more targets for drug development.

29. **Developing a Sustainable Assessment Association in Mexico for Indigenous Language Assessments**

Student Author(s): Celeste Cervantes, Junior (Teacher Education and Higher Education)

Faculty Mentor(s): Jamie Schissel (Teacher Education and Higher Education)

For southern Mexican states, there is a critical need to address language assessment concerns around the vast number of Indigenous languages. Our project is centered on efforts to develop an association in Mexico that coordinates, develops, and provides guidance on Indigenous language assessment in particular for certification of interpreters and teachers, language teaching, revitalization efforts, and related issues that arise. This association is being developed in partnership with Indigenous community leaders using a participatory action research (PAR) methodological approach. The research questions are designed as a guide for the project that can be to be further tailored to meet the desires of the Indigenous community leaders: (1) What are community members' beliefs about the role of language assessment of Indigenous languages; (2) How do or can community members engage with language assessment of Indigenous languages; and (3) How do or can community members collaborate in the development of the language assessment association to develop actions to affect change in language assessment of Indigenous languages? With these efforts, this PAR project is poised further local, national, and international decisions and debates around Indigenous language assessment across Mexico, the Americas, and other regions of the world.

30. **Transgenic Tobacco with Archaeal Heat Stress Resistance**

Student Author(s): Quashawn Chadwick, Post-Bac (Biochemistry)

Faculty Mentor(s): Osen Ayalew (Biology)

Changes in global climates in the last century have put unprecedented stress on the growth and development of agricultural products. Higher temperatures and longer, more frequent heat waves push agricultural goods, such as corn (*Zea mays*), cotton (*Gossypium hirsutum*), and soybeans (*Glycine max*) beyond their evolutionarily adapted limits.

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Abiotic stresses such as heat induce oxidative stress in plants. The thioredoxin system is ubiquitous among organisms as a defense mechanism against oxidative stress. In extremophiles, the thioredoxin system has not been well characterized, and their heterologous expression *in planta* has not been attempted, however, some reports suggest that and these enzymes play an important role in extremophile survival.

Our research team is currently focusing on improving plant resilience to heat stress by expressing archaeal thioredoxin reductases *in planta*. The overall goal of this project was to improve crop resilience to environmental stressors such as heat. *Pyrococcus furiosus* Trx B was codon optimized and expressed in transgenic tobacco (*Nicotiana benthamiana*) under the control of heat-inducible barley *HSP17* gene promoter using *Agrobacterium*-mediated transformation. We have obtained six transgenic lines which are being evaluated using molecular and biochemical studies. Novel traits demonstrated in model tobacco will be transferred to other economically important crops.

31. **Cannibalism in Food Culture: Why Prions Need Regulation**
Student Author(s): Sydney Chamberlain, Sophomore (Biology)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Cannibalism is typically frowned upon by society. Cannibalism is a prohibition that transcends most cultures, making it easy to forget that evidence of cannibalism has been found on most continents and still plays a large role in art, literature, and media. But the Fore people of Papua New Guinea never stopped practicing cannibalism and from it arose the discovery the prion. Prions are misfolded proteins that cause spongiform encephalopathy, named because it leaves the brain with sponge-like holes. Prions can be dormant for up to 40 years, are impervious to conventional disinfectants, and can be transferred across species by ingesting infected tissues. So when companies began to feed cow meal to cows prions entered human populations. Since cannibalism is uncommon people disregard the need to make regulations that prevent the spread of prions; but prion related diseases stretch beyond Kuru and into Alzheimer's, CJD, Scrapie, Parkinsons, and Huntington's disease (*Prions in Humans and Animals*) and without more regulation are a danger to the population. While some of these are naturally occurring, most are caused by improper organ transplants and unregulated meat processing. This research argues why more regulations to prevent the spread of prions in food and medicine is needed.

32. **Synthesis of Quaternary Chiral Centers in the Spirocyclic Lactone Motif Using Asymmetric Brønstead Acid Catalysis**
Student Author(s): Nicholas Chambers, Senior (Biochemistry)
Faculty Mentor(s): Kimberly Petersen (Chemistry)

A common characteristic of pharmaceutically viable compounds are the specific three-dimensional centers contained within their structure. These geometric centers occur in simple organic molecules as well as important pharmaceutical targets such as enzymes, receptor proteins, and nucleic acids. Many synthesized organic molecules containing such geometric centers can only be obtained in a 1:1 ratio of isomers using traditional synthetic methods. Obtaining an excess of one isomer over another during synthesis is important as each isomer can have different effects in a biological system when compared to the other. In this project the Petersen Group used a geometrically unique Brønstead acid catalyst to construct an all-carbon-bond geometric center within a cyclic lactone motif in several substrates. These geometric centers were obtained in varying levels of isomeric selectivity using this method, and the

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formation of the lactone was followed by a traditional Brønstead acid cyclization which yielded rare spirocyclic dilactones in significant yield while retaining isomeric selectivity. This presentation details the process of synthesizing one of the project's substrates by Nicholas Chambers as well as the overall isomeric selectivity and yield data obtained by the group for all substrates investigated. All included information is in reference to an upcoming Petersen Group publication scheduled for release before the summer of 2019.

33. **There's No Place Like Home Screen**

Student Author(s): Kaitlyn Chaplin, Senior (Communication Studies),
Ariana Chavez, Senior (Classical Studies), Brianna Rogers, Senior (Classical Studies)

Faculty Mentor(s): Killian Manning (Communication Studies)

"There's No Place Like Home Screen" focuses on how interpersonal relations intersect with technological affordances of social media and free speech legislation in the United States.

In the CST 460.05 course, "Behind the screens," 24 undergraduates and Prof. Manning tackled the question "why do we become monsters when we are anonymous?" Using Communication Studies research, we investigated the topic from several angles: personal (self-esteem, intimate relationships), collective (hate groups, incels), social (First Amendment/free speech), and technological (anonymity, speed, permanence).

In order to script and stage our findings, we chose to use the narrative The Wizard of Oz because it offered salient links to the issues we had identified: Dorothy lost (in the land of the internet); Scarecrow needs a Brain (mindlessly following crowds on the web); Tinman needs a Heart (looking for love on dating websites); Lion wants Courage (to stand up to cyber bullies); Wicked Witch of the (Web) becomes the Ur-cyber-bully; the Wizard of Oz emerges as a catfisher; Glinda offers solutions (delete, block, be an upstander).

This 35-minute group performance brings the power of analogy to the problem of cyber-bullying in a way that is fully engaging, educational, provocative, and original.

34. **Relationship Between Mother-Child Conflict and Child Internalizing Behaviors**

Student Author(s): Brittany Charles, Junior (Psychology)

Faculty Mentor(s): Susan Keane (Psychology)

The development of internalizing symptoms in childhood and adolescence is linked with diagnoses of anxiety and depression in adulthood. Existing research shows that mother-child conflict increases the chance that one will suffer from internalizing symptoms. The main objective of the present study was to replicate these existing findings by evaluating the relationship between mother-child conflict and child internalizing behaviors. It was hypothesized that mother-child conflict will be associated with child internalizing behaviors. The current study included 249 children from the RIGHT Track Project (112 males). Mothers completed measures of internalizing behaviors (age 10) and mother-child conflict (age 10 & 15). Analyses revealed internalizing behaviors at age 10 and mother-child conflict at age 10 and 15 are positively correlated ($r=.372, p<.01$ & $r=.254, p<.01$, respectively). Findings are consistent with current literature, which completes the first step in an ongoing study. As a next step, the author plans to examine potential protective factors related to internalizing behaviors.

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35. **Use-Wear Analysis of the Middle Horizon**

Student Author(s): Amanda Chase, Senior (Anthropology)

Faculty Mentor(s): Donna Nash (Archaeology)

Use-wear analysis is a qualitative method of study that observes abrasion patterns on material remains. Wear traces can come from stirring, lids, storage techniques, and other culinary practices. Apparent wear patterns and abrasion coarseness are features that help infer the use of different vessel forms. I applied this technique to vessels from the Wari-affiliated sites of Cerro Baúl and Cerro Mejia, which were occupied during the Middle Horizon (600-1000CE). I examined over one hundred vessel rims for traces of wear from the use of lids and other forms of apparent use-alteration. Abrasion information was qualitatively and quantitatively collected from wear location, depth, length, width, and patterning. Use wear was split into four characteristics: soft wear (i.e. resulting in a buffered texture), coarse abrasion (e.g. gouges, scratches), no use wear, and not enough evidence (i.e. too much post-depositional erosion to ascertain apparent use wear pattern). The two-tailed t-test show significant similarities of rim diameters between sites; however, use-wear percentages taken from alteration characteristics show wear pattern differences between sites. The analysis documented rim-wear consistent with patterns of abrasion consistent with the use of lids, which provides insight into culinary and storage practices of the Middle Horizon.

36. **Novel Ligands for Degradable Biopolymer Formation from Renewable Sources**

Student Author(s): Melissa Chicoma, Senior (Biochemistry)

Faculty Mentor(s): Terence Nile (Chemistry)

Polymers are ubiquitous in our world. Their use ranges from polyester clothing, saran wrap, and furniture, to medical implants. However, they suffer from two major drawbacks. They are based on hydrocarbon feedstocks and they do not degrade significantly in the environment. Polylactide is a biopolymer that is based on natural renewable resources and can degrade naturally. It is manufactured by the fermentation of biomass that can be readily converted to lactic acid, which can undergo cyclization to form lactide. These polymerization reactions involve catalysis using metal complexes. Many catalytically-active complexes are based on ligands combined with metals such as copper, aluminum and tin. These ligands are often imines formed from salicylaldehydes and amines to form SAL's. We have synthesized numerous SAL ligands with aryl imine substituents that contain hemi-labile alkoxy groups. These alkoxy groups can weakly coordinate with the metal atoms and stabilize the catalyst. This will hopefully increase the thermal stability of the catalyst, allowing polymerizations to take place at higher temperatures and at faster rates. We will report on our synthesis of novel ligands and metal complexes and their use in the polymerization of lactide.

37. **The Transition from Early College to a University**

Student Author(s): Kendall Church, Junior (Psychology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

I am conducting research on how well early college high school programs prepare their students for the early college experience. Despite research claiming that ECHS programs are beneficial through conducting my own research, I have come to question the validity of those claims. I argue that early college programs do not prepare students for the experiences they will endure at a university. I

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personally question the validity of the claims made by early college programs. In reading secondary sources such as “Early Results from an Experimental Study of the Early College High School Model”, the author claims that the program adequately prepares students to succeed in a university setting. However, through the interview I conducted with Bobby Izydore it was deduced that the program did not adequately prepare him to succeed. I intend to prove that early college programs don’t adequately prepare students to succeed in a university setting, unless the early college is on a university campus. This research is important because it will help early college high schools to improve their programs. As a result of my research I would like to see more programs to help students adjust and succeed in their transfer to a university.

38. **The Historic Dimension Series: Launching an Online Student Publication Series**

Student Author(s): Laura Clifton, Post-Bac (Interior Architecture)

Faculty Mentor(s): Jo Leimenstoll (Interior Architecture)

The Historic Dimension Series is a collection of briefs written and illustrated by UNCG students in historic preservation classes taught by Professor Jo Leimenstoll over the past several years. The primary goal of this project is to transform *The Historic Dimension Series* from a print publication to a digital format that is intended for viewing online and searching by topic via the UNCG library archives or Interior Architecture departmental website. Over 100 briefs have been developed to date, covering a range of topics in the field of historic preservation and architectural history. Approximately 25-30 briefs from this collection will be selected and edited for digital publication. Working in tandem with UNCG Electronic Resources & Information Technologies (ERIT) staff, metadata including abstracts, keywords, and topic headings will be created for each brief to ensure ease of searching and browsing in the Islandora digital repository system. Adapting the series for online publishing will expand its visibility and accessibility for a broader audience and provide a systematic procedure for the addition of new student briefs in the future.

39. **LGBTQ Travelers Visiting Japan: How Best to Navigate Evolving Japanese LGBTQ Culture**

Student Author(s): Kayla Coe, Sophomore (Economics)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

LGBTQ tourists are used to tension. Overall they are safe in Japan, especially in more progressive, urban areas. Recent laws have improved conditions for LGBTQ citizens, such as the Tokyo law that states “the Tokyo Metropolitan Government, citizens, and enterprises may not unduly discriminate on the basis of gender identity or sexual orientation” and pledges that the government will “conduct measures needed to make sure human rights values are rooted in all corners of the city and diversity is respected in the city.” This will not only improve conditions for LGBTQ citizens on levels of discrimination but will also help in educational based spaces. Still Japan is a very homogeneous, heterosexual, and patriarchal society with a backbone of religion; it is clear to see why there may be some tension for LGBTQ travelers. I argue that in spite of recent progress in this area, Japan has more work to do to welcome LGBTQ tourists. I’m interested in this topic as an LGBTQ traveler myself, and I will be using several sources, such as the educational work of James Sears. Though Japan is generally safe, this research delves into the contrast with the U.S, so understanding the LGBTQ community will better prepare these travelers when walking into Japanese spaces.

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40. **Stress Appraisals: Personal and Group Discrimination**

Student Author(s): Kimberrly Colon, Senior (Psychology)

Faculty Mentor(s): Gabriela Livas- Stein (Psychology)

Past research has linked experiences of racial and ethnic discrimination to a host of negative outcomes including lower self-esteem, lower self-efficacy, and greater depressive and anxious symptoms in racial/ethnic minority populations (Bourguignon, D., 2006; Eccleston C, P., 2006; Noh, S., 2003; Cano, M. Á., 2016). Appraisal of discriminatory events has been discussed in psychological literature however, little distinction has been made in relation to discrimination types. This study will utilize an experimental design to differentiate the emotional responses seen in discrimination types and whether differences in stress appraisals are subsequently related to perception of educational barriers in an undergraduate population. Participants are comprised of undergraduate students at a public university who self-identify as African American or LatinX. Participants will complete an online survey comprised of a discrimination vignette (personal or group), the international PANAS, Perception of Barriers questionnaire, and the Schedule of Racist Events. The study hypothesizes perceived group discrimination will be associated with a greater increase in stress. It is also hypothesized that the increase in stress appraisal will increase the perceived educational barriers in students. Data will be analyzed using an independent groups T-test with the schedule of racist events as a control.

41. **The Lack of Representation for Women in STEM Courses is Due to the Bias in the STEM Community**

Student Author(s): Danaye Connor, Junior (Biology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

A female's experiences with gender bias in fields related to science, technology, engineering, and math (STEM) can lead to the absence of representation of women in the labs, classroom, and discoveries. Many high school girls who aspired to have STEM careers, women in STEM undergraduate majors, and women in STEM doctoral programs will face opposition. I plan to teach high school and looking into how influential this time is will prepare me for the future encounters that could cause young ladies to choose a STEM career path. Not only are women and minorities underrepresented in STEM careers, there is strong evidence that many academic departments are resistant to addressing the concerns that keep them from entering careers in these fields. A book called "A Hand Up: Women Mentoring Women in Science" is giving me insight about where to start when approaching young women in the STEM field. I argue that having a support network buffers some of the negative gender biases in the STEM Community. The full participation and advancement of underrepresented groups in the sciences and addressing how academic departments and universities can remedy the situation.

42. **An Interactive Map of Holistic Veterinary Medicine**

Student Author(s): Isabell Cooper, Sophomore (Environmental Science)

Faculty Mentor(s): John Sopper (Grogan College)

My name is Isabell Cooper. I am an Environmental Science, Pre-Vet major who is interested in increasing the opportunities for animals to access and benefit from holistic veterinary treatments. These treatments are less painful, more humane, and more cost effective. To accomplish this in the fall of 2018 I decided to do some research on Holistic Veterinary Medicine. I completed a Literature Review to determine the different types of Holistic treatments and what they involve. I also conducted an in-person interview with Dr. Kim Krivet to learn about the daily practices of veterinarians who use

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Holistic approaches and why they use them. I did an on-line website review to locate veterinary practices in NC that offer Holistic treatment options, and based on this research, I made an interactive map of veterinarians that practice Holistic Veterinary Medicine so that people who are interested in looking for holistic veterinarians in the state of North Carolina will have one place to go to find one. For this Expo I plan to present different methods of Holistic Veterinary Medicine, as well as my interactive map of veterinarians in the state of North Carolina.

43. **Preliminary Phytolith Analysis at BK East (Middle Bed II, Olduvai Gorge, Tanzania)**

Student Author(s): Alicia Costa-Terryll, Senior (Biology)

Faculty Mentor(s): Charles Egeland (Anthropology), Bruce Kirchoff (Biology)

The early Pleistocene (2.5mya-12,000ya) in early human evolution is often characterized by the presence of bigger brains in early hominins, the butchery of big animals, and the migration of early hominins out of Africa. Paleoecology often provides insight into these behaviors and how their environment impacted early hominins. Phytoliths are utilized as paleo biological indicators to reconstruct the paleoecology at various sites. Phytoliths are small, silica-based structures that are deposited into the soil once the plant has decayed. By utilizing phytolith morphology as indicators of paleo vegetation, this study provides insights into the Early Pleistocene's (~1.4 mya) ecological environment at BK East, Olduvai Gorge, Tanzania. Excavations at BK East have taken place from 2014 to 2018 and have focused mainly on Middle Bed II. The phytolith data recovered from these excavations have shown that BK East is near a river. Analysis of data, to date, suggest a more closed vegetation context. This finding was corroborated with the geological data, based on characterization and classification of different stratigraphic layers. The faunal, lithic, geological and paleo-ecological evidence all come together to provide a picture at the site of BK East in Olduvai Gorge. In this talk the different types of data will be outlined to better understand early hominin behaviors and how the paleoenvironment influenced their behaviors.

44. **Investigating the Effects of Peroxiredoxin from *Pyrococcus furiosus* on Heat Stress Tolerance in Model Tobacco**

Student Author(s): Christopher Cotter, Post-Bac (Biology)

Faculty Mentor(s): Ayalew Oseno (Biology)

Under normal conditions, plants generate reactive oxygen species (ROS) such as hydrogen peroxide (H_2O_2), superoxide radicals ($O_2^{\cdot-}$), and hydroxyl radicals (OH^{\cdot}) through aerobic metabolism which serve as important cell signaling molecules. However, during times of abiotic stress such as increased heat, light, salinity, or drought, ROS concentrations increase to levels that are toxic to cells. As climate change continues to trend toward warmer temperatures, plants may begin to experience increased levels of heat stress and thus generate increased concentrations of ROS. Peroxiredoxins (Prx) are antioxidant enzymes that detoxify peroxides and modulate redox signaling in plants, bacteria, and archaea. While plant Prxs are effective antioxidants under mesophilic conditions, their capacity may be limited at increased temperatures. *Pyrococcus furiosus* is a hyperthermophilic archaea that expresses Prx and thrives at temperatures near 100°C. This research aims to express Prx from *P. furiosus* in model tobacco and investigate the effects of the archaeal Prx on heat stress tolerance.

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45. **The Impact that *Apis Mellifera*'s Body Size Has on the Number of Ovarioles Present/Produced in the Ovaries**

Student Author(s): Kali Cox, Senior (Biology)

Faculty Mentor(s): Olav Rueppell (Biology)

Honeybee workers are an important part of pollination and in turn prove to be an important research model. Workers and Queens differ in size, but the consequences of this variation have not been systematically studied. Therefore, my research addressed the following question: What impact does *Apis mellifera*'s body size have on the number of ovarioles present/produced in the ovaries? To answer this question, I collected 100 bees in total, 50 from a small colony which produced smaller sized bees and 50 from a large colony which produced larger sized bees. I used a computer measuring device to get a more accurate measurement of the width and length of the abdomen, thorax, head, and the right and left wings. A data analysis was conducted to verify the differences in size between the two groups, using the statistical software JMP before proceeding. With the differences in size verified, I began dissecting the ovaries and measuring the ovarioles present in the small and large sized bees. The results are still ongoing, but it does indicate thus far that body size might play a role in the number of ovarioles present in a honeybee's ovary. Thus, it might be beneficial for worker bees to have a larger body size because ovary size can translate into better individual reproductive opportunities.

46. **The Statue of Peace: Catalyst for Outrage and Memory**

Student Author(s): Sarah Cratt, Senior (English, Asian Studies)

Faculty Mentor(s): Heather Adams (English)

The statue of a young girl, located across from the Japanese Embassy in Seoul, South Korea, has continued to garner attention since its unveiling in 2011. Commissioned by the Korean Council for the Women Drafted for Military Sexual Slavery, the statue, named the Statue of Peace, is intended to support work of the Wednesday Rally, a weekly protest that continues to demand adequate reparations from Japan for comfort women. During World War II, Japanese military brothels, called comfort stations, used recruiting practices that included human trafficking, abduction, threats, and deceiving work offers. The women used in these comfort stations are called comfort women. Since its creation, the Statue of Peace has functioned to create disruption, support the remembrance of comfort women issues, and invite its audience to interact in ways that continue this disruption and remembrance. Seen through a scope of material and visual rhetoric, an analysis of how it was made, the materials used, how it affected other works, its accessibility, and its location, supports the three functions. Understanding the work that the Statue of Peace does, encourages a belief that the trouble will continue to build tension until a suitable resolution for the remaining comfort women is found.

47. **Does Glyphosate, an Herbicide in Round-Up®, affect Human Bone Stem Cells?**

Student Author(s): Taylor Crawford, Junior (Biology), Elizabeth Willard, Senior (Biology)

Faculty Mentor(s): Karen Katula (Biology)

Glyphosate is a major chemical component of a widely used herbicide known as Round Up®. It has been detected in cereals such as Cheerios and Quaker Oats, and has been shown to have human health effects. There is a gap in understanding how glyphosate affects cell function. In this study, we focused on the effects of glyphosate on human bone stem cells. A human osteoblast line was treated with various concentrations of glyphosate for 4 and 24 hours. We tested for levels of reactive oxygen species (ROS), Glutathione, and total antioxidant capacity (FRAP) within the treated cells. We found there was a trend

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increase for ROS at 1mg/ml of glyphosate concentration when treated for 4 and 24 hours. Levels of glutathione were found to be significantly decreased at the concentrations of 0.1, 0.5, and 1 mg/ml at both the 4 and 24 hour treatments. The FRAP assay resulted in a decreased trend at 1 mg/ml for the 4-hour treatment of the cells. These data suggest that glyphosate may harm the cell by decreasing antioxidant levels, leading to an increase in ROS. The research performed has significant human health relevance as it links environmental exposure to cellular changes.

48. **The Effects of Tall Fescue Cultivars on Dung Beetle Choice and Survival**

Student Author(s): Grace Crowley, Senior (Biology)

Faculty Mentor(s): Tatsiana Shymanovich (Biology)

In southeastern USA, the predominant pasture grass is tall fescue, and Kentucky-31 is the most ubiquitous cultivar. Kentucky-31 is naturally infected with microscopic fungus which produces toxins harmful to cattle but protects grass from insect herbivores. For novel cultivars, BarOptima, MaxQ, and MaxQ2, fungal strains non-toxic to cattle but possessing anti-insect properties were implemented. We hypothesized that fungal compounds remaining in cattle dung may negatively affect dung beetles, thus beetles will differentiate dung-types depending on pasture cultivar. We tested oviposition substrate preferences for two common dung beetle species. For brood ball construction, beetles differentiated the dung types in the binary choice experiments with each cultivar versus dung from an uninfected tall fescue pasture. Both beetle species also made significantly more brood balls from MaxQ2 than from Kentucky-31 dung. With dung samples collected in 2017, larval survival was not affected. However, with 2018-year samples, larvae from Kentucky-31 brood balls had lower survival than larvae from MaxQ2 brood balls. Dung beetles play an important role in dung decomposition to maintain soil nutrient cycling, fertility, aeration, and water permeability for pastures. Our findings suggest pasture renovation with novel MaxQ2 cultivar may enhance dung decomposition rates and pasture ecology by improving dung beetle wellbeing.

49. **Negotiating Imperial Legitimacy and Authority in Ottoman Cilicia, 1400-1900 CE**

Student Author(s): Bret Dang, Senior (History)

Faculty Mentor(s): Alexander Eger (History)

This presentation examines the religious and political landscape of Cilicia from the fifteenth to twentieth centuries CE and its role in legitimizing and destabilizing Ottoman claims to imperial authority. Cilicia was often referred to as the “Gates of Syria,” emphasizing the region’s importance in linking Africa, Asia, and Europe commercially and politically. Cilicia was important in the maintenance of imperial authority during the Ottoman Era, and the sultans had varying successes in integrating themselves into both the actual and the spiritual landscape as means of claiming authority. Mosque construction, road development, military fortifications, and railroad constructions were all part of a centuries-long programme in rectifying Ottoman rule in the region and the Near East due to the region’s maritime positioning and its religious importance on the *hajj* pilgrimage. However, Ottoman rule was challenged by competing polities, and from minority religious groups such as the Alevis and Armenian peoples. Pot sherd assemblages, field survey, remote sensing, and historical analysis provide evidence for Ottoman programmes of religious-political legitimization and conflicts that challenged Ottoman claims in Cilicia. Despite immense efforts to physically and temporally uphold power, the Ottomans were never able to realize absolute rule as revolts and local cultural memory persisted against Ottoman authority.

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50. **The Oncogenic Epstein-Barr Virus Alters the Expression and Localization of Cellular MNK**

Student Author(s): Alexis Davis, Senior (Biology)

Faculty Mentor(s): Amy Adamson (Biology)

Epstein-Barr virus (EBV) is a prevalent human virus that infects approximately 95% of the population and is associated with illnesses including infectious mononucleosis and cancers. Viruses have evolved to manipulate cells to aid in their replication. My lab found that a drug, rapamycin, which inhibits the cellular mTOR pathway, inhibits viral activity in B cells, yet increases viral activity in epithelial cells. The aim of this study was to identify the expression pattern and areas of localization of EBV proteins and the cell signaling protein MNK; MNK has been implicated in cancer progression, and has been shown to be activated by rapamycin. To this end, cells were treated with rapamycin, and protein levels and localization patterns were analyzed. EBV replication altered MNK expression levels and areas of localization. My most significant results were seen in epithelial cells, where MNK and EBV colocalized into large nuclear dots, suspected to be viral replication compartments; this has never been previously reported. These results differ from that seen in B cells. This implies that the virus manipulates the MNK protein in a cell-type specific manner. Thus far, my research links EBV with the overexpression and mislocalization of a potentially oncogenic cellular protein

51. **Understanding the Implications of Trendy Health Posts Depicting Diet and Exercise on Social Media and the Development of States of Unwellness in the Consumer**

Student Author(s): Autumn Davis, Sophomore (Nutrition)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Social media platforms are often used to find and produce inspirational messages. They also contribute to the growing awareness and encouragement of trends that intend to promote health. While this concept of "pro-health" in itself is harmless, sources such as a blog by Christy Harrison, MPH, RD, CDN, and select chapters in Jamieson and Romer's *The Changing Portrayal of Adolescents in the Media* since 1950, outline the need to look at how the prevalence of certain ideals, particular to health-related behaviors, affect the well-being of the consumer; especially at a time where the gap between the qualities of an average body and the image of the "ideal body" is growing wider. Social media posts that boast the successful diet and exercise routines of our peers simultaneously, even if inadvertently, praise paradigms like the "thin-ideal" and "diet culture;" this results in serious alternative mental and physical effects on the wellness of consumers and their perceptions of a healthy lifestyle encompassing diet and exercise. By sharing information about current standards and the impacts health trends can have on the well-being of consumer populations, I aim to contribute to the developing atmosphere of body acceptance and healthful living through intuitive practices.

52. **The Exploitation of Art Theft on Social Media**

Student Author(s): Kaiden Davis, Sophomore (Arts)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

When browsing through social media, very often you will come across some sort of art. Many times, it's initially posted by the original artist, but with the rise of new formats of social media and ways for companies to sell their products, a transgression known as art theft has begun to occur more and more. Art theft comes in different forms ranging from reposting original content to stealing art and selling it without the artist's permission. Whichever way it happens, art theft is a very serious offense that takes

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away the artist's credibility and deprives them of possible exposure and payment. While these misdeeds have only been going on for about a decade, it is a serious problem which has yet to be solved. For my research, I will be digging deeper into the concept of art theft on social media and try to discover new ways to help protect artists. As someone who uses social media to share my work, art theft has always been a very concerning thing to me. Currently there are no protections for artists on social media and I plan to change that.

53. **An Open-Access Geodatabase for Paleoanthropology**
Student Author(s): Adam Deese, Senior (Anthropology)
Faculty Mentor(s): Charles Egeland (Anthropology)

Research studies, especially those that attempt to synthesize vast amounts of data, are extremely labor intensive. This is particularly so in paleoanthropology, where data are scattered across journals, books, and websites. Any tool that can reduce the time it takes to gather and access data, then, will make it easier to answer broad questions about human evolution. The focus of this project is to create a paleoanthropology database that is both searchable and easy to use. We have created a framework for a "PaleoAnthroDatabase" that currently includes fields for site name, geographic location, age, and the presence and frequency of artifacts, animal fossils, and human fossils, all within an easy-to-read interface. As we continue to develop the tool, it will allow users to dig deeper with extensive information on where to find the original research referenced in the selected data point. It is the hope of this project that we provide a tool that has the depth needed for a seasoned researcher and the accessibility needed for a freshman looking to work on their first research paper.

54. **A Better Look at the ADA Laws for the Vision Impaired**
Student Author(s): Nicholas DeSimone, Sophomore (Media Studies)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Signs are not sufficient enough to people who are visually impaired. I am a person with low vision and cannot read signs from across the street. I also find I have trouble reading them inside the buildings, too. I always have to get up close to a sign to read what it says. This is what led me to research the ADA laws relating to signs. I am interested in this topic because it almost seems unfair that I cannot read a sign from a distance like most other people can. I would like to know what the ADA laws say about this problem. One secondary source that I have talks about rethinking the ADA sign standards for people with low vision. This one is especially good because it talks about the problem I want to research and possible solutions. Another one is a guide explaining the ADA laws and how they can be applied. I hope I learn information about what people could do so that a person with low vision can read signs easier.

55. **How Child Corporal Punishment Negatively Effects People Long-Term**
Student Author(s): Daijah Dixon, Sophomore (Human Development and Family Studies)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Although there is a strong amount of American cultural support for the use of corporal punishment on children and teens, I want to highlight the long-term negative effects it can have on people. I am interested in this topic because everyone has varying opinions on the effectiveness of corporal punishment on children. I want to show people, no matter their perspective, a combination of psychological, emotional, physical, and morale support for the negative side effects.

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For primary sources, I will be interviewing people with direct experience in the topic to get personal takes that textbooks can't provide. One primary source I'm using is my mom, since she can provide feedback as someone who has experienced and has used corporal punishment. For secondary sources, I'm focusing on hard data evidence, such as studies done on people and interviews with researchers in relevant fields that can provide development facts in support of the negative effects.

I think I will personally gain a better understanding of those who use corporal punishment because as an HDFS major we learn about all the negative effects it has on people short term and long term. I've always been one to want to understand why people think and feel the way they do, so I think this will help me get a better perspective on the topic as a whole.

56. **Vitamin D Dietary Intake and Serum Vitamin D in Adolescents**

Student Author(s): Lauren Dorn, Junior (Kinesiology)

Faculty Mentor(s): Laurie Wideman (Kinesiology)

Previous studies have investigated physiologic determinants of serum Vitamin D (VitD_{SER}) concentrations. However, few studies have assessed the relationship between nutritional intake of Vitamin D (VitD_{Diet}) and VitD_{SER} in adolescent populations specifically. **PURPOSE:** To investigate the relation between VitD_{Diet} and VitD_{SER} in adolescents. **METHODS:** As part of a larger longitudinal study, adolescents (N=32, 53.2% Female, 50% Caucasian) were brought into the lab for a fasted blood draw at 2 time points; T1 (age 16) and YA1 (age 19+). VitD_{Diet} was assessed using dietary recalls (NDS system) at T1 and VitD_{SER} was assessed at T1 and YA1 using ELISA. **RESULTS:** Mean VitD_{SER} [Male: Caucasian: 22.09 (±7.88) ng/ml; non-Caucasian: 18.97 (±6.29) ng/ml; Female: Caucasian 33.07 (±10.10) ng/ml; non-Caucasian: 18.11 (±5.65) ng/ml]. VitD_{Diet} at T1 was strongly correlated with VitD_{SER} at YA1 (r= 0.78), but VitD_{SER} at T1 was only moderately correlated with VitD_{SER} at YA1 (r=0.38). A linear mixed model indicated that VitD_{SER} was not different between T1 and YA1 (p=0.55). However, an interaction between sex and race was observed (p=0.03), indicating that Caucasian females have significantly higher VitD_{SER} compared to all other groups. **CONCLUSION:** As expected, non-Caucasian adolescents had lower VitD_{SER} than Caucasians.

57. **How Recreation Therapy Can Improve The Quality of Lives Within Human Trafficking Survivors**

Student Author(s): Isabelle Downing, Sophomore (Community and Therapeutic Recreation)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Recreation therapy has helped to improve the quality of life within individuals from various backgrounds for decades. For years, individuals with Major Depressive Disorder, Anxiety Disorders, and Post Traumatic Stress Disorder have all found hope and healing through guidance from recreation therapists, but until now, no one has researched the effects recreation therapy can have on a population that suffers from all three: human trafficking survivors. Therapeutic Recreation can improve the quality of life in human trafficking survivors through helping individuals create a sense of identity, providing healthy coping skills, and by allowing the development of social capital. In June of 2017, after introducing recreation to this population and seeing a tremendous improvement in progress, I decided to continue my research to ensure that other agencies that host survivors can also provide this intervention method. While using sources such as, Trauma, PTSD, Grief & Loss: The 10 Core Competencies for Evidence-Based Treatment and other similar books and articles, I will provide evidence that recreation therapy has the ability to make strides in the movement to heal the psychological wounds human trafficking survivors often bear.

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58. **Community Development**

Student Author(s): Emily Edwards, Senior (Interior Architecture), Bryan Woolard, Senior (Interior Architecture), Mirna Basellos, Senior (Interior Architecture), Navid Hajhashemi, Senior (Interior Architecture), Madeline Hicks, Senior (Interior Architecture), Zuleima Hermida David, Senior (Interior Architecture)

Faculty Mentor(s): Travis Hicks (Interior Architecture)

Tiny Houses are addressing homelessness in Greensboro. Tiny Houses Community Development, Inc. is a nonprofit organization founded in Greensboro that develops tiny housing communities throughout the surrounding areas of North Carolina. Working alongside of the association, we designed tiny house prototypes for men, women, and families temporarily experiencing homelessness within the greater triad area. Alongside of the creation of tiny houses, we made an effort to obtain the Future Fund 10 Grant, sponsored by The Community Foundation of Greater Greensboro, to renovate the Training and Recycling Center. The Training and Recycling Center produces the modular walls and casework for the tiny home communities while also giving public access to education, most specifically in carpentry skills and certification. The renovation of the center benefits the creation of tiny houses while also benefiting those residing in them with the admission to education, job opportunities, and accessible washing facilities. To ensure that the facilities and homes are accessible to the general public or those residing, research and designs were focused around the inclusiveness of the spaces with consideration to creative storage solutions. The proposed sites for the designs are located within a mile radius of UNCG's campus, allowing us to benefit and develop the community surrounding us.

59. **A Test for Everyone: HIV Screening in Emergency Departments**

Student Author(s): Melissa Edwards, Senior (Nursing)

Faculty Mentor(s): Leslie Davis (Nursing)

HIV/AIDS continues to be a global health problem, undeterred by new research or the valiant efforts of scientists all over the world. It is estimated that 1.1 million people in the U.S. are living with HIV, but a small percentage of people are completely unaware of their HIV positive status (Haukoos, Lyons & Rothman, 2018). The CDC has recommended routine, opt-out HIV screening in EDs since 2006, but only 22 % of EDs adhere to these recommendations (Gailbraith et al., 2016). Three scholarly articles were analyzed to determine the effectiveness of HIV screening and the programs' specific attributes. The best facets of an ED HIV screening program are nurse-driven and opt-out. Other components needed for an efficient program include, testing of all patients, 24/7 availability of testing, nurse champions, continuous quality improvement and staff training.

60. **Simulating a Microchip-based Stark Guide and Decelerator using Simion**

Student Author(s): Ayesha Ejaz, Senior (Chemistry)

Faculty Mentor(s): Liam Duffy (Chemistry)

Polar molecules experience a small force in electric fields given by the equation $F = -\nabla W(E)$ where $W(E)$ is the Stark energy of the molecules. The Stark energy for a linear molecule can be given by the expression $\vec{\mu} * \vec{E}$ where $\vec{\mu}$ is the dipole moment of the molecule and \vec{E} is the magnitude of the electric field. In their ground state, the molecules are high field seeking which makes them attracted to higher electric fields. In Stark decelerators, the electric fields are continuously switched between two configurations so that the location of the high and low electric fields is always changing which keeps the molecules moving back and forth. At a certain switching frequency, the molecule gets trapped. The use

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of such time-varying quadrupole electric fields has been demonstrated in the literature to trap and guide polar molecules¹. Our simulations show that the same effect can be achieved in micrometer scale devices. We have determined the appropriate switching frequencies and voltages required for miniaturized devices which can be used to accelerate and/or separate molecules by their dipole moments.

61. **Going So Far for Love: Alexander and Hephaestion's Hero Cult**
Student Author(s): Logan Elliott, Senior (History, Classical Studies)
Faculty Mentor(s): Robyn Le Blanc (Classical Studies)

When Hephaestion, Alexander the Great's boyhood friend, died in Ecbatana Alexander was devastated. He clung to Hephaestion's body, held extravagant contests and sacrificed to Hephaestion as a hero. Sacrificing to ancient heroes was not uncommon for Alexander. For example, he sacrificed to Amphilocheus² and several heroes of the Trojan War, including putting garlands on Achilles' tomb³ and other heroes elsewhere. However, Alexander's hero sacrifice to Hephaestion was different from the rest: It was very soon after Hephaestion's death, the first sacrifice to him was very extravagant, and, according to Plutarch, this sacrifice included Alexander slaughtering a group of people called the Cossaeans.⁴ This paper examines the possible reasons for the differences between Alexander's hero worship for Hephaestion and other heroes. Using Recogito I created an interactive map of every sacrifice Alexander made that I could find. These findings led me to focus on Hephaestion and what Alexander did when Hephaestion died.

62. **Trauma and Abuse Experience and Elevated Scalp Hair Cortisol Concentrations Among SE Asian Refugees in the US South**
Student Author(s): Vanessa Enoch, Senior (Human Development and Family Studies), Savannah Sommers, Post-Bac (Human Development and Family Studies)
Faculty Mentor(s): Sudha Shreenivas (Human Development and Family Studies)

Refugees seek resettlement in the United States every year with hopes of establishing a better life. Most face health, living, and economic challenges after relocation, creating an environment of chronic stress. Scalp hair cortisol concentration (HCC) is a marker of chronic stress associated with cardiovascular disease. Research shows an association between ethnically and socioeconomically diverse populations and increased HCC. Research with populations who have experienced trauma shows links between increased HCC and experiencing traumatic events. This study aimed at examining the association between HCC and the traumatic experiences of a SouthEast Asian origin population currently living in the US South.

In a CBPR based study, data were collected via face-to-face interviews with 128 adult participants to ascertain biological and behavioral information. Data included scalp hair samples, questions on experience of traumatic events and interpersonal physical and sexual violence. Results indicated that participants reporting trauma, sexual abuse and interpersonal physical violence had a higher association

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with increased HCC. This supports the need for more research on underrepresented populations to address ongoing health disparities, especially on risk factors for chronic disease. We also argue for increased access to health care including mental health services and support services for these populations.

63. **Oral Health Disparities Among Montagnard Refugee Community of Guilford County**
Student Author(s): Victoria Espinoza, Senior (Sociology), Vanessa Enoch, Senior (Human Development and Family Studies)
Faculty Mentor(s): Sudha Shreeniwas (Human Development and Family Studies)

This paper examines oral health disparities among the Montagnard refugee community. The Montagnard community first arrived in the United States in the years following the Vietnam War. After helping American troops during the war, the Montagnard were persecuted by the Vietnamese government. It was then that the United States decided to intervene and relocate the first group of Montagnard to North Carolina in 1986 under refugee status. The arrival of more refugees combined with the steady increase of Montagnard-American children born in the United States, has left the US State and Federal government with little knowledge about the size of the actual population. The purpose of this research study is to conduct a census and find possible causes of poor oral health. The research analyzes the correlation between the lack of health insurance, limited English proficiency, and socioeconomic status and poor oral health. We argue that the lack of health insurance through employers and government programs as well as the lack of interpreters that speak the tribal languages prevent the Montagnard population from receiving adequate and consistent check-ups and treatments.

64. **The Effects of the Lack of Sleep on College Students**
Student Author(s): Karen Espinoza-Argueta, Sophomore (Marketing, Entrepreneurship, Hospitality and Tourism)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Sleep is an activity that I personally enjoy however, I always felt I get too little of it and the repercussions of that were affecting my life. Therefore, I conducted research on how poor sleeping methods can potentially affect a person's mental, physical and even social aspects of their lives negatively. Jane Gauntly the author of the article "The prevalence of sleep disorder in college student: impact on Academic performance" goes in depth explaining how this generation of college students are statistically having more sleeping issues then previous generations. The reason being, that college students are trying to balance school, jobs, and their social lives. Causing young adults to put sleep at the bottom of their priority list. However, sleep should be at the very top of their list, sleep is crucial to one's productivity, your body needs a resting period where it can replenish itself. Students are turning to other methods to artificially replenish their bodies such as energy drinks or Adderall. A lack of sleep is affecting college students physically, mentally and socially, causing a depreciation to their productivity. However, there are natural methods students can use to sleep better and more effectively.

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65. **Gate City Writers: A Community-Integrated and Holistic Approach to Writing Development**

Student Author(s): Kiersten Eury, Senior (English)

Faculty Mentor(s): Amy Vetter (Teacher Education and Higher Education)

In this presentation, we share one university's five-year initiative to foster a writing community for K-12 teachers, children, youth, and young refugees through a summer writing program. The goals of the writing community are to connect research in writing education to classroom practice and to foster a community-integrated and holistic approach to writing development.

One approach we take is to consider writers' identities. Grounded in sociocultural theory, identities shape how and what people write (Clark & Ivanic, 1997); research shows that the writing identities of teachers are constructed in relation and through interaction with others such as their students (McCarthy & Moje, 2002; Hall, 2008). Thus, the question that drives our presentation is: If writing is an identity process, how can educators foster writing communities and identity work related to writing?

To answer this question, we worked with K-12 teachers across two years in a summer writing professional development. Findings indicate that teachers participated in authorship and framed their experiences as authorial identity negotiation; deepened their skill and comfort with the writing process; shifted to an asset-oriented stance toward student writing; reconsidered writing as a pedagogical act and assessment tool; and articulated theory-to-practice connections regarding writing and writing instruction.

66. **Social Class and Voting Behavior: 21st Century Changes**

Student Author(s): Kaylee Faw, Junior (Political Science)

Faculty Mentor(s): Charles Prysby (Political Science)

This study analyzes the relationship between social class and voting behavior in the United States. In the past, Democrats have been viewed as the party of the working class. However, in 2016, Donald Trump won a significant portion of the white working-class vote. This study examines changes in the relationship between social class and voting behavior, and the factors responsible for this change. The data in this study was taken from the U.S. Census and the American National Elections Studies. The results of this study show that white working-class voters are now more Republican than white middle-class voters. Although this effect was heightened by Trump's candidacy, a general trend of white working-class voters shifting towards the Republican party started earlier in the 21st century. Economic anxieties, as well as attitudes on foreign trade, immigration, race, and moral issues are all reasons for a Republican appeal to the white working-class, which once identified as largely Democratic.

67. **From Accommodation to Invitation: Roles Communication Centers Play in Acknowledging and Empowering People with Disabilities**

Student Author(s): Brianna Ferraro, Sophomore (Specialized Education Services)

Faculty Mentor(s): Roy Schwartzman (Communication Studies)

With an estimated 11% of all undergraduate students having a disability and their numbers increasing (National Council on Disability, 2015), communication centers face an escalating imperative to account for this population in physical design, pedagogical practice, and administrative processes. This study investigates two questions:

RQ1: To what extent do those working in communication centers embrace inclusion of people with disabilities (PWD)?

RQ2: How can communication centers create a maximally inclusive environment for PWDs who work in or use their services?

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The Multidimensional Attitudes Scale (MAS) Toward Persons With Disabilities (Findler, Vilchinsky, & Werner, 2007), a highly reliable survey instrument validated in several languages and cultures, was administered to a demographically diverse sample (n = 149) of communication center workers and undergraduate users of the University Speaking Center. In addition to the MAS, participants answered open-ended survey questions and participated in focus groups.

The quantitative results reveal positive emotions toward PWDs, but also avoidance due to shyness and nervousness around PWDs. Behaviorally, respondents clustered their preferred reactions to PWDs around non-acknowledgment. These findings may reflect the need to more actively stimulate direct personal interactions with PWDs to encourage engagement.

68. **Using 3D Design in V-Stitcher to Create Plus Size Clothing**

Student Author(s): Lindsey Flowers, Junior (Consumer Apparel and Retail Studies)

Faculty Mentor(s): Melanie Carrico (Consumer Apparel and Retail Studies), Seoha Min (Consumer Apparel and Retail Studies)

The aim of this project is to address common fit problems in plus size clothing, specifically jeans which tend to be made with a low-stretch fabric like denim. Fit problems with sizes over a 14 have been overlooked for years, as the fashion industry caters to small women, and anything above a straight size is seen as “too big” or “too difficult to dress”, although almost 60% of American women today fall into the plus category. This project has focused on creating jeans to fit plus sized women, working with the 3D program V-Stitcher, and implementing design elements according to information learned by interviewing several women who have firsthand experience with the issues in plus clothing. Such issues are present even in simple clothing such as jeans, and fit failures lead to frumpiness, bunching, excessive tightness, and stretchiness that hangs off the body, all of which have been target points to fix throughout the process of designing and creating these jeans. There is an emphasis on how attachments such as pockets effect overall wear of the jeans.

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69. **The Effects of Acute Cycling on Cognitive, Neurocognitive, and Academic Achievement in Children Diagnosed with ADHD**

Student Author(s): Elisa Frazier, Senior (Kinesiology)

Faculty Mentor(s): Eric Drollette (Kinesiology)

Background: Prior research indicates that during difficult mental tasks, children diagnosed with ADHD show an increase in body movement suggesting that hyperactivity may be linked to effective cognitive regulation. Thus, providing opportunities to be active during cognitively demanding tasks may serve as an effective modality for regulating attentional control in these children.

Objective: The purpose of this study is to examine the effects of acute cycling on brain function, cognition, and academic achievement in children diagnosed with ADHD.

Design/Method: Children aged 9 to 12 years old with and without an ADHD diagnosis will be recruited for this study. All participants will be placed on a stationary cycle and complete a cognitive task (while wearing an EEG cap) during and after cycling. In addition, academic achievement will be administered during cycling.

Expected Results: We anticipate that acute cycling will facilitate attentional ability, neuroelectrical outcomes, and academic achievement in children with ADHD at a level equivalent to child without ADHD.

Conclusion: Future research may benefit from these findings by supplementing the treatment of ADHD in children with exercise as opposed to medication. Many ADHD medications are costly and have troublesome side effects. Thus, exercise may serve as effective alternative treatment to facilitate appropriate behavior in a learning environment.

70. **The Linkages Between Marital Satisfaction and Anxiety: A Meta-Analytic Review**

Student Author(s): Rachel Fuqua, Senior (Human Development and Family Studies), Kaicee Beal, Post-Bac (Human Development and Family Studies), Bailey Woodruff, Post-Bac (Human Development and Family Studies), Aran Garnett-Deakin (Human Development and Family Studies)

Faculty Mentor(s): Heather Helms (Human Development and Family Studies)

The purpose of the current study is to examine the associations between marital satisfaction and anxiety symptoms using meta-analytic methods. Previous research has demonstrated a strong connection between marital satisfaction and anxiety disorders. Specifically, the presence of anxiety symptoms and disorders has been linked to decreased marital satisfaction and quality (Gana et al., 2016). Similarly, marital distress may increase anxiety symptoms or the risk for anxiety disorders, creating a detrimental cycle of distress (Whisman & Baucom, 2012). Previous theoretical frameworks have been adapted into a new model to capture the complexity of these associations. The current research project utilizes meta-analytic methods to combine and summarize the scientific literature on the associations between marital satisfaction and anxiety, making the patterns and connections between these factors more generalizable. Effects and study characteristics from all findable research articles published since 2000 are currently being coded for analysis. It is hypothesized that the meta-analytic results will support a strong relationship between marital satisfaction and the presence of common anxiety and panic symptoms, such that higher rates of anxiety symptoms will be associated with lower reported marital satisfaction. Implications of these associations are discussed.

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71. **Next: Living, Exploring, Growing**
Student Author(s): Brittany Gagné, Junior (Interior Architecture)
Faculty Mentor(s): Travis Hicks (Interior Architecture)

This office space was designed according to research of its surrounding environment and current studies today. Workplace design must respond to current research in technology, culture, effective working systems, wellbeing, lighting and materiality. The student's interior design and ergonomics research concluded that a variety of high, low, hard, and soft seating is the most effective for productive working. Visiting real estate firms and interior designers provided insight that the mixture of group and private spaces provides balance for collaboration and individual work. Technology is a large part of company culture for clients and emulating the spaces they are wanting to show them; therefore, the design provided, dual monitors, and furniture with outlet connections to larger screens. The inspiration for the work space was gathered from the people of Denver and its surrounding environment. The architectural elements, color palette and materials of the space were derived from the Front Range mountains of Colorado. Researching the city of Denver showed that a large portion of its population was sustainable and creative as many recycled, rode their bike to work, and, constructed street art. To encourage this, bike storage was made available along with recycling, incorporation of sustainable materials, enhanced natural lighting and an energetic color palette.

Withdrawn

72. **Design for Plus-Size Children**
Student Author(s): Emily Gaines, Senior (Consumer, Apparel, and Retail Studies), Lindsey Flowers, Junior (Consumer, Apparel, and Retail Studies)
Faculty Mentor(s): Melanie Carrico (Consumer, Apparel, and Retail Studies), Seoha Min (Consumer, Apparel, and Retail Studies)

The purpose of this project is to address the need for plus-size childrenswear options in the marketplace. Inadequate garment fit and lack of selection of contemporary styles are often reported as major areas of dissatisfaction with plus sized garments (Alexander, et al., 2012). Therefore, garments designed for plus size children require immediate attention from designers due to the following design problems. Specifically, for children above age 6, nearly 20% are considered obese in the United States (Hales, et al, 2017). Despite this significant statistic, there are few plus size categories in childrenswear. From my research and participant interviews, parents informed me of fit issues for their plus sized child and children's brands. From my findings, I created a kids windbreaker from the starting size of an 8 that can expand in the waist and arm width by 4 inches. With the help of separating zippers and 4 panels included in the sleeves and back and front bodices, the jacket allows the expansion in the waist while also incorporating sleeve width. To accommodate length, I have made the garment 4 inches longer than an average size 8 garment to equally account for the panels additions. To conclude, the prototype below allows for the expansion of growth that is child friendly and fashion forward.

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73. **A Meta-Analytic Review of the Associations Between Marital Dissolution and Anxiety**
Student Author(s): Aran Garnett-Deakin, Junior (Human Development and Family Studies), Kaicee Beale, Post-Bac (Human Development and Family Studies), Bailey Woodruff, Post-Bac (Human Development and Family Studies), Rachel Fuqua (Human Development and Family Studies)
Faculty Mentor(s): Heather Helms (Human Development and Family Studies)

The purpose of this study is to examine the association between marital dissolution (i.e., divorce or separation) and anxiety. Previous research has shown that individuals who experience marital dissolution are 2.5 times more likely to develop an anxiety disorder than those who remain continuously married (Chatav & Whisman, 2007). Similarly, anxiety is associated with worse marital functioning and increased risk for marital dissolution (Mojtabai et al., 2017). The current research project is informed by an adapted theoretical framework. Meta-analytic techniques will be used to combine, analyze, and summarize all scientific findings that examine these bidirectional associations between the years 2000 - 2019. Effects from these empirical research articles are in the process of being coded and analyzed. It is hypothesized that the meta-analytic results will support a strong bidirectional relationship between marital dissolution and the presence of anxiety symptoms. It is expected that the presence of divorce or separation will lead to higher rates of symptomatic anxiety and that individuals with anxiety will be at greater risk for experiencing marital dissolution. Results from this study will shed light on the bidirectional association between marital dissolution and anxiety symptoms, which will inform future research, policy, and treatment efforts.

74. **Prosocial Video Game Behavior**
Student Author(s): Reginald Glenn, Sophomore (Psychology, Sociology)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

A person can easily play video games in a group setting or by themselves, but whether a person plays alone or with others different social behaviors will arise. Some would say that playing certain video games or a person picking a certain game will lead to more aggressive behavior; however, I argue that playing a certain video game will lead to more prosocial behavior rather than aggressive behavior. I want to discover what prosocial behaviors come from playing video games, which motivates me to pursue this research. Through research and evidence, I will take a group of individuals to play one game and I will have another individual play one video game by herself to truly see what behaviors arise from the two games I picked. By using the source "Effects of Prosocial Video Games on Prosocial Behavior," I will show my audience several prosocial effects that are promoted by video games. I will conclude that video games rather than leaving an aggressive behavior that many people believe; I will support my claim by showing that video games promote more prosocial behavior on a group level and an individual level.

75. **Effects of Nurse-Driven Quality Improvement Measures on Failure to Rescue for Patients With Sepsis**
Student Author(s): Julian Gooch, Senior (Nursing)
Faculty Mentor(s): Leslie Davis (Nursing)

Background: Preventable complications caused by healthcare professionals' inability to detect a life-threatening change in condition and render aid are regarded as neglect and deemed a failure to rescue. Recognition of the early signs of sepsis by nurses may help expedite diagnosis and treatment, thereby mitigating failure to rescue.

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Methods: Three original studies assessing nurse-driven quality improvement (QI) measures on sepsis mortality and morbidity within an adult intensive care unit (ICU) population from failure to rescue were evaluated. A PubMed and CINAHL search using keywords was done to locate articles published within the past five years.

Findings: One quasi-experimental research study and two QI studies were identified in the search. Each study evaluated nurse-specific education on the early signs of sepsis, which allowed for a more rapid diagnosis and treatment. Communication with providers and buy-in from leadership were crucial in each of the initiatives. Collectively these nurse-driven measures resulted in reduced mortality from failure to rescue in all three studies with improvement noted in 7-day and 30-day survivability, decreased ICU length of stay (LOS), decreased hospital LOS, and overall lower cost of hospitalization in septic patients post intervention.

Implications: These studies favor the implementation of site specific, nurse-driven QI measures.

76. **Rooming-In to Treat Neonatal Abstinence Syndrome**

Student Author(s): Julian Gooch, Senior (Nursing), Dre'Quan Lee, Senior (Nursing), Evonne Wayne, Senior (Nursing), LaTraikeyonna Pridgen, Senior (Nursing), Bobbie Darnell, Senior (Nursing)

Faculty Mentor(s): Leslie Davis (Nursing)

In-utero exposure to opiates causes neonatal abstinence syndrome (NAS), characterized by gastrointestinal, respiratory, autonomic and central nervous system disturbances in exposed infants. Rooming-in is a non-pharmacological intervention that has been shown to reduce the severity of symptoms associated with NAS ultimately reducing the dosage of morphine and the length of stay (LOS) within a neonatal intensive care unit (NICU). This poster presentation will present findings from an evaluation of five original research studies assessing nurse-driven quality improvement (QI) measures on rooming in within a NICU population from NAS. A PubMed and CINAHL search using the keywords *non-pharmacologic intervention*, *nurse-driven quality improvement*, and *neonatal abstinence syndrome* was done to locate articles published within the past five years. Each study evaluated the nurse-specific intervention of rooming in on the treatment of NAS. Communication with providers and buy-in from leadership were crucial in each of these initiatives. Collectively these nurse-driven measures resulted in reduced need for pharmacological treatment, decreased LOS, & decreased cost in NICU infants with NAS. Limited knowledge is known on the effects of breastfeeding versus formula feeding on LOS and morphine use. Future research should focus on factors associated with rooming-in and collecting more cost data.

77. **Acute and Chronic Hormonal Adaptations to Exercise**

Student Author(s): Michael Grant, Sophomore (Kinesiology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Hormones are chemical messengers in the body that elicit responses in cells. Hormones and the amounts present in the body can have a large effect on physical and emotional health of an individual. Physical activity has long been understood to be variable in regulating the balance and secretion of certain hormones. This means that exercise can be used as a means of controlling and targeting specific responses in the body. When paired with other strategies, exercise can improve quality of life to an even greater degree than if just used alone. Exercise induced adaptations can lead to improved mood and long term health. Using sources such as *The American Council on Exercise* and articles from the US National Library of Medicine database *PubMed Central*, I will illustrate the results of exercise and its relationship to hormones in the body. I also explain the ways in which exercise can be useful for achieving individual

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goals. The results of this research are intended to help the reader understand the endocrine response to exercise and to explore ways in which exercise can be used a tool induce positive changes in people's lives based on science.

78. **Digital Stone Project: Sculpting with Robots in Italy**

Student Author(s): Karena Graves, Senior (Arts)

Faculty Mentor(s): Patricia Wasserboehr (Arts)

The Digital Stone Project (DSP) is an international collaboration with the company Garfagna Innovazione in Gramolazzo, Italy, that brings artists, educators, architects, and students to the Tuscany region for technical training on CNC machines, 3d software programs, stone-carving demonstrations, Autodesk-sponsored workshops, and lectures on cutting edge technology. The DSP provides a state-of-the-art digital facility equipped with computers, software, 3d printers, and 7-axis robotic carving arms. The program was founded in 2005 by Jon Isherwood who is at the forefront of digital sculpture and is highly respected in the field of fine art for his groundbreaking work that combines technology with traditional materials and techniques. Currently, Karena Graves is enrolled in an independent study and capstone sculpture and ceramics courses offered by the School of Art that are developed with the four Global Engagement SLOs in mind. Karena is designing a prototype for a unique sculpture using newly acquired skills in 3D modeling software by furthering her research into architecture, the human body, and shoe structure in symbolic ways to inform her sculpture compositions. At the culmination of the workshop, Karena's sculpture will be included with all DSP participants in an international exhibition in the Tuscany region of Italy.

79. **Cellular Uptake of Carbon Nanodot in THP-1 Human Monocytes**

Student Author(s): Claire Griffith, Senior (Biology), Lena Smith, Graduate Student (Biology)

Faculty Mentor(s): Zhenquan Jia (Biology)

Cardiovascular disease (CVD) is the leading cause of death worldwide. Many types of treatment options are currently available but include side effects that inhibit quality living for many people. Carbon nanodots are novel carbon nanoparticles with sizes below 10 nanometers and have appeared in the world of nanoparticles over the past decade. Their many features which include green synthesis methods, good biocompatibility, unique luminescence properties, and particularly their low toxicity have made them an attractive option in biomedical research approaches. In biomedical research, it is important to examine the effects of carbon nanodots on cellular uptake to determine the safety of these nanoparticles for further treatments in vivo and in vitro. In this study, we researched the cellular uptake of carbon nanodots in THP-1 human monocytes using Bio-Tek synergy fluorimeter. Fluorescence microscopy was also used to visualize the carbon nanodots intracellularly after the treatment. The results showed a dose-dependent increase in cellular internalization of carbon nanodots after these dose- and time- dependent treatments in THP-1 cells. Our results may help guide further research studies on the potential biomedical application of carbon nanodots in the treatment of cardiovascular diseases.

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80. **A Preliminary Study of Knowledge Transfer and Application of Functional Behavior Assessments and Behavior Intervention Plans in K-12 Classrooms**

Student Author(s): Jennifer Gubbins, Junior (Specialized Education Services), Holly Lail, Post-Bac (Specialized Education Services)

Faculty Mentor(s): Kara Holden (Specialized Education Services)

Many general education and special education teachers struggle with undesirable behaviors in the classroom and as a result, teachers in their first three to five years of teaching leave the profession. While there is a lot of available information on classroom behavior management, it can often be an overwhelming amount of information for teachers who are juggling planning, instruction, assessment, and paperwork. This research study aimed to identify how teachers apply their learning and knowledge of Functional Behavior Assessment (FBAs) and Behavior Intervention Plans (BIPs) and to provide behavior coaching for teachers. This study employed a single-subject across participant research design. While the study is still underway, current results include in-service teachers increasing their knowledge, skills, and abilities to analyze behaviors and implement behavior plans. Presenters discuss implications for teachers' current strategies for conducting FBAs and implementing BIPs and How does personalized behavior coaching affect teachers' ability to conduct FBAs and implement BIPs.

81. **The Cost of Autogeny in Sandflies: Does Egg Production Without Blood-Meal Reduces Fitness?**

Student Author(s): Nima Hajhashemi, Senior (Biology)

Faculty Mentor(s): Gideon Wasserberg (Biology), Tatsiana Shymanovich (Biology)

Phlebotomus papatasi sandflies, vectors of old-world Cutaneous Leishmaniasis, need a blood-meal for egg production. However, they are also capable of autogeny, production of eggs without blood-meal. Autogeny enables females to reproduce even where hosts are sparse. However, the ecological costs of autogeny are poorly understood. We hypothesized that autogenous females will produce less eggs and that the quality of their offspring (in terms of egg mass, body size, survival and fecundity) will be reduced compared with blood-fed females. Half of females from the same cohort were blood-fed on a mouse and the other half used as autogenous controls. Then, some flies were dissected to count developed eggs, and the rest placed in rearing pots to lay eggs, where larval growth was monitored. We observed that the proportion of gravid females, and egg production was higher for the blood-fed group. Egg mass, hatching rate, larval survival, and pupae mass, and offspring fecundity were not different. However, larval development time was longer in female larvae produced by autogenous mothers. Our results indicate that, as expected, not taking a blood-meal mainly reduces female's reproductive output and also delays larval development time. Yet, it does not seem to affect offspring quality.

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82. **Co-Occurrence of Activity-Related Behaviors and Fluid Consumption among African American College Freshmen**

Student Author(s): Meghan Harduk, Senior (Kinesiology)

Faculty Mentor(s): Jaclyn Maher (Kinesiology)

Background: Lifestyle choices made in college can impact future health behavior engagement in adulthood. The aim of this study was to examine momentary relationships between activity-related behaviors and fluid consumption (FC) in African-American freshmen.

Methods: Participants (n=50) completed a 7-day study answering questionnaires 5 times/day on a smartphone. Questionnaires assessed moderate to vigorous physical activity (MVPA), sedentary behavior (SB) and FC within the previous 3 hours. FC options were water, sugar sweetened beverages (SSB), milk, coffee, alcohol and other.

Results: MVPA, SB and FC were reported on 11.1%, 82.8% and 66.1% of occasions, respectively. For FC occasions, water was consumed on 65.6%, SSB on 44.4% and all other fluid types reported on $\leq 8.2\%$ of occasions. When participants reported MVPA, they also reported consuming water on 69.5%, SSB on 44.9% and all other fluid types on $< 12\%$ of occasions. When participants reported SB, they also reported consuming water on 64.8%, SSB on 45.3% and all other fluid types on $\leq 8.1\%$ of occasions.

Conclusion: FC co-occurs with PA and SB at similar rates in African-American freshmen. It is unknown if the volume of reported FC meets current health recommendations.

83. **Analyzing Inequalities Using Quantitative Data Analysis: Aid To and From Family Members by Immigrants in College**

Student Author(s): Jonathan Harris, Senior (Sociology)

Faculty Mentor(s): Arielle Kuperberg (Sociology)

The educational experience of immigrants in the United States may differ from that of non-immigrants with regards to how each group provides aid to, and receives aid from family members while in college, revealing aspects of inequalities in the college experience. This paper examines various types of financial transfers between college students and their family members and how they differ by immigration status. Types of financial transfers examined include whether family members: helped students make tuition or loan payments, paid for unexpected expenses, provided health insurance, gave assistance with utilities and credit card payments, rent payments, or provided a regular allowance.

Variables used to measure transfers from students to family members are whether students: babysat family member's children or let family members live with them during college, and whether these services were done for free, and whether students gave money to family members while in college. Data was collected from a 2017 survey examining how over 3,000 college students pay for and experience college at The University of North Carolina at Greensboro and Rutgers University - Camden. Results were analyzed using logistic regressions that controlled for gender, race, class, highest level of parent's education, and for each university where data was collected.

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84. **Tobacco Ads: What Messages Are They Sending in Minority Communities?**

Student Author(s): Keia Harris, Senior (Public Health Education)

Faculty Mentor(s): Carrie Rosario (Public Health Education)

African Americans suffer disproportionately from higher rates of tobacco-related diseases than their White counterparts and often have a higher density of tobacco advertisements in their communities, despite similar or lower rates of tobacco use. Prior tobacco advertising research suggest the use of three main messaging strategies: reassure use is safe despite health risks, redirect attention from health risks to other product features, or incite bravery to use despite health risks. However, few studies have investigated the use of these messaging strategies within advertisements in African American communities. Therefore, this study examined if tobacco advertisements used reassurance, misdirection of attention, or inducement to bravery and whether these messages varied by product type (e.g. cigarettes, cigarillos, e-cigarettes). We obtained a list of Greensboro tobacco retailers from CounterTools.org STORE MAPPER and selected 25 stores within census tracts based upon percent Black population. Only advertisements for the top brands (e.g. Newport, Swisher Sweets, Blu) of each product type (e.g. cigarettes, cigarillos, e- cigarettes) were assessed. Preliminary analyses of 165 advertisements indicate that misdirection of attention was used as a messaging strategy more often than reassurance or inducement to bravery. Our findings suggest the importance of continued public health interventions to educate consumers and policy interventions to limit misleading messages and density of tobacco advertisements within minority communities.

85. **Gender Differences in Reported Affiliation and Liking for Gender Ambiguous Individuals**

Student Author(s): Kestyn Harris, Senior (Psychology), Andrea Yuly, Post-Bac (Psychology)

Faculty Mentor(s): Janet Boseovski (Psychology)

Children show in-group biases for members of their own gender category (e.g., Martin, 1989). It is unclear whether these biases extend to gender ambiguous individuals (i.e., who do not appear to belong to a binary gender category). We compared children's beliefs about gender ambiguous people to their beliefs about men and women. One hundred and six 5- to 8-year-olds reported their liking and desire for affiliation for a gender ambiguous character and a gender-stereotypical character matched to participant gender. Results revealed a significant participant gender by character interaction for liking, $F(1, 87) = 14.12, p < .001$, and desire for affiliation $F(1, 87) = 25.14, p < .001$. Boys reported similar liking and desire for affiliation for both characters, but girls reported lower liking and desire for affiliation for the target compared to the stereotypical character. Some research suggests that girls demonstrate a stronger in-group bias than boys by 8 years of age (Powlishta, 1995). It is possible that a strong in-group bias arises at an earlier age for girls when the target is ambiguous. By investigating gender ambiguity, one can determine whether children's biases against out-group members extend to people who exist outside of categorical definitions.

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86. **LGBT World Cinema**

Student Author(s): Gabriel Hastings, Sophomore (Media Studies)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Representation itself means much more than the appearance of certain characters in media, it also relates to experiences being shown alongside traditional storylines. Often, within the U.S., the discussion around LGBT representation stems mostly from American viewpoints. Although Hollywood is certainly a dominating force when it comes to manufacturing cinematic entertainment, many countries outside of the U.S. have thriving film industries. India is responsible for Bollywood, which is a huge part of Indian culture. Japan, China, South Korea, and other Asian nations are responsible for many popular films and shows, not including the films that never made it to the international market. Using sources such as Schoonover and Galts *Queer Cinema in The World* and an article from NBC News titled, "11 International Films to Watch at the NewFest LGBT Film Festival," I intend to introduce different perspectives into why our discussion on representation must expand beyond the walls of the western world. This is not meant for a discussion within the academic field, rather, I will attempt to broaden the discussion between individuals on the ground level, namely college students. Discussing representation without allowing other parts of the world their own representation is in and of itself hypocrisy.

87. **The Benefits of Natural Medicine Compared to Pharmaceutical Options**

Student Author(s): Destiny Hayes, Sophomore (Public Health Education)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

While the goal of medicine is to heal, natural and pharmaceutical medicines use different methods of treatment, with natural medicine being healthier for your well-being. I am interested in this topic because as natural medicine becomes more popular, people are beginning to question the dominance of pharmaceuticals. Being that pharmaceuticals are created using experimentation, there can be reactions to the ingredients that can cause irreversible damage. Also, some pharmaceuticals are known to not have any effect on your ailment which wastes money, but natural being more affordable makes it better for all classes of people. Natural medications carry a lower risk of detrimental effects resulting from using these methods instead. Using the insight from my interviewee, I have evidence of converting from pharmaceuticals to natural methods of healing is better. Using sources like *Bad medicine; Pharmaceuticals*, articles, testimonials, medicine reviews, recalls, and observations to gain more information on medicine. I conclude that natural medicine is the best method of treatment because it is natural, less expensive, less harmful, and more effective than pharmaceuticals. This research will discuss the significance of practicing natural medicine, as well as how pharmaceuticals can be negatively effective; which will help an individual choose what's best for their well-being.

88. **The Blurred Lines of Cultural Appropriation**

Student Author(s): Midori Hill, Sophomore (Computer Science)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Culture is a way of life. It includes values, beliefs, customs, languages and traditions. Culture is reflected in people's history, in their heritage and in how they express their ideas and creativity. Through having a sense of culture, people develop a sense of belonging. When it comes to expressing oneself through style, music and language the line between cultural appropriation and cultural appreciation lies in where credit is given and how the culture is accurately portrayed respectfully. Especially in the black community, the book by E. Patrick Johnson, *Appropriating Blackness* helps to give insight on how a

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specific community and culture is targeted and appropriated. I aim to gain a clearer understanding of what Black culture is and how people express themselves through style, music and language and where the boundary lies between someone showing their appreciation of something and misrepresenting/disrespecting culture through appropriation. Many people do not think of this topic often or its effects and implications on Black culture and Black people. It has also become a growing issue, especially among many celebrities and brands who have been accused of cultural appropriation while they claim it is appreciation. Black culture is more than a trend or “aesthetic”, it is filled with a history that is often untold and forgotten and then misrepresented.

89. **80s Aesthetic Impact on Claymation for Television**

Student Author(s): Malanah Hobgood, Senior (Art History)

Faculty Mentor(s): Elizabeth Perrill (Arts)

In this presentation, I discuss how 80s aesthetics and the second golden age of TV allowed for the expansion and diversification of clay animation in television. The popularity of TV allowed for increased commercial budgets. Brands wanted to take advantage of 80s aesthetic thus looking to clay animation to attract consumers. I provide historical background knowledge of clay animation, 80s culture, and 80s TV. Also provided, is an introduction into specific clay animation techniques and the production studio responsible for clay animation expansion into television. I will go into further detail on why clay animation is a viable medium for brands which concludes my presentation.

90. **Synthesis of Photodynamic Therapy Ligands**

Student Author(s): Rachel Hodges, Junior (Biochemistry)

Faculty Mentor(s): Sherri McFarland (Chemistry)

There is a demand for new approaches to cancer therapy. Photodynamic therapy (PDT), an underutilized cancer therapy, is a promising alternative to existing therapies that has the advantage of being tumor-specific. PDT utilizes a light-responsive compound, a photosensitizer (PS), that is activated with light to undergo a photodynamic reaction, which produces singlet oxygen and kills cancer cells. Photofrin, an organic PS, is the only FDA-approved PS for cancer therapy, but it has some flaws that could account for the lack of PDT as a primary cancer therapy. Advances to PS design that might make PDT more widely applicable include: activation with near-infrared light, oxygen-independent photoprocesses, or larger phototherapeutic margins. Metal complexes complete some of these advances due to the large number of excited state configurations that are accessed with visible and near-infrared light and the ability to manipulate these excited states through rational design. Our group is interested in ruthenium- and osmium-based PSs. Our compounds involve a metal center, a chromophoric ligand to tune light absorption, and a PDT ligand to elicit photodynamic reactions. This presentation will discuss the synthesis of PDT ligands, an essential part of developing new metal-based PSs.

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91. **Can Grandeur Overcome Insecurity? Seeking Specific Astronomy Course Experiences That Can Diminish Stereotype Threat and Enhance Students' Self-Efficacy**

Student Author(s): Lindsay House, Post-Bac (Physics & Astronomy)

Faculty Mentor(s): Ian Beatty (Physics & Astronomy), Alicia Aarnio (Physics & Astronomy)

“It has been said that astronomy is a humbling and character building experience.”

-Carl Sagan.

Introductory astronomy aims to foster scientifically literate individuals who have an interest in understanding their place among the cosmos. Learning astronomy is not only humbling; we claim it can also help students overcome insecurities and self-doubts, including those that arise from gender and racial discrimination. But what specific knowledge, realizations, or experiences best facilitate this? In order to find out, we are conducting a study to track introductory astronomy students' class-by-class motivation and sense of self-efficacy, detect any changes, and determine what specific experiences or topics in the course provoked them. We hypothesize that certain elements of experiences throughout the astronomy course can have a notably strong impact on students' self-efficacy, by allowing them to abate feelings of social categorization. Currently, we have developed survey questionnaires that are being administered to high-enrollment introductory-level general astronomy courses. Applied to volunteers from an introductory astronomy course, these should let us gauge overall changes in students' interest, motivation, and self-efficacy, and attribute changes to specific course experiences.

92. **Millennial Campus**

Student Author(s): Tyson Howlett, Senior (Interior Architecture), Mackenzie Rifkin, Senior (Interior Architecture), Renee Rodriguez, Senior (Interior Architecture), Caylin Prillaman (Interior Architecture), Isabella Migliarese, Senior (Interior Architecture), Samantha Fellmann, Senior (Interior Architecture), Jacob Hurst, Senior (Interior Architecture), Zachary Hodgins, Senior (Interior Architecture)

Faculty Mentor(s): Travis Hicks (Interior Architecture)

The Millennial Campus initiative at UNC Greensboro will be a way to spark partnerships and collaborations in and around the community in order to create a unique academic experience for our students. The campus will bring inspiration to new research and creative endeavors, promote economic growth, innovation, and cultural enrichment. Finding your way to UNCG will be easier with a new entrance at the corner of Tate and Gate City. New businesses, studio spaces, and student apartments is what you will find at the south end of campus as a result of our collaborative research and design proposal. A health and wellness center in partnership with Cone Healthcare will allow expansive research and give students opportunities to learn first hand in an inclusive environment with innovative technology and resources. An art gallery featuring local artists and student pieces will become a community destination for expression. The campus focuses on walkability, pedestrian oriented layouts that allows students and members of the community to safely and easily navigate the new features of the Millennial campus. This Millennial Campus will allow those throughout the community to collaborate and thrive to create something truly unique in our region.

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93. **Unveiling ‘The Quit’ Journey: Ecological Barriers and Facilitators to Smoking Cessation on a College Campus**

Student Author(s): Cameron Hoyle, Junior (Psychology)

Faculty Mentor(s): Carrie Rosario (Public Health Education)

Tobacco use remains the leading cause of preventable death and disease in the US (CDC, 2012; USDHHS, 2012). Findings from national surveillance surveys reveal that 18.7% of full-time college students reported cigarette use; 16.9% reported hookah use; and 17.6% reported smoking small cigars in 2016 (Schulenberg et al., 2017). Despite higher than optimal usage rates among this at-risk population, the collegiate years may also serve as a window of time in which to alter trajectories of tobacco use (Villanti et al., 2016). In fact, 51% of college smokers either quit or want to quit (McClure et al., 2013). Due to limited, recent progress in reduction of tobacco use amongst young adults, this study aims to identify barriers and facilitators to tobacco cessation on a college campus. We analyzed the websites of 192 four-year, US public universities for cessation resource availability and conducted focus groups and/or interviews with undergraduates who reported wanting to quit. Preliminary findings support our premise that the collegiate environment provides an unique context that serves as both a barrier and facilitator to successful quits. Moreover, our website analysis suggests that more can be done to encourage, support, and make visible the quit journey on college campuses.

94. **Spatial Cueing Effects on Memory for Event Changes**

Student Author(s): Caroline Infante Arismendi, Senior (Psychology), Sydney Cody, Post-Bac (Psychology)

Faculty Mentor(s): Chris Wahlheim (Psychology)

People change their appearances, opinions, and everyday routines. Everyday changes can impair observers’ memory for the recent actions of others, unless those changes are detected and later remembered (Wahlheim & Zacks, 2018). This has implications for theories of cognitive aging, as older adults show greater episodic memory deficits when recalling changed information. The present experiment examined whether older and younger adults’ memory for detecting features that have changed across episodes could be improved by directing attention to those features. Participants watched two movies depicting an actor performing everyday activities on separate “days” in her life. For some activities, the actor performed the same general action but used a different object. Participants were told to focus their attention on the changed objects when an arrow pointed to them and a bell sound played. Both age groups remembered cued changes more than uncued changes. However, participants’ memory for recent objects benefited more from uncued changes. These findings suggest that pointing out changes can improve memory but self-generated change detection may still be ideal.

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95. **Do Health Behavior Relationships with Depression Symptoms Vary across Racial Groups?**

Student Author(s): Oluwaseyi Isijola, Junior (Public Health Education)

Faculty Mentor(s): Suzanne Vrshek-Schallhorn (Psychology)

Previous research has associated poor health behaviors with depression symptoms. Further, there is evidence that racial minorities experience greater life stressor exposure than white individuals, which may contribute to health disparities. Paradoxically, some evidence shows that African Americans manifest lower levels of depression than white individuals. This study investigates how relationships between health behaviors and mood symptoms vary across demographic groups. We hypothesized that (1) less engagement in health behaviors will be associated with depression symptoms on average across racial/ethnic groups, (2) the relationship between health behaviors and depression symptoms will be weaker in African American participants compared to White participants. Participants are UNCG students. Participants completed questionnaires examining demographics, health behaviors (smoking, nutrition, sleep duration, and exercise), and a scale indexing current depression symptoms. Linear regressions will test whether health behaviors associate with depression significantly differently by racial group, a Health Behavior x Race interaction. This study will help elucidate how health behavior and depression symptom relationships vary by race.

96. **Method Development for Measuring Stress Level Using LC-MS**

Student Author(s): Han Jiang, Senior (Biochemistry)

Faculty Mentor(s): Norman Chiu (Chemistry)

Earlier studies have shown either chronic or acute stress could lead to cardiovascular diseases and negatively affect our mental health. Among many hormones in the human body, cortisol, which is released from the endocrine system, has been linked to various psychological stressful conditions. Since human hair has shown the capability of storing certain chemicals including cortisol over a period of time, our research group has developed an analytical method to measure the amount of cortisol in hair samples by using liquid chromatography-mass spectrometry (LC-MS). Comparing to other methods, the LC-MS method provides a higher accuracy on identifying cortisol while providing comparable sensitivity. The amount of cortisol from a hair sample can be analytically determined from a calibration curve of cortisol standard with known concentrations. For future studies, this method will allow us to measure and compare long-term cortisol production, and waives the need for frequent blood draws from participants or patients. To people whom have suffered from Cushing syndrome or any stress-related issue, all it needs is a simple hair sample to find out the amount of cortisol that has been produced over a period of time.

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97. **Temperature Dependence Studies of Chloride and Nitrate Function in the Light-Induced Catalytic Production of Oxygen by Photosystem II During Photosynthesis**

Student Author(s): Trey Johnson, Senior (Chemistry), Patrick Macarilay, Junior (Chemistry/Biochemistry and Physics)

Faculty Mentor(s): Alice Haddy (Chemistry)

Photosystem II (PSII) is the light-absorbing protein complex of plants and cyanobacteria that produces oxygen at a catalytic Mn_4CaO_5 cluster. PSII is ultimately the source of nearly all of the oxygen that we breathe; researching the oxygen-evolving complex of PSII will lead to a better understanding of its water-splitting mechanism/process. Chloride is an anion cofactor required for oxygen evolution with a possible role in proton transfer. We have observed the temperature dependence of chloride and nitrate activation of oxygen evolution by monitoring K_M , a value indicating how saturable an enzyme. Our studies display a correlation of increasing K_M with temperature in PSII over a range of 20 to 32°C. This evidence supports the idea of a decrease in anion binding affinity as temperature increases, which may be related to denaturation in the enzyme. Study of the effects of chloride and other ions in PSII will lead to a better understanding of how chloride serves to promote the light-dependent catalytic production of oxygen.

98. **The Fat and Protein Composition of Donor Human Milk**

Student Author(s): Zari Johnson, Senior (Nutrition)

Faculty Mentor(s): Maryann Perrin (Nutrition)

DHM provides preterm infants with critical nutritional support, as well as immune protection against infections and life-threatening disorders such as necrotizing enterocolitis. Current information on the nutrient composition of DHM is limited. This research seeks to describe the variability of total fat and total protein in bottled donor human milk from human milk banks. It is especially important that preterm infants receive adequate calories and protein to achieve a normal growth rate. Instructions and collection cups were sent to the 20 milk banks that signed up for our study. We asked them to complete a questionnaire and collect 15 samples from 15 unique pools of unpasteurized, donor milk that was intended for NICU use. Data presented in this study represent 180 samples of DHM collected from 12 milk banks. The results for percent total fat (average, median, minimum, maximum) were 3.64, 3.53, 1.19, and 14.63, respectively. The results for total protein (g/dl) were 1.36, 1.34, 1.08, and 1.88. These results illustrate an extensive variability of macronutrients in bottled DHM, which suggest an inconsistency in infant preterm nutrient consumption. Sources of this variability are not well understood and warrant further investigation.

99. **Progeria - A Disease Hidden in the Shadows**

Student Author(s): Alena Jones, Junior (Biochemistry)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Hutchinson-Guilford Progeria Syndrome (HGPS) is a rare disease from a mutation in the Lamin A gene in children. It causes premature aging in children along with cardiovascular disease, alopecia and other symptoms. Progeria is a mutation in the Lamin A gene that causes damage to children in many ways, although it is often overlooked by the scientific community in lieu of other more well-known diseases. While millions of people are affected by other known diseases, people affected by Progeria are in the shadows waiting to be known. I would like to give people knowledge about what this disease is, and

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why it is important. All diseases need to be invested in so people will not have to suffer. From using sources such as the books *Atlas of Genetic Diagnosis* and *Counseling and Inborn Errors of Development- the molecular basis of clinical disorders of morphogenesis*, and website Progeria Research Institute, I will be able to give people knowledge about Progeria and why I'm studying it. From studying this disease, other discoveries made can be beneficial to other sicknesses. These people affected by Progeria deserve to be known just like anyone else affected by a more-known disease.

100. **Two Warring Ideals in One Dark Body**
Student Author(s): Amari Jones, Senior (Dance)
Faculty Mentor(s): Ana-Paula Hofling (Dance)

Identity defines the deepest parts of the human soul and gives a person's life meaning. Identity is both conscious and subconscious, seen and veiled. However, for black Americans, our identity is muddled, mixed with American and African cultural values. We cannot just be American and we cannot just be black. Each of the terms are separate, almost ubiquitous identifiers, that on their own cannot define me or others like me in a contemporary American society.

I will present my research through the lens of a dancer, a choreographer, a black American, and a woman. This lens enables me to discover double consciousness in my choreographic work "You Only Hear Me When I'm Yelling" and also in Camille A. Brown's "Black Girl: Linguistic Play". These two dances, created by unaffiliated choreographers, both examine the American Black woman's experience. The goal of this research is to locate and aestheticise performed double consciousness by analyzing the use of stage space, movement vocabulary, and overall arch of the two choreographies. My research will result in a dance film that exemplifies the performance of double consciousness, asking how double consciousness is communicated on stage, and if can be used to empower American black women.

101. **A Tragic Love Story: Uncovering the Beauty of Black Hair**
Student Author(s): Kailah Jones, Sophomore (Entrepreneurship)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

It is through the black community's worship of the Afrophobic European beauty standards that allow this internal hate for one's own natural black hair texture to prevail.

For centuries within the black community, hair has been a quality in which can determine one's beauty, professionalism, and character. I am interested in this topic because it gives me an opportunity to start the conversation about black hair and its beauty. I argue that the spread of Europeans Afrophobic ideologies is what controls how minorities define beauty. Using sources like *Hair Story: Untangling the Roots of Black Hair in America*, I aim to educate the reader on the culture and politics behind Black hair from fifteenth-century Africa to the present-day United States, tying the personal to the political. The purpose of this paper is to be used as an educational tool when one goes to discriminate, address, or appropriate black hair.

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102. **Classical Music Isn't Dead: How to Format an Old Tradition for the Current Times**

Student Author(s): Sharneisha Joyner, Senior (Music)

Faculty Mentor(s): Jason Wallace (Music)

As a composition student who will soon be graduating, I began doing research on how I would be able to use my degree to the best advantage and begin the process of using what I love to do to make a living. With an interest in film music but also a desire to create my own individually lead projects, I began the research of how an up-and-coming classical composer could maintain their identity while also competing with the history of past classical composers. In this research I created a plan to also study how current composers such as Thomas Bergersen and Joe Blankenburg were able to create albums of classical music that sounded like film music but were stand-alone I also studied how they were able to market it on platforms that were more accustomed to popular music genres. The product of this research lead to the composition and release of my own introductory Extended Play where I put all of the knowledge that I gained into my own professional life and used this to gain even more opportunities as a composer collaborating with film and dance.

103. **From Beginning to End - The Journey of a Written Work of Music**

Student Author(s): Sharneisha Joyner, Senior (Music)

Faculty Mentor(s): Alejandro Rutty (Music)

As a classical composer, one of the biggest and most interesting jobs that one can receive is a commission. This is usually a request from the leader of an ensemble of musicians or a coalition of multiple different ensembles who request a brand-new piece to be written specifically for a special occasion. In this project, I experience the commissioning process from beginning to again. I note the beginnings of research that a composer would do to create a story line for a programmatic musical work for Wind Band. I explain the editing process that happens between writing and why certain musical ideas are used. I then explain the process of acquiring musicians to rehearse and perform this work. I go through the steps of the rehearsal process and show the final product which was the premiere of the work during my Senior Composition Recital on February 16th 2019.

104. **Shelf-Life Study of Goldenseal**

Student Author(s): Manead Khin, Senior (Chemistry)

Faculty Mentor(s): Nadja Cech (Chemistry)

Hydrastis canadensis, commonly known as goldenseal, is a perennial herb that is native to southeastern Canada and eastern United States. The extract of goldenseal is bioactive due to the alkaloids present and has been used as a folk medicine for treatments of infection. However, these types of medicinal plants may also face degradation if not stored properly. The purpose of the study is to analyze the stability of known and unknown metabolites of goldenseal during exposure to different storage conditions, using untargeted metabolomics and mass spectrometry. The research project focuses on identifying the chemical changes in the content of goldenseal using under different temperature conditions ($30^{\circ}\text{C} \pm 5^{\circ}\text{C}$ as high temperature, $20^{\circ}\text{C} \pm 5^{\circ}\text{C}$ as room temperature, and $4^{\circ}\text{C} \pm 5^{\circ}\text{C}$ as low temperature) or different light : dark cycles (16 hours : 8 hours, 12 hours : 12 hours, and 0 : 24 hours), or different sample conditions (powdered version of the roots, and actual roots). This shelf-life project is a six month study, where each month is treated as one time mark.

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105. **Visualizing Guilford Courthouse's Revolutionary Landscape Through Historical Archaeological Research**

Student Author(s): Dianna Kidd, Senior (Archaeology)

Faculty Mentor(s): Linda Stine (Archaeology)

Guilford Courthouse National Military Park, a National Historic Landmark, was the site of a significant Revolutionary War battle. On March 15th, 1781 the British and American forces clashed. Both sides used the courthouse as a visual landmark during the conflict. Although numerous scholars have sought the correct placement of the Third Line of battle, or of the actual Guilford courthouse, no one has definitively isolated the courthouse lot, or the building's foundations. Learning the location of the actual structure and its lot through deed research, creation of a composite survey map, and cartographic comparison to geo-archaeological data will offer comparative data for investigators who are determined to accurately interpret the Battle of Guilford Courthouse. A large-scale map compiled from survey and deed records will be compared to already existing historical archaeological data and landscape features to deduce the proposed location and shape of the courthouse's lot.

106. **Changes in Joint Angles from Virtual Reality Training Correlates with Foot Clearance Metrics**

Student Author(s): Michael Kress, Senior (Kinesiology)

Faculty Mentor(s): Christopher Rhea (Kinesiology)

Successful obstacle negotiation is crucial for safe walking strategies. A reduced ability to safely negotiate obstacles may lead to an increased risk of foot-obstacle contact, which can lead to an increased risk of injury from a fall. Our previous work has shown that training to more safely cross virtual reality (VR) obstacles transfers to a real-world obstacle crossing task. However, it is unknown what angle strategies produce these safer obstacle crossings. The purpose of this study was to examine the relationship between hip and knee angle changes for both the leading and trailing limbs and foot clearance metrics. It was hypothesized that increased flexion of the hip and knee would correlate with increased foot clearance (FC) and peak elevation (PE). Young healthy adults crossed 10 real-world obstacles (pre-training), completed 2 sessions of 10 VR obstacles, and crossed 10 more real-world obstacles (post-training). As lead hip and knee flexion increased, FC and PE increased which was also seen with the trail knee but not the trail hip. This study indicates safer real-world obstacle crossing strategies may be produced by using VR training to change lead limb hip, lead knee, and trail knee angles.

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107. **The Social Effects of Depression on Black Women**
Student Author(s): Jayme Lawrence, Sophomore (Psychology)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Depression is extremely common and can affect anyone, and even though the landscape of mental health counseling has changed to be more supportive, there are a lot of people who don't seek help. Marginalized people are more likely to develop depression than non-marginalized people. Black women are deeply affected by depression, but not a lot of them seek therapy or counseling. Reasons behind this include: fear of judgement, shame, a busy schedule, lack of funds, etc. **The expectation that black women are supposed to be strong pillars of their community further emphasizes the stigma of seeking therapy; it only increases shame, guilt, makes mental illnesses worse and downplays the importance of mental health.** I've been interested in this topic for a while because I've had my own personal struggles with depression and anxiety, and I didn't know anyone with depression that looked like me. Sources I'm planning on using like *In and Out of Our Right Minds...* show me that society has made progress in the treatment of mental illnesses, but stereotypes still remain. Black women don't need to strong all the time, they can feel hurt and vulnerable just like anyone else.

108. **Preventing the Transmission of Methicillin-Resistant Staphylococcus Aureus in the Hospital Setting: Perspectives from Health Care Workers**
Student Author(s): Dre'Quan Lee, Senior (Nursing)
Faculty Mentor(s): Leslie Davis (Nursing), Yolanda VanRiel (Nursing)

As the leading cause of nosocomial infections in hospitalized patients, Methicillin-resistant Staphylococcus Aureus (MRSA) is associated with increased morbidity and mortality. This poster presentation will include findings from a literature review exploring health care workers' perspectives towards MRSA transmission prevention practices. Preliminary results of this ongoing literature search indicate that some health care workers are more confident about their knowledge of MRSA transmission and prevention practices than others. Barriers to adherence of prevention practices were identified including lack of knowledge, time to implement known prevention measures, decreased staff to patient ratios, and being afraid or insecure with working with patients who were on MRSA precautions. In addition, studies that compared direct observations of prevention practices to self-reported adherence rates showed health care workers overestimated their adherence. Knowledge of first-hand experiences of health care workers, including whether self-reported adherence aligns with observations by researchers, will provide information that can be used to develop education and skill building interventions to decrease transmission of MRSA by health care workers. These interventions need to include ways to increase comfort level of health care workers when working with patients who have MRSA, especially those with less training (such as ancillary nursing staff).

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109. **The 311 System as a Civic Engagement and Citizen Satisfaction Tool for Municipalities: The Case of the '311 City Link' Program in Winston-Salem, NC**

Student Author(s): Shayla Lee, Senior (Political Science)

Faculty Mentor(s): Hunter Bacot (Political Science)

The purpose of this research is to examine the 311 system as a means for the City of Winston-Salem to engage citizens in government decision making, as well as to assess citizen service requests to determine the resulting, if any, equities in reconciliation of requests and the representativeness of service reports within the city. I aim to focus on understanding, what services citizens want and need from their local government by reviewing types of data and information available through such a system:

1. number and types of information requests,
2. number and types of service requests,
3. time taken to complete service requests,
4. percentage of service requests completed within a targeted timeframe,
5. geographic location of service requests, and
6. trends in citizen requests over time.

Such data availability provided insights into the provision of service responsiveness relative to location (through census tract neighborhood block data) that speaks to civic engagement through enfranchising citizens by giving them a voice in expressing service resolutions for their neighborhoods. The methods still being evaluated include case studies infused with mixed-methodologies (such as demographics, crime, housing, and similar municipal-level data) to assess the roles and successes, if any, of the program.

110. **Representation of Women Throughout Material Evidence in Caesarea Maritima**

Student Author(s): Margaret Leone, Senior (Classical Studies)

Faculty Mentor(s): Robyn Le Blanc (Classical Studies)

This paper focuses on the exploration of the material evidence of women at Caesarea Maritima, a city in the Roman province of Syria Palaestina, modern day Israel, from the 1st to 5th c. CE. Focusing specifically on coins, sculpture and inscriptions representing the lives of Roman women in this area. Through this research we can develop questions about the daily lives of women and their place in Roman society. By combining the archaeological evidence from Caesarea Maritima with other evidence of Roman women in the Near East, we can trace archaeological and sociological themes throughout this area. Omeka, an online database program, allows us to see this evidence as a whole, as well as giving this project a format to display the evidence in a way that can be clearly interpreted and examined. This project will allow us to compare depictions of women within different forms of material evidence and draw some conclusions about the representation of women in Caesarea Maritima.

111. **American Sign Language Sociolinguistic and Strategic Performance Assessment (ASLSSPA): A Pilot Study**

Student Author(s): Jacob Lipps, Junior (Specialized Education Services)

Faculty Mentor(s): Campbell McDermid (Specialized Education Services)

American Sign Language is a popular language of study in American post-secondary institutions (Furman, Goldberg & Lusin, 2010). However, it is a difficult language to master (Jacobs, 1996). Most research has examined how students learn the vocabulary, grammar or phonology of ASL (Baker,

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Idsardi, Golinkoff & Petitto, 2005; Hoemann & Keske, 1995; von Pein, 2003). This pilot study, however, utilized a Discourse Completion Test created to examine sociolinguistic and strategic performance. These terms were operationally defined as the behaviors demonstrated by an individual to, for example, seek clarification or to initiate or terminate a conversation (Canale & Swain, 1980; Hymes, 1972). The performance of students who had taken ASL level One or Two was compared to that of students with no prior experience with ASL.

112. **Autism in Pop-Culture**
Student Author(s): Daniel Lopez, Sophomore (Accounting and Finance)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

I'm analyzing and critique ASD portrayals in recent pop-culture to see if ASD is being misrepresented to the general public.

Throughout pop-culture there have been quite a few characters portrayed with ASD. However it's important to depict those character as accurately as possible as to not misinform the viewers and spread a false image of ASD. I believe that recent portrayals of ASD have been not only inaccurate in recent years, but harmful. As someone with ASD it has always annoyed me when I see a character with ASD and instead of a person that engages in repetitive behavior, and engages in a strict routine we instead see a robotic savant that seems unable to feel human emotion or understand any social norms. One of my primary sources Imagining Autism by Sona Lotifs discusses several ASD characters and deconstructs them and how their actions in there respected stories paint an unrealistic depiction of people with ASD. These common character traits surrounding characters with ASD and research into how people with ASD actually act will be the crux of my arguments. Hopefully I can learn more about my disorder and in doing show educate my audience on how people with ASD truly act instead of the lies they see on TV and film.

113. **"Foster Care Alumni Success in Higher Education"**
Student Author(s): Melissa Lore, Senior (Psychology)
Faculty Mentor(s): Ashleigh Gallagher (Psychology)

Individuals who have been in foster care typically achieve lower success rates in higher education than those who have not been in foster care (Gillium, 2016). The purpose of the study was to examine some of the psychological factors that may be important to the success of this population in higher education. We hypothesized that individuals high optimism and resilience would have higher rates of success and that these factors would be particularly important for individuals who had been in Foster Care. We surveyed participants who were formerly in foster care as well as participants who had not been. Our samples came from both local samples (NC) and national samples. Participants completed questionnaires about their personalities, optimism and resilience levels, their education, and experiences in foster care. Results of this survey indicated no differences in the level of education completed between former foster care and non-foster care individuals; however, there were differences in group levels of optimism and resilience. Further, we observed differences between the groups in Big 5 characteristics. Future directions include using a larger sample, investigating the ways personality traits interact to affect educational outcomes, and investigating potential reasons for low response rate among former foster care participants.

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114. **Cancel Culture: Destroyer of Celebrities But How Does It Affect You?**
Student Author(s): De'Viona Lowery, Senior (Consumer Apparel and Retail Studies)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Have you ever seen someone be “canceled”? Does the meaning of the term allude you? The act of cancelling is typically described as one of withdrawing from someone or a particular group whose personal, political, artistic, etc. expression was once praised or at least tolerated, but isn't anymore. It is known to involve celebrities and companies who have said, done, or supported something that is seen as offensive to some social mores. My stance is that Cancel Culture although somewhat effective for addressing flaws in our morality can actually negatively enforce mob like mentalities leading to unhealthy social interactions online, which can then effect relationships in the real world. As an avid social media user I couldn't help but to see the term everywhere I scrolled and before I knew it I was hearing it being used against those within my own social group as well as in class. I was curious how social media users including myself took practices from participating in Cancel Culture into our interactions with others. I plan to gather my findings in writing by implementing sources such as *The Social Psychology of Group Cohesiveness*, interviews with my peers, and first hand documentation.

115. **Be Phenomenon in Local Star ν Geminorum**
Student Author(s): Aidan Lytle, Sophomore (Physics and Astronomy)
Faculty Mentor(s): Anatoly Miroshnichenko (Physics and Astronomy), Alicia Aarnio (Physics and Astronomy)

A large number of stars in our neighborhood of the Milky Way have not been studied closely and qualitatively. One nearby star that has interesting properties is ν Geminorum, which is located in the zodiacal constellation Gemini and is visible even without a telescope. The star exhibits the Be phenomenon, which is defined as the presence of emission lines in the spectra of stars a few times hotter than the Sun and is not fully understood. We investigated over 100 spectra taken from 2014-2019 at the Three College Observatory (operated by UNCG), as well as some amateur spectra from around the world, and analyzed them using the Image Reduction and Analysis Facility and the programming language Python. We have confirmed that ν Geminorum's binary partner causes the emission coming from a disk forming around the larger star due to mass loss from its surface, eased by the gravity of the smaller star. The stars revolve around one another with a period of 54 days. This seems to imply that the Be phenomenon is more common in binary systems than expected, as they are being continuously discovered in bright stars that have been previously studied.

116. **The Impacts of Grazing on North Carolina Longleaf Pine Savanna Grasses**
Student Author(s): Kennedy Maeder, Senior (Biology)
Faculty Mentor(s): Sally Koerner (Biology)

Wire grass (*Aristida stricta*), Indian Grass (*Sorghastrum nutans*) and Mixed Big and Little Bluestems (*Andropogon gerardii*, *Schizachrium scoparium*) are grass species found throughout North Carolina. However, few experiments have been performed on these grasses from the Longleaf Pine savanna ecosystem; thus, any research conducted on them is beneficial to our understanding, particularly with the aim of helping restoration of this imperilled ecosystem.

The aim of this experiment is to compare the growth of the grasses against one another in a controlled environment, and additionally test their reactions and gather data under differing intensity levels of herbivorous grazing as they would experience in the wild. Two levels of herbivory will simulate a small

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and large presence of herbivores and grazing in the area and will be simulated by removing 20% and 60% of total leaf number respectively at set intervals. The plants will grow for approximately 8 weeks with measurements of survival, leaf length, leaf number, plant height, plant health and biomass to be examined.

This experiment will hopefully provide some insight into how these grasses recover from herbivores and the impacts their presence has on long term growth and sustainability.

117. **Assisting NICU Nurses with Compassion Fatigue Resulting from Caring for Infants with Neonatal Abstinence Syndrome**

Student Author(s): Syvanna Makin, Senior (Nursing)

Faculty Mentor(s): Denise Cote Arsenault (Family and Community Health)

Infants with neonatal abstinence syndrome from opioid-abusing mothers account for ~4% of admissions to the neonatal intensive care unit (NICU). In this paper, three research studies were examined that studied perceived stress of NICU nurses who care for these babies. In the first article researchers found that of the 129 NICU nurses surveyed, nearly 3/4 perceived stress at moderate to high levels. The second article reported the effects of problem-solving versus support-seeking strategies in 62 NICU nurses and whether depressive symptomology or burnout were reduced by using either strategy. All nurses reported secondary traumatic stress or burnout and noted support-seeking versus problem-solving skills were used more to help them cope. The third article reported prevalence and severity of secondary traumatic stress syndrome in 175 NICU nurses including five themes to characterize their stress. This paper will review these results and provide insight into how the problem may be addressed.

118. **The Lived Experience of Adults with Congenital Heart Disease**

Student Author(s): Kayla Martin, Senior (Nursing)

Faculty Mentor(s): Kay Cowen (Nursing)

According to the Centers for Disease Control and Prevention, congenital heart defects (CHDs) can affect the structure and function of a baby's heart and can vary in severity. With an increasing number of adults living with undiagnosed or untreated CHDs, the lived experience of these individuals varies. Thus, understanding the psychosocial challenges faced by this population is important. Studies have shown that adults living with CHD face mental illness, occupational challenges, limitations impacting personal relationships and self-esteem, and uncertainty about the future. For this project, original research studies and scholarly articles relevant to topic were sought and appraised. In addition, a personal reflection of living with CHD was included. PubMed, CINAHL, and Cochrane Review data bases were searched. Inclusion criteria were: articles that were peer reviewed, published in the last 10 years, that reported the lived experience of adults with CHD. Qualitative studies were targeted to reveal first hand experiences, yet other studies were included as well. Abstracts were reviewed for eligibility and article summaries were written. Preliminary findings will be presented. Knowledge regarding these experiences will help nurses and other healthcare professionals identify at-risk individuals to improve outcomes including quality of life.

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119. **Sensing the Self: Tools for a Fully Connected Life**

Student Author(s): Kylie Mask, Post-Bac (Theatre), Abigail Wilson, Senior (Theatre),
Haley Brantley, Junior (Theatre)

Faculty Mentor(s): Denise Gabriel (Theatre)

What is Sensory Awareness?

1. Sensory awareness is defined as “ an experiential study that helps us rediscover our natural birthright: that embodied felt sense of authenticity and vitality we once had as children. Sensing focuses on the cultivation of an ever deepening awareness of our sensory experience as a gateway into ourselves and into deeper connection with the world around us.” by the Sensory Awareness foundation.
2. It was brought to fruition by Charlotte Selver, who studied with Elsa Gindler, a somatic bodywork teacher in Germany.
3. For many, as we age, society becomes synonymous to conformity. This causes us to lose touch with natural instincts and intuitions that make us humans. Sensory awareness is a mindfulness practice which allows us to remember, retain, and refresh our senses. In a sense it is a getting back in-tune with the self - a rebirth and rejuvenation.

In our presentation we, (Abigail, Kylie, and Haley) will be discussing our experience at the Sensory Awareness in Action workshop in NYC. We will discuss our paths that led us to this work, why this work is important to us, and how it affects our lives - both personally and professionally in our careers. We will discuss what the work is (example above), how we explored this work during the workshop, and how it was impactful. Sensory awareness is beneficial to anyone that is open to the work which is why it is so important.

120. **A Place to Call Their Own: North Carolina College for Women’s Y.W.C.A. Hut and Campus View on Gender Roles**

Student Author(s): Sarah Maske, Senior (History)

Faculty Mentor(s): Lisa Tolbert (History)

“A Place to Call Their Own” argues the change in purpose of the North Carolina College for Women’s Y.W.C.A. Hut from a place that promoted student independence to one that reinforced traditional women’s roles, reflecting post-world war II retrenchment in women’s rights. Built by the Carpenterettes, one of the college’s student organizations, the bungalow style hut became the central place for extracurricular activities on the North Carolina College for Women’s (NCCW). This study will utilize as a main source of evidence, a variety of documents and collections from the University of North Carolina Greensboro’s Special Collections and University Archives, including scrapbooks, photographs, *Carolinian* articles, and chancellor records. Ironically located at the physical edge of campus, the hut’s architecture and spatial uses document the centrality of the hut to student leadership and social life from 1918 to 1950. Additionally comparing the NCCW’s Y hut to other college campuses, North Carolinian, and national huts to recognize the Y.W.C.A. hut as part of a Post-World War I cultural phenomenon. Specifically, comparing the NCCW’s hut to East Carolina Teachers College’s hut using the East Carolina University Joyner Library Special Collection’s newly digitize Y.W.C.A. records.

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121. **Preparation of Bias – Are Children Understanding Their Parents?**

Student Author(s): Janae Massey, Senior (Psychology)

Faculty Mentor(s): Gabriela Stein (Psychology)

Discrimination faced by minority children can lead to negative outcomes such as depression, anxiety, low school performance, and low self-esteem. Studies show that racial/ethnic socialization, specifically messages focusing on preparation for bias might act as a protective factor for minority children. Existing literature seldom focuses on Indian-American's racial and ethnic socialization processes. The present study will attempt to explore preparation for bias (PoB) messages parents are imparting and if these messages are perceived as such by the children. Frequency, methods, materials, and initiation of PoB messages will also be explored. Recognizing patterns in the conversations with the adolescents will show where and how the conversations take place as well as what is discussed in each conversation; also, what age the conversations begin or are more salient. The data was collected quantitatively using semi-structured interviews. Thematic content analysis will be used to analyze the data. Analysis is currently ongoing. The study results will aid in better understanding of PoB socialization practices within the context of Indian American families, which could be beneficial in future interventions development or studies targeting this population.

122. **Going Under the Knife: Rewriting Our Perception on Cosmetic Surgery**

Student Author(s): Ivan McAgy, Sophomore (Classical Studies)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Cosmetic Surgery has a negative perception due to the thought of its connection to vanity, but there are more important reasons people get these procedures done. The most common types of cosmetic surgery people instantly think about are rhinoplasty, breast augmentation, and botulinum toxin (Botox). For others to understand that cosmetic surgery is a broad practice, I am researching the misconceptions relating to cosmetic surgery and how it is all not for vanity reasons. It is time for us to reevaluate the views regarding the practices. I chose to pursue this topic, since I have had procedures done. They were not for vanity reasons, but for medically necessary reasons. Whenever I told people I had work done, they automatically assumed about the procedures. It is an important topic for me to research because I want to bring awareness to others about it and hopefully change the negative perception into a more positive one. Along with reading medical journals, I will be concluding research by interviewing individuals about what they believe cosmetic surgery is, interviewing board certified cosmetic surgeons, and getting insight from people who have had cosmetic procedures completed.

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123. **Better for Grieving Dogs**

Student Author(s): Tarja McDonald, Sophomore (Biology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Dogs grieving process after losing an owner or companion can be connected to dying of a broken heart because dogs don't have proper support to handle loss causing confusion and sadness which can lead to depression and eventually death.

I wanted to research this topic because I saw a video about a dog that died after losing his companion and many videos of dogs crying over their owner's death. Many people disregard dogs' feelings after a loss or don't take them as serious as comforting a human, making people blind to the signs of depression that a dog can show after a death. It is a fact that dogs handle absents of their owners or close companions with extreme panic. I argue that dogs feel confused because they have no support system after a death, this leads to extreme depression. Which can later relate to a dog dying of a broken heart. By using sources like animal plant and the American Society for the Prevention of Animal Cruelty to Animals I can find a lot of information about signs of depression in dogs. Also, information on how to support animals in this situation and the different causes of animals dying of a broken heart. This research will show how important it is to help dogs though grieving over owners/companion's and learn to help them through these losses.

124. **Transgenic Tobacco Expressing Archaea's Superoxide Dismutase Enzyme for Stress Tolerance**

Student Author(s): Kala McKoy, Senior (Biology)

Faculty Mentor(s): Ayalew Osen (Biology)

Climate change has been a hot topic in science for more than a decade. Increasing temperatures, rising levels of carbon dioxide, and droughts have caused concerns about the food security in the United States. These environmental stress factors highly affect plant growth and sustainability. To overcome the effects, plants must have the appropriate mechanisms that help them quickly identify and adapt to change. With climate change occurring so quickly and with such intensity, important crops are at risk of going extinct in the future. With the exponential progress of biotechnology, we can make plants more resilient to effects caused by the changing climate.

Sulfolobus Solfataricus is an archaea categorized as an extreme thermoacidophile, having the ability to grow and reproduce in habitats of low pH and high temperatures. One of the mechanisms responsible for these characteristics is an enzyme called *Superoxide Dismutase (SsSOD)*. It's capable of catalyzing the breakdown of reactive oxygen species (ROS). ROS is generated when a plant is under abiotic stress and causes significant damage. This research will investigate the capability of this enzyme to help plants overcome abiotic stress factors.

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125. **Their Rights Matter, Too: Violence and Discrimination Against Sex Workers**

Student Author(s): Taylor McMahon, Sophomore (Psychology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Sex workers have been subjected to violence and discrimination for as long as we can remember. When I talk about sex workers, I am referring to consenting adults who use their body to make money for a living, primarily sexual favors. This includes: street workers, webcam models, feature dancers (i.e. strippers), adult film stars, escorts, etc.

My belief is: “If they’re of legal age, consenting, and not hurting anyone, why do they deserve to be subjected to violence, discrimination, and pure hatred?”

Sex workers come from all lifestyles, backgrounds, and communities. Those who are sex workers are usually working in this position to make ends meet; they’re not being forced or “pimped out” (human trafficking, for example, is illegal and a complete violation of human rights, therefore this does not qualify as sex work). Minorities (i.e. people of color) and members of the LGBT community are at an even higher risk for violence in the industry of sex workers.

I believe that sex workers deserve the same general respect and rights that everyone else has, regardless of one’s personal opinion. Why should it be your business if they’re not hurting themselves or anyone else?

126. **Disconnecting Devices: Connecting With the Five Senses to Communicate With Your Environment**

Student Author(s): Maniya McNeal, Sophomore (Communication Studies)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

While walking around campus I notice how nearly everyone is on their phones or listening to music or both. Instead of observing, I started using my phone less and became more aware of my surroundings. After making those observations I thought about how important it is to always have your 5 senses at the ready for communication and general safety. I realised that if people were ever in any danger then they would not be able to sense it because of their attention being on their devices. I argue that people should disconnect from their devices in social environments to be able to rediscover how their senses help them communicate with and stay aware of their surroundings. While researching this topic I found great sources such as *The Scientific American* and the book *The Psychology of the Integral Society* by Michael Laitman that helped me better explain how communication works through the 5 senses and how it is so important. Communication is an integral part of the advancement of society and I want to encourage humans to reconnect with each other and their environment.

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127. **How a Dedicated Career in the Competitive Fighting Game Scene Can Positively Affect Your Life**
Student Author(s): Timothy McWilliams, Sophomore (Psychology)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Though video games are often labeled a time-waster, America's competitive fighting game scene is growing rapidly. People frequently travel across borders to compete in events that foster healthy competition, regional pride, and the continued existence of "arcade culture", a community celebrating joy, freedom, and individuality. I have been competing semi-professionally for over three years, and I argue that participating in the fighting game scene is a worthwhile endeavor that can improve your life in ways which include, but are not limited to, faster cognitive function, social maturity, and self-awareness. To support my argument, I will be interviewing fighting game professionals, as well as referencing "The Will to Keep Winning". This autobiography was written by the "beast" of Street Fighter, and the man credited as the first professional fighting game player, Daigo Umehara. With these sources, backed up by studies by the APA about the positive effects of video games, I will conclude that a career in the world of fighting games, though risky, can be both rewarding *and* enjoyable.

128. **Catiline: A Madman or A Man Made Mad?**
Student Author(s): Casey Melton, Senior (Classical Studies)
Faculty Mentor(s): Robyn Le Blanc (Classical Studies)

The Catilinarian Conspiracy of 63 BCE was an event that shook the consulship of Cicero. This conspiracy was supposedly set up by a man named Lucius Sergius Catiline. The plan? To assassinate Cicero and burn down Rome, with Catiline taking the leadership from the ashes of the city. Cicero famously defamed Catiline in front of Roman senate on November 8th, 63 BCE, causing Catiline to flee Rome. For centuries, the words of Cicero in that famous speech have been taken at face value, especially by ancient historians writing after the event took place. However, it begs the question of whether Catiline was the monster Cicero made him out to be. Was Catiline planning to destroy Rome for the sake of power? Or was Cicero exaggerating the situation for the sake of a quicker reaction from the Senate? Was Catiline a power-hungry madman, or a victim of circumstance? These are the questions that this essay tries to answer.

129. **Traumatic Brain Injury Stemming from Intimate Partner Violence: The Occurrence and Lasting Effects**
Student Author(s): Breana Melvin, Senior (Communication Sciences & Disorders)
Faculty Mentor(s): Kristine Lundgren (Communication Sciences & Disorders)

Intimate partner violence (IPV) and traumatic brain injury (TBI) are two circumstances that have been occurring for years. Recently more research on traumatic brain injury has been conducted because of the growing media coverage of effected football players and war veterans. While there is new research immerging about the topic of traumatic brain injury and its results, one group of people are being left out in the discussion; survivors of intimate partner violence. The findings from literary reviews about traumatic brain injury stemming from intimate partner violence confirms the intersection between the two topics. Through research, it has been shown that TBI from IPV has lasting cognitive and emotional effects. The numerous results from a TBI have a great impact on a woman's quality of life. With traumatic brain injury from intimate partner violence having different factors such as patient misdiagnosis and socioeconomically increased risk factors, more research is needed on the topic.

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130. **The Triad Nepalese Community Center Renovation**

Student Author(s): Faye Milford, Senior (Interior Architecture), Kimberly Bracht, Senior (Interior Architecture), Manqi Liu, Senior (Interior Architecture), Hyerim Powell (Interior Architecture), Ariana Wilson, Senior (Interior Architecture)

Faculty Mentor(s): Travis Hicks (Interior Architecture)

The Triad Nepalese Community Center (TNCC) provides a space that allows people from Nepal, Asia to come together to promote Nepalese culture, identity, and tradition. They are the largest community center for the people of Nepal in the United States. The TNCC celebrates festivals, events and fundraisers to support their community. They have Sunday school and summer camps for the youth and children to learn more about their heritage. The center is currently situated on an old community pool site in the heart of a neighborhood in High Point, NC. The TNCC has been raising funds to build a community assembly building with a temple on the land. This renovation is inspired by their cultural background, history, architecture, religion and the fusion of American and Nepalese culture. Our vision is to create a space for them to celebrate their heritage, explore their culture, and enter their spiritual realm.

131. **From 3D Modeling to Robotic Stone Carving**

Student Author(s): April Miller, Senior (Arts)

Faculty Mentor(s): Pat Wasserboehr (Arts)

April Miller was selected through a highly competitive application process to attend a month-long digital stone carving workshop in Gramolazzo, Italy. The Digital Stone Project is a unique international collaboration with Garfagnana Innovazione, a state-of-the-art digital facility equipped with the latest innovations in digital stone fabrication technologies. April worked directly with Pat Wasserboehr to create an original design in Blender 3D. The small-scale 3D model was printed from a Makerbot 3D printer, to be used as a reference in Italy. The stereolithographic file was evaluated by Gabriel Ferri, a Garfagnana Innovazione engineer, to be rough-cut in marble with a seven-axis robotic carving arm. April spent one-month finishing her marble sculpture “Binky,” while learning hand carving technologies on-site. Inspired by baby toys, “Binky” represents the emotional exhaustion of validation that impacts the physical queer body. She finds comfort in the ambiguity of abstraction, utilizing surreal and organic forms to express the sensual and visceral intimacy of embodiment; while speaking to issues of agency, desire, and consent. April’s work was featured in an international sculpture exhibition from July 1 - September 16, at Villa Bertelli in Forte dei Marmi, Italy.

132. **The Ineffectiveness of a Four-Year University**

Student Author(s): Christian Moss, Sophomore (Computer Science)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Students seeking economic success and stability should avoid attending a four year university as university’s costs rise and heavily generalized form of education fail to prepare students for the work field. Universities have been shown in many cases to produce graduates who on average make more than those with little to no college. However, factors such as average graduation rates for first year students barely meeting 50%, rising post college debt, and the questionably effectiveness of many university curriculums show 4 year universities to be a poor choice for freshly graduated high school students. While there is some merit to the well-rounded education based around the accumulation of knowledge, that colleges provide, it is far from the most efficient path to career success. As a college student, with

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younger siblings who will soon be looking to colleges as they leave high school, By using sources like the articles from *Chronicle of Higher Education* and *Christian Higher Education* to conclude that attending a 4 year university is a poor investment for those leaving high school.

133. **Cultural Perspectives on Adolescent Mental Health for Congolese Families in Two Western Countries**

Student Author(s): Esther Mununga, Senior (Psychology)

Faculty Mentor(s): Gabriela Livas Stein (Psychology)

The purpose of this study is to analyze the help-seeking behaviors of the Congolese population in North Carolina and Belgium. In non-white immigrants communities there is cultural stigma around seeking professional psychological-help, which is very much present in the Congolese community. This study looked at the Congolese community in Wake and Guilford counties in North Carolina and the large influx of Congolese-Belgians in the Brussels; Belgium provided a great opportunity to analyze qualitative data across borders. There were about 6-10 participants at both sites who completed the study. Firstly, they were given a demographic questionnaire where we gained the knowledge about their household size, education level, economic status, etc. Following the questionnaire, we conducted interviews with each participant where they were read three scenarios of adolescent behaviors according to different mental disorders. After each scenario, the Congolese parents gave their thoughts and beliefs on what occurred in each story and what would they do to solve the presented situation. From the results we were able to receive more knowledge about the Congolese community and their values and morals. This study can help the future researchers and therapists in the psychology field on how to approach this community effectively.

134. **TITLE: [Insert School Name]**

Student Author(s): Kathryn Murphy, Sophomore (Psychology)

Faculty Mentor(s): Janet Allard (Theatre)

Columbine, Sandy Hook, Stoneman Douglas, Santa Fe, and now [Insert School Name]. It's bound to happen again with the direction our country is going. Laws have been passed in states, but nothing national has happened to help prevent another tragic school shooting. Around the time we were writing our proposals last year, the Stoneman Douglas shooting happened, and then the Santa Fe High School shooting shortly after. I immediately knew I wanted to write a play on the topic because by the time the piece would be finished, most of the nation would have moved on, and they have. This play is a reminder to the world, and to me, that this problem is still relevant. We can't just grieve and scream for action, then let that scream slowly turn into a whisper before allowing it to ultimately become silence. [Insert School Name] is blunt and, although fiction, is absolutely true. While the title is read as [Insert School Name], you should also read it as the action of inserting your own school's name because one thing is true: It can most definitely happen to you. So, when are you going to work towards preventing it?

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135. **Analyzing the Effect of Idealized Reception of Characters on Relationships Between People to Convey the Importance of Looking at Another Holistically**
Student Author(s): Tennah Murphy, Junior (Languages, Literatures, and Cultures – German Studies)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

With the growth of media and heightened social interactions, it is important to look at how fictional characters exist in social situations. Furthermore, one must remember that humans naturally compartmentalize different aspects of their lives to create a sense of order. This is interesting even though it seems counterintuitive to understanding someone holistically, and their social position. I argue that this natural compartmentalization can become dangerous when idealizations of good or evil are applied to flawed characters. Due to unrealistic expectations of someone's character, this idealization is damaging to relationships because of the impossibility of being solely good or evil. Given this, analysing a flawed character in full provides an example for healthier relationships where people are more understanding towards others because they are no longer bound to one dimensional assumptions. In order to show this, I will use characters from Arthurian Legend, with an analysis on good and evil, much like Fenchel's *Good and Evil*, compartmentalization, how a character is written, and the application of traits to oneself and others. Through this I hope to show that analysing media is essential to understanding those different than oneself so that they find more Tolerance within society.

136. **Depression in African Americans**
Student Author(s): Aby Musa, Sophomore (Nursing)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

From slavery, to oppression, Black people were born to have hard times, and get through it stronger than they went in. But, once someone of color especially African American men express their unhappiness they do not automatically assume that they are depressed. They try to find other reasons that may be the cause of this empty feeling. Black Men are expected to hold their head up high and get through that rough day, but depression is more than that. Black Men either deny that they have depression, or they'll wait until it's too late. I've personally seen people that I love go into a depressive state, but they would never admit to themselves. According to John Head *Black Men and Depression*, he states that "African American men specifically are less likely than White men to go to a doctor before they are in poor health." this issue has gone on for too long, African American men cannot keep misleading themselves when they could have a better life. This research will show that Black Men have a harder time coping with depression and admitting their depression.

137. **Do Residential Learning Communities Support Student Engagement in Difficult Conversations about Differences?**
Student Author(s): Lauren Nelson, Sophomore (Public Health Education)
Faculty Mentor(s): John Sopper (Grogan College)

My research tests claims about the effectiveness of RLC's as a "high impact" practice that supports students' development of "essential learning outcomes for "21st century learning" (AAC&U, 2007, Kuh, 2008). As the opportunities for community building and sharing (especially outside of class) are considerably increased when a learning community is both curricular and *residential*, it seems RLCs would have the greatest impact on students' development of teamwork and intercultural competency. However, the literature on using classroom discussion to facilitate learning about differences raises important concerns about creating environments that effectively encourage all students to participate

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(Boler, 2004). These concerns are especially relevant to RLC's where students typically develop relationships that extend beyond the classroom. This raises the question to what extent students in RLC's perceive themselves as less or more likely to engage in difficult conversations across differences, and if these perceptions are related in students minds to their participation in an RLC.

Methods:

- Literature review
- Focus groups
- Follow-up individual interviews

138. **MAMA (Mindfulness Arts Mindfulness Action)**

Student Author(s): Michael Newman, Senior (Theatre), Jordan Speas, Junior (Theatre), Steve Williams, Junior (Theatre), Auntais Faulkner (Theatre)

Faculty Mentor(s): Denise Gabriel (Theatre)

MAMA (Mindfulness Arts Mindfulness Action) is an art group focused on using mindfulness and sensory awareness to create socially conscious pieces of art, specifically theatre, as well as taking our work out to the community in an effort to spread mindfulness and sensory awareness within the community we serve. Our work has been geared toward prison recidivism and empowering local youth. During the Fall 2018 semester, MAMA held a class at Triad Stage that combined acting lessons and sensory awareness to children of incarcerated parents as well as other teenagers to guide these young people toward a healthier sense of communication and collaboration with the people in their lives. We also will be performing an excerpt of the play *The Brothers Size* at the Expo and are currently working to perform this piece at a prison here in Greensboro. Directed by Professor Denise Gabriel and performed with the help of actors Steve Williams Jr. and Auntais Faulkner, this piece explores the effects prison has on both the individual psyche of former inmates and the impact prison has on familial relationships. We believe this is an important piece of theatre that should be seen by our community.

139. **The Role of Organic Matters Extracts and Conspecific Eggs in Effecting *Phlebotomus Papatasi* Sand Flies Egg Hatching**

Student Author(s): Hieu Nguyen, Senior (Biology)

Faculty Mentor(s): Gideon Wasserberg (Biology), Dannielle Kowacich (Biology)

Leishmaniasis are a group of diseases that are transmitted via the bite of a sand fly vector. A significant problem in controlling these vectors is the lack of information on their natural breeding habitats. Studies in Dr. Wasserberg's lab have shown that female sand flies prefer to lay eggs in environments rich with organic matter (OM), which can serve as food for hatched larvae. There is also a preference for laying eggs in habitats with conspecific eggs present. However, it is not clear how OM and conspecific eggs effect egg hatching rate. This study tested the hypothesis that egg hatching rate will be affected by chemical cues originating from OM and conspecific eggs as indicator of a suitable breeding site. Egg hatching rate in the presence of OM was examined by incubating single eggs (one per petri dish) or group of eggs (15 eggs/jar) with or without extract of larval frass. The effect of conspecific eggs proximity on egg hatching was tested by manipulating the spread of a fixed number of eggs (16, either clumped or evenly distributed in a rearing jar). Preliminary results suggest no effect of OM on hatching rate. No results for conspecific eggs are available yet.

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140. **Racism in the Beauty Industry**

Student Author(s): Jana Nolen, Sophomore (Human Development and Family Studies)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

The beauty industry has a racist undertone to that is shown in the foundation shades that many brands sell. I'm passionate about equality and feel that everyone should have the right to feel beautiful in their own skin and be able to walk into any store and find at least one shade that makes them feel beautiful. Sadly, this is not the case for many Americans because the majority of shade ranges don't include a variety of darker skin tones. To get a full understanding of this, I will be looking at sources such as the book *The Global Beauty Industry* to learn some background information on how the beauty industry got its start as well as a few websites such as *Vogue* and *Seventeen* to help me understand how the media is responding to this topic, as well as other sources. I hope to learn why brands would market this way and why it is taking so long for the equality seen in some brands to become universal. I argue that makeup brands becoming more inclusive would not only help anyone interested in makeup feel more confident, but it would also help shape a better society as a whole.

141. **Black, But Not Too Black: Black Women and Colorism Within Television and Film**

Student Author(s): Malaika Nzau, Sophomore (Media Studies)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

The depiction of black people in the media has a long history full of racist caricatures and archetypes that dehumanizes black people as a whole. However, there are numerous times when black people are depicted in a positive light, but these moments mostly occur when the black characters have a lighter skin tone, and this is especially prominent among black women in television and film. As a media studies student, I believe it is important to analyze how fiction reflects reality and vice versa. Colorism is a problem that affects black women in both reality and media, with positive portrayal of black women stemming from those with light skin being the norm versus positive portrayal of dark skin black women being a rarity. Using C.K. Steele's peer-reviewed journal, "Pride and Prejudice: Pervasiveness of Colorism and the Animated Series Proud Family," as well as other peer-reviewed journals, books, and websites, I will inform readers about the history of colorism and the differentiating representation of black women depending on their skin tone. I will argue how prominent colorism is within the entertainment field and how it negatively impacts black women and how they are viewed by others in both reality and fiction.

142. **Making a Neural Circuit Work Without Oxygen**

Student Author(s): Bianca Okhaifor, Junior (Biology)

Faculty Mentor(s): Joseph Santin (Biology)

When the brain is deprived of O₂, injury and life-threatening conditions inevitably follows. This is especially true in clinical conditions such as stroke. Some animals have evolved ways to combat anoxia, such as bullfrogs because they have a collection of neurons that undergo hibernation during O₂ deprivation. Specifically, the function of neurons increases their tolerance to anoxia by 5-fold after hibernation. Although oxidative phosphorylation fuels the brain's activities such as synaptic transmission and regulating ions, another form of ATP production must take over to transform this circuit to perform

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without O₂. Therefore, I hypothesize that increased anaerobic glycolysis leads to protection of brainstem circuit function after hibernation. To test this, I will determine whether glycolysis is increased in the brainstem once frogs come out from hibernation and then determine how long this energetic shift lasts. Transforming the brain to maintain an adequate energy supply is one hurdle that must be overcome before we can help patients who may be at risk for suffering the consequences of O₂ deprivation in the brain. We can learn from a neural system that already reaches this goal.

143. **Transglobal Refugee Living Experiences: Post-Resettlement Housing Conditions and Concerns of Congolese Mothers with Children and Families**

Student Author(s): Lunda Onesias, Senior (Psychology), Valerie Nkansah, Post-Bac (Chemistry and Biochemistry)

Faculty Mentor(s): Sharon Morrison (Public Health Education)

In North Carolina, resettled Congolese refugees, many of who previously lived in camps, are often placed in low cost apartments due to limited cash assistance from Refugee Resettlement programs. The quality and conditions often vary, posing safety and health challenges for occupant families. This study examined portrayal of refugee living circumstances in the aftermath of a tragic apartment fire that claimed the lives of five siblings of a recently resettled Congolese refugee family. We specifically assessed media portrayal of the housing experiences and concerns of Congolese community, particularly mothers with children who lived in the vicinity of the fire incident. We performed content analysis to identify news media reporting patterns about the house fire and housing conditions, and also assessed media which framed broader and emergent issues around post-resettlement housing practices. We reviewed and analyzed 50 news reports from local newspapers as well as analyzed data collected via participant observation and conversations with mothers/families that were relocated several months after the fire. We report our findings and discuss these in the context of implications for refugee resettlement for safe, affordable and socially acceptable living conditions for the well-being of Congolese refugee mothers, children and families.

144. **Synthesis of Novel Chiral Carbene Ligands with Potentially Chelating Substituents**

Student Author(s): Chioma Onokalah, Sophomore (Chemistry)

Faculty Mentor(s): Terence Nile (Chemistry)

Carbenes, R₂C:, have been postulated as intermediates in organic reactions for over 100 years. Only recently has it become routine to easily synthesize carbenes that are stabilized by co-ordination as ligands to transition metals. These carbene transition metal complexes have proved to be excellent catalysts for a variety of important reactions. Our attempts to synthesize novel carbene ligands that are chiral and contain hemi-labile methoxy groups will be reported.

145. **The Prevalence of the Color Blue during the Minoan Bronze Age in Greece**

Student Author(s): Alexandra Pardo, Junior (Classical Studies, Anthropology), Kathy Ly, Freshman (Biology)

Faculty Mentor(s): Joanne Murphy (Classical Studies)

This paper explores the socio-political value of the color blue during the Greek Bronze Age (ca. 1700-1490 B.C.) at the palatial site of Knossos on Crete and the Minoan-style settlement at Thera on the nearby island of Santorini. The prevalence of the color blue in Minoan society begs the question whether

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its ubiquity related to its affordability and accessibility or if it had deeper cultural significance. Our research illustrates the pigments' monetary value, accessibility, durability, and religious importance. We based our study on reports from XRF (X-ray fluorescence) analysis on pigments from wall paintings from both Knossos and Thera, the cultural contexts of the paintings, the images depicted, and the origins of the pigments. XRF analysis indicates that three different pigments were used to create the blue that was used in the wall paintings: one imported pigment, Egyptian blue that was a synthetic pigment that was expensive and durable pigment, and two local pigments, glaucophane and riebeckite that were more accessible and cheaper, but less durable. Our contextual analysis shows there were significant differences in the chronology of use, the distribution patterns, and in the social functions of the pigments. Thus, in this paper we show the color blue had pervasive cultural significance in the Greek Bronze Age.

146. **A Binary Unrelated Question RRT Model Accounting for Untruthful Responding**
Student Author(s): Ryan Parks, Junior (Mathematics and Statistics),
Amber Young, Senior (Mathematics and Statistics)
Faculty Mentor(s): Sat Gupta (Mathematics and Statistics)

Estimating the prevalence of a sensitive trait in a population is not a simple task due to the general tendency among survey respondents to answer sensitive questions in a way that is socially desirable. Use of Randomized Response Techniques (RRT) is one of several approaches for reducing the impact of this tendency. However, despite the additional privacy provided by RRT models, some respondents may still provide an untruthful response. We consider the impact of untruthful responding on binary unrelated question RRT models and observe that even if only a small number of respondents lie, a significant bias may be introduced to the model. We propose a binary unrelated question model that accounts for those respondents who may respond untruthfully. This adds an extra layer of precaution to the estimation of the sensitive trait and decreases the importance of pre-survey respondent training. Our results are validated using a simulation study.

147. **Health Implications Associated with the Use of Social Media**
Student Author(s): Calvin Patton, Sophomore (Management)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

In the rapidly changing world it is becoming more important than ever to stay digitally connected to the world via social media. With a rise in the extensive usage of social media particularly among teenagers it is important to understand and take note of the negative health risks that are associated with extensive usage such as poor social performance and feelings of isolation. Among the adults in the United States that use the internet "23% used a social networking site" according to (Chou, 2009, p. 4) which makes this method of communication a powerful factor in the everyday life. As a daily user of social media myself I find it is important to analyze what the effects of social media have on the health of its users. Using sources such as the article *Social Media Use in the United States: Implications for Health Communication* from *The Journal of Medical Internet Research*, literary works, and a field test, I wish to educate those who use networking sites to determine what a "healthy dosage" of social media would look like. By knowing the risks and signs associated with the over usage of social media allows for better management of one's mental health.

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148. **The Effects of Childhood Sexual Abuse on Black Men**
Student Author(s): Ryan Peace, Sophomore (Political Science)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

About one out of every six men have been sexually abused by the age of 16. The psychological effects which include depression, anxiety, dissociation, isolation, and low self-esteem can be felt by all victims. However, African American men have an extra layer of societal stigma that they have to deal with as victims of sexual abuse. As pointed out in "*The Greatest Taboo: Homosexuality in the Black Community*," various articles, and victim testimonials, there are many unspoken rules and toxic stereotypes that are deep-seated in many African American households and the black community in general. The existence of these rules and stereotypes are key to why so many black men don't feel comfortable about coming forward about their sexual abuse experiences. This topic is important to me because there are so many victims out in the world suffering in silence because they are afraid of the ramifications that may come about when they share their stories with their family or authorities. Bringing awareness to this issue in my research will hopefully change many people's misconception that men can't be victims of sexual abuse, as well as call out the African American community for protecting predators and punishing/blaming victims.

149. **Nitrogen Levels for Successful Wiregrass Restoration**
Student Author(s): Jamie Phelps, Senior (Environmental and Sustainability Studies, Biology)
Faculty Mentor(s): Sally Koerner (Biology)

The longleaf pine savanna (LLP) houses a high level of plant diversity in its understory, yet sadly this ecosystem has been decimated with only 3% of its historic extent remaining typically in marginalized in nutrient poor soils. However, North Carolina has high levels of nitrogen (N) deposition, and these are ever increasing due to anthropogenic causes. Wiregrass, a dominant and keystone grass species in the LLP, has a symbiotic relationship with a mycorrhizal fungus. This relationship makes Wiregrass a good competitor under low nutrient conditions as the mycorrhizae provide the plant with increased nutrients while the grass provides the fungi with carbon. N deposition could potentially alter the importance of this symbiotic relationship. We manipulated soil N levels (0, 1, 2, 3.5, 5, 7.5, 10, 15, 20, 30g/m²) to observe survival and growth in Wiregrass that has and has not been treated with a fungicide to remove the mycorrhizal association. In addition to weekly measurements, at the end of two months, aboveground production and belowground production will be measured to examine allocation patterns. We hypothesize that at low levels of N, the control plants will grow better than the fungicide treated ones; however, at some point as N increases, the fungicide treated plants will grow better than the control plants.

150. **The Evolution of Managing and Financing Healthcare**
Student Author(s): Za'Darius Phifer, Sophomore (Biology)
Faculty Mentor(s): John Sopper (Grogan College)

Managing and financing healthcare in the United States has evolved over time. Currently, healthcare has come to be financed in several major ways--through direct private payments by patients, through private health insurance, employer provided insurance, and through government programs such as Medicaid, Medicare, and the Affordable Care Act. The organized delivery of healthcare has also evolved from relying on independently owned and operated professional partnerships made up of a small number of healthcare professionals, to large "managed care" systems that employ hundreds of healthcare

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professionals as salaried employees. Through an extensive review of current literature and government websites, my research examines and documents the history of these developments in the organization, delivery and financing of healthcare.

151. **Nurse Practitioner Knowledge and Use of Complementary and Alternative Therapies for the Management of Chronic Pain: A Pilot Study**

Student Author(s): Courtney Phillips, Senior (Nursing)

Faculty Mentor(s): Susan Letvak (Adult Health)

Background: Over prescription and misuse of opiates in the treatment of chronic pain in adults can result in patients becoming dependent on opiates for pain relief. In adjunct with current regulations on opiate prescribing practices, complementary and alternative medicine (CAM) practices should be incorporated into the plan of care.

Purpose: The objective of this poster presentation is to describe the knowledge of NPs with regard to the integration of CAM therapies and their recommendations to patients (if any) on the use of CAM to decrease the misuse of opiates in the treatment of chronic pain.

Methods: A descriptive survey design was used to elicit the treatment and referral practices of NPs and their knowledge pertaining to CAM. An online survey was delivered via Qualtrics to a convenience sample of up to 20 practicing NPs.

Results: Preliminary findings (n= 13) from ongoing data collection and survey response analysis suggests that NPs have minimal to fair knowledge of CAM therapies in which they obtained through continuing education and their own research of the topic.

Discussion: NPs are ideally positioned to educate patients on the use of CAM therapies but either have minimal knowledge on the subject or are unaware of how to access these resources for their patients.

152. **Neotaphonomy of a “Common Amenity” on the Grasslands of the Ngorongoro Conservation Area, Tanzania**

Student Author(s): Kyle Pontieri, Senior (Archaeology)

Faculty Mentor(s): Charles Egeland (Anthropology)

Identifying the variables that influence the deposition, preservation, and spatial distribution of faunal material across landscapes remains a key goal of taphonomic research. Here, we report on the results of pedestrian surveys for faunal material around a seasonal waterhole surrounded by woodland within the Ngorongoro Conservation Area (NCA). All visible faunal material within a 100 x 100 me area was plotted with a laser total station and collected. Focused analysis of a subassemblage collected under the canopy of a tree reveals a significant co-occurrence of modern human and carnivore taphonomic signatures. We discuss these findings within the context of Glynn Isaac’s “common amenity” model for the formation of many early Pleistocene archaeological sites.

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153. **The Influence of Vitamin D Deficiency Effects on Illness Severity in Children in the Pediatric Intensive Care Unit**

Student Author(s): LaTraikeyonna Pridgen, Senior (Nursing)

Faculty Mentor(s): Jennifer Wilson (Nursing)

Sunlight is a source of vitamin D that is critical component that “binds directly to functional vitamin D receptors present on all major immune cell types” (McNally et. al, 2017). Hence, vitamin D services as a major component to initiate immunity responses. In the last decade or so, researchers have found that vitamin D deficiency may occur in patients who are in intensive care unit, particularly in the pediatric population and may lead to adverse clinical outcomes, such as increased length of hospital stay on the unit and/or increased mortality. In a systemic review by McNally et al (2017), researchers found that morality nearly doubled in critically ill patients with vitamin D deficiency. As a result of this finding, it is important to seek evidence related to how vitamin D deficiency in critical ill pediatric patient’s effect illness severity.

154. **“Are WE connecting?” *We-Talk* in Young Adult Text Message Conversations with Parents, Peers and Romantic Partners**

Student Author(s): Michael Puerto, Senior (Psychology)

Faculty Mentor(s): Michaeline Jensen (Psychology)

Nearly all young adults today own a mobile phone, and text-messaging is increasingly how youth communicate about a range of important topics with close others. “We-talk” is the use of first-person plural pronouns (e.g. we, our, us) in conversation, and is thought to express a communal orientation (and can be contrasted with first person singular “i-talk”, which indicates more self-orientation). “We-talk” is associated with positive relationship factors and health outcomes, but no known study has examined “we-talk” in text messages. We examined rates of “we-talk” and “i-talk” in text messages in a sample of 267 college students (Age 18-23) who contributed over 500,000 text messages over a two-week period. Results from paired T-tests showed that young adult children text almost twice as many “i-words” as their parents, whereas parents text nearly twice as many “we-words” as their young adult children. In contrast, rates of “i-talk” and “we-talk” do not differ by partner in romantic relationships or friendships. This pattern is consistent with the hierarchical nature of parent-child relationships and the more egalitarian nature of peer and romantic relationships. Further research is needed to examine the impact of “we-talk” with seeking and providing aid in young adult text messages with parents.

155. **Enumeration of Ramification Polygons of Degree p^2**

Student Author(s): Juan Quiroa, Sophomore (Mathematics and Statistics)

Faculty Mentor(s): Sebastian Pauli (Mathematics and Statistics)

From Krasner's Lemma, we know that there are only finitely many non-isomorphic extensions of the field of p -adic numbers of a given degree; hence a complete classification is possible. The type that we chose for this project was totally ramified extensions of degree p^2 . Each extension is generated by an Eisenstein polynomial, which has a unique j -value. In addition, each set of such polynomials that share a j -value also share the same ramification polygon, which is an invariant of such extensions. Our goal was to enumerate and characterize all distinct ramification polygons for a given j -value and throughout all extensions of the aforementioned type. Furthermore, upon graphing such relation we observe that there is a parabolic pattern in the size of set of distinct ramification polygons and j -values.

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156. **The Transfer of Global Applications of Sport for Positive Youth Development**

Student Author(s): Sarah Ragab, Junior (Biology)

Faculty Mentor(s): Michael Hemphill (Kinesiology)

Background: After implementing a community-engaged professional development program to enhance positive youth development through sport in Colombo, Sri Lanka, the next goal of the project was to implement and evaluate a globally-informed youth development program at UNCG.

Methods: Informed by lessons learned in a youth development program in a post-war country, a youth development program was initiated to help youth resolve conflict. Qualitative data sources include daily reflective journaling, peer debriefings, and document analysis.

Results: Three qualitative themes describe the outcomes of this research. First, Cultural Competency, being able to interact with those of a different culture. Second, Restorative Justice, promoting social change through reconciliation tips and circle processes. Third, Translation, being able to reciprocate and implement practices learned to transfer this work back to a local High School that experiences a high rate of conflict.

Discussion: Restorative justice practices provide a way to build relationships across cultures and backgrounds. Circle processes are a central practice in restorative justice as it helps enable the ability to address harm and resolve conflict. The application of Restorative justice and peace can help strengthen relationships and is a practice that can be multi-national as it benefits those within different contexts.

157. **Identifying Community-Clinical Linkages to Promote Physical Activity among Latinos At Risk of Diabetes**

Student Author(s): Olivia Redd, Junior (Public Health Education)

Faculty Mentor(s): Sandra Echeverria (Public Health Education)

Latinos represent more than 16% of the population in the United States (U.S.) and suffer a disproportionate burden of type II diabetes mellitus (T2DM). T2DM is characterized by poor insulin regulation to control blood glucose levels and is a leading cause of disability and mortality in the U.S. Diabetes prevalence ranges from 10-18.5% among Latinos, compared to 7.6% in non-Latinos whites. Latinos also have poor diabetes self-management, contributing to serious health complications and a two-fold increased risk of mortality. Several studies have shown that physical activity (PA) can improve diabetes outcomes. However, little is known about how to promote PA in Latinos living with diabetes, particularly for those with limited English proficiency and low income/ education. The present pilot study seeks to answer two questions: 1) What are the key community, work, healthcare and interpersonal factors that limit Latino adults' (18-65 years of age) adoption of physical activity? and 2) How can healthcare systems more effectively integrate physical activity promotion in clinical care? The study will involve identifying Spanish-language survey items, constructing a brief survey (15 minutes long), and interviewing Latino patients (n=75) receiving care at a Cone Health clinic. The project results will be used to develop a future intervention linking community-based physical activity programs with clinical care.

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158. **Factors Controlling the Mechanisms of Eating Behavior in Mammals**

Student Author(s): Madeline Rees, Junior (Psychology)

Faculty Mentor(s): George Michel (Psychology)

Hunger and eating are behavioral states that are an integral component of the mammalian behavioral repertoire, yet the mechanisms that determine when and how one will experience hunger or eating have yet to be fully elucidated. Various organs and cellular signaling are thought to contribute to hunger and eating behavior, and these factors are modified by environmental influences (e.g. light, nutritional intake). In humans, and Western societies in particular, unprecedented, species-specific conditions including the prevalence of shift work, artificial light, processed foods, and even mindsets and attitude regarding hunger and eating affect ingestive behavior and may contribute to the prevalence of eating disorders and obesity. Considering the health risks posed by obesity, eating disorders, and poor nutritional intake, it is important to identifying research questions that will advance science and medicine's understanding of the processes that underlie hunger and eating. In this paper, the known physiological, psychological, environmental, and developmental mechanisms that influence hunger and eating have been outlined and discussed, and where more research is required has been indicated.

159. **Differences in College Students' Exercise Identity, Self-Efficacy and Physical Activity Based on Minority Status**

Student Author(s): Alexis Rice, Senior (Psychology)

Faculty Mentor(s): Erin Reifsteck (Kinesiology)

According to the U.S. Department of Health and Human Services, only 20% of adults meet aerobic and resistance physical activity (PA) recommendations. Minorities are less likely to meet PA recommendations than their non-minority counterparts. College is an impressionable time to establish regular PA. Research has shown that there is a positive relationship between exercise identity, self-efficacy, and PA behaviors. The purpose of this study was to analyze differences in college students' exercise identity, self-efficacy, and PA based on racial/ethnic minority status. Students ($N = 97$) in an upper-level undergraduate Kinesiology course completed surveys measuring their exercise identity, self-efficacy, and moderate to vigorous PA (MVPA). Overall, exercise identity was related to increased self-efficacy ($r = 0.20, p < .05$) and MVPA ($r = 0.40, p < .01$). There was a significant difference in exercise identity between non-minority and minority students, $F(1,92) = 5.56, p = .02$, but this difference was dependent on gender, $F(1,92) = 7.46, p = .01$. Specifically, minority women ($M = 3.26$) reported lower levels of exercise identity compared to white women ($M = 4.13$). Minority women also reported the lowest levels of weekly MVPA and self-efficacy, but differences between groups were not significant. This information could inform development of tailored PA interventions for college students.

160. **Changing in Identity Across the Transition Out of College Athletics**

Student Author(s): Rebecca Rice, Senior (Kinesiology)

Faculty Mentor(s): Jaclyn Maher (Kinesiology)

Student athletes' transition out of college athletics can be a time of shifting identities and a challenge for many former college athletes. During their athletic career, collegiate athletes may have stronger athletic identities as opposed to exercise identities. The strength of each identity likely has implications for the athlete's desire to be physically active after their final season. This study was designed to investigate changes in athletic and exercise identity as well as physical activity across the transition out of college athletics. Participants completed measures of both identities during their final season and 4-5 months

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after completion of that season. Participants also indicated their level of physical activity via the International Physical Activity Questionnaire. Paired sample t-tests revealed that athletic identity significantly decreased from in-season ($M=39.87$, $SD=6.00$) to follow-up ($M=34.47$, $SD=7.52$, $t(4)=2.40$, $p=0.03$); however, there was no change in exercise identity. Physical activity significantly decreased from in-season ($M=1506.00$, $SD=510.27$) to follow-up ($M=547.00$, $SD=515.58$, $t(13)=5.43$, $p < .01$). These preliminary results show co-occurrence of decreases in athletic identity and physical activity across the transition out of college athletics, suggesting the potential importance of deemphasizing athletic identity and enhancing exercise identity to help maintain athletes' long-term physical activity.

161. **Experimental Evolution of Magnetite Nanoparticle Resistance in *Escherichia coli*.**

Student Author(s): LaShunta Rodgers, Senior (Kinesiology, Biology)

Faculty Mentor(s): Joseph Graves (Biology), Jude Ewunkem (Joint School of Nanoscience and Nanoengineering), Misty Thomas (Biology)

There has been an increased usage of metallic antimicrobial materials to control multi-drug resistant bacteria, yet there is a corresponding need to know if this usage may lead to resulting genetic adaptations that produce more dangerous bacterial varieties. Our research group has utilized experimental evolution to produce *Escherichia coli* K-12 MG1655 strains resistant to excess iron (II and III) sulfate with increased resistance to silver, gallium, and traditional antibiotics. Genomic analysis identified intergenic/pseudogene mutations in several genes in the iron (II) and (III)-resistant lines. Gene expression studies demonstrated a profound difference in regulation of some genes chosen for their association with iron and general metal metabolism between the iron (II and III) resistant and control populations.

Here we continue the study of iron resistance by utilizing experimental evolution to generate 5 populations that are resistant to magnetite nanoparticles ($FeNP_{1-5}$). Preliminary data shows that by 21 days, $FeNP$ -selected populations showed superior 24-hr growth from 500—2,500 mg/L magnetite, gallium, silver, copper, tetracycline, ampicillin, chloramphenicol and rifampicin compared to controls. Whole genome and gene expression studies will be conducted to test if the genomic foundations to iron nanoparticle resistance match those determined in ionic iron (II) and iron (III).

162. **The Reasons Why Standardized Testing is Failing Us**

Student Author(s): Ahmad Romero, Sophomore (Biology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

For my topic, I will be researching the standardized system used for testing in the US. Fun fact, did you know that if a student doesn't show much potential of doing well on an exam early on; resources are moved to other students with a better aptitude? This is from one of my sources *The Testing Charade: pretending to make schools better*. I am doing this topic because as a student that went through nearly every level of education in the U.S. I know that the testing system simply doesn't work. Half of the things we have to learn is shannaigns. Sometimes the curriculum seems random like bits and pieces of knowledge instead of a collective chunk. I've also wondered why was it formatted in multiple choice, like it wanted the students to memorize it instead of encode it. I noticed these problems with the system so, I wanted to do a breakdown of why it's so flawed. By doing this question, I feel that I will come to the conclusion that the education system will need to be revamped to some extent, because it was never ever fashioned for learning.

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163. **“Primitive”: The New Dirty Word in Modern Art?**

Student Author(s): Alexandra Romero, Senior (Arts)

Faculty Mentor(s): Elizabeth Perrill (Arts)

My research investigates artworks of postcolonial francophone artists Farid Belkahia of Morocco and Nguyen Tu Nghiem of Vietnam as examples of the physical manifestation of the insurrection against the Francophone colonial mindset. I examine the manner in which French artistic techniques and methods were taught to each artist (the transfer of the colonial mindset), how they affected arts production in their respective countries, the reception or rejection of those techniques (embodiment of the colonial mindset), and why the artists received or rejected them. Belkahia and Nghiem both pioneered a resurgence of ancient art practices of their countries by reintroducing traditional media, techniques, and ideologies into their work from the postcolonial period. They both rejected the abundance of western influences in their countries, but while Nghiem ignored the west and sought to find his own style within tradition, Belkahia distinctly broke from any and all western art traditions including using canvas and oil paints on paper. Overall, each artist aimed to repackage what the French deemed “primitive” in order to lead arts production in their country into a new method of working that linked tradition and modernity. This research is highly innovative in its examination of postcolonial art across national boundaries, but within the Francophone colonial milieu of the 1950s to the 1970s.

164. **Effect of the Regulatory Light Chain of MyosinII on Glut 4 Translocation to the Plasma Membrane**

Student Author(s): Ekaterina Ellyce San Pedro, Post-Bac (Biology)

Faculty Mentor(s): Yashomati Patel (Biology)

Diabetes affects more than 100 million Americans every year. Type 2 diabetes is known to be caused by problems with glucose uptake. Myosin II regulates the insulin-stimulated glucose uptake by GLUT4 in 3T3-L1 adipocytes by regulating GLUT4 translocation to the plasma membrane. The Myosin IIA consists of two regulatory light chains, two essential light chains and two heavy chains. My research focuses on the regulatory light chain and how it affects Myosin IIA translocation to the plasma membrane. We used three different regulatory light chains mutants to test how changes to the RLC will affect Myosin IIA translocation to the plasma membrane. One RLC will be constitutively active, and is phosphorylated all the time, indicating that it should always be at the plasma membrane. The second RLC, is inactive and cannot be phosphorylated, and thus should not move to the membrane. The third RLC will translocate to the membrane under the presence of insulin. These different RLC’s will help in determining how the RLC of Myosin IIA alters Glut 4 translocation to the membrane. These experiments were conducted through cell staining and confocal microscopy. It could also aid in discovering new potential targets in the insulin pathway.

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165. **Importance of Climate Change**

Student Author(s): Rosa Santana-Cruz, Sophomore (Political Science)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

It is crucial to inform individuals about how important the Paris Climate Change Agreement is and how global warming should be promoted politically in order to reduce carbon emission. In order to diminish the rise of temperature in the world, the Paris Agreement, signed in 2015 by every world leader was a start to reducing carbon emissions in many nations. After the election of Donald Trump in 2016, America then decided to sign out of the Paris Climate Change Agreement on June 1, 2017. I am interested in this topic because it such a principal topic that needs to be addressed, discussed and actions need to be made. Sources being used are *The Paris Framework for Climate Change Capacity Building*, which informs the reader about the Paris Agreement and what rules were established. In conclusion, what could be learned about this research is how to promote global warming and enforce new laws. The way this may affect the average person is by providing them with evidence to be convinced that there needs to be a change. Informing individuals about how necessary the Paris Climate Change Agreement and how global warming should be endorsed politically in order to lower carbon emission.

166. **Taphonomic Analysis of the Excavated Faunal Assemblage from BK East at Olduvai Gorge, Tanzania**

Student Author(s): Megan Saunders, Senior (Anthropology)

Faculty Mentor(s): Charles Egeland (Anthropology)

Since 2014, excavations of BK East (Bed II, Olduvai Gorge, Tanzania) have found the site to produce well-preserved stone tools and animal bones bearing clear butchery marks. By analyzing the excavated collection from BK East for such factors as animal type and body size, bone type, and surface modifications, this study looks to answer the question of what agents contributed to the creation of this assemblage. While the results are thus far preliminary, the assemblage consists of a high percentage of surface modifications (tooth marks (TM), percussion marks (PM), and cut marks (CM)) and shows clear signs of butchery by our early human ancestors at the site.

167. **Coruscate for Chamber Orchestra**

Student Author(s): Andrew Savage, Senior (Music Composition)

Faculty Mentor(s): Mark Engebretson (Music Composition)

"Coruscate" was composed for chamber orchestra, a semi-large ensemble of 16 players consisting of solo instruments that represent each section in the modern symphony orchestra. The piece was written to be submitted to the Mizzou International Composers Festival, hosted at the University of Missouri. Prospective resident composers for the festival submit a portfolio of three works for consideration; accepted composers are then asked to compose a new work for Alarm Will Sound (an internationally renowned new music ensemble), to be premiered at the festival. Since "Coruscate" has the exact same instrumentation as Alarm Will Sound, the composer's ability to write well for the ensemble is therefore demonstrated, and as a result, has a higher chance of being selected as a resident composer for the festival.

Artistically, the definition of "coruscate" is, "to emit vivid flashes of light;" the piece of music seeks to convey this effect through its melodic, rhythmic, and textural elements.

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168. **Sentencing and How it Affects Defendants Differently Based on their Appearance in the Courtroom**

Student Author(s): Alec Schachner, Sophomore (Political Science)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Individuals are treated differently from their appearance based on their clothes, whether or not they have tattoos, or in rare instances, their ethnicity. This is no exception in the judicial system. Humans see patterns to justify reality, when something matches those patterns, we are more likely to believe what we think over what we hear. Due to this there are people who may receive unfair punishment in the criminal justice system. Specifically, certain ethnicities may experience harsher punishments than others. This will be argued by using data collected in articles from journals such as *The British Journal of Criminology* and *Journal of Quantitative Criminology* as well as books and online articles. I speculate that I will find that individuals who have noticeable differences in appearance will receive different sentences for similar crimes that they are charged with. I am interested in this topic because I am currently studying for a pre-law degree and plan on becoming an attorney, then hope to become a judge, in the future. I conduct this research in hopes to just educate people about potential pitfalls within the judicial system.

169. **Balancing the Cost of Infection: The Effect of Clean Needle Use on the Spread of Hepatitis C Among Injecting Drug Users**

Student Author(s): Kristen Scheckelhoff, Junior (Mathematics & Statistics), Ayesha Ejaz, Senior (Chemistry & Biochemistry)

Faculty Mentor(s): Igor Erovenko (Mathematics & Statistics)

Hepatitis C is an infectious liver disease which contributes to an estimated 400,000 deaths each year. The disease is caused by the hepatitis C virus (HCV) and is spread by direct blood contact between infected and susceptible individuals. Despite the magnitude of its impact on human populations, hepatitis C receives relatively little scientific attention. In particular, studies targeting disease eradication in the populations most at risk – injecting drug users – are scarce. Here we construct a game-theoretic model to investigate the effect of clean needle use on the spread of HCV. Individual drug users, seeking to maximize their own payoff by weighing the cost of clean equipment against the cost of infection, may opt for a level of protection between 0 and 100%. We find that the spread of HCV in this population can theoretically be eliminated if individuals use sterile equipment approximately two-thirds of the time. Achieving this level of compliance, however, requires that the real and perceived costs of obtaining sterile equipment are essentially zero.

170. **How Studying Animals' Perception Will Improve Our Treatment of Them**

Student Author(s): Josi Sellers, Sophomore (Arts, Psychology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

The thesis for my paper is that every animal views and perceives the world in different ways. Studying their vision and perception of the world can lead us to have more positive opinions about them. This will help us realize their true value, encouraging us to treat them with more compassion. My research will focus on how animals perceive the world differently from one another and humans. The project overall will show my audience how studying animals more closely can improve our opinions of them, and maybe enlighten us to treat them better. Our differences in understanding and perception interest me. I am also passionate about learning about animals and recognize that we need to treat them better. The

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sources I plan to use will be for factual information; topics like how vision and perception works, which “The Science of Color”, a book by Steven K. Shevell, will help me explain. This will help me inform my audience why my topic is important. I want my audience to learn more about how animals think, and influence them as much as it will me. I hope for my audience to take away the importance of each individual and animal we encounter.

171. **Bacterial Species Identification by Metabolite Profiling Via Ultra High-Performance Liquid Chromatography Coupled to High-Resolution Mass Spectrometry**

Student Author(s): Ali Shahbandi, Senior (Biochemistry)

Faculty Mentor(s): Nadja Cech (Chemistry)

Multidrug resistant bacterial infections have increasingly high morbidity and mortality rates worldwide. One of the contributing causes for the increase of bacterial infections is the lack of proper methods for specific species identification. As a result, health care professionals prescribe a wide range of untargeted antibiotics. Consumption of these antibiotics may treat the infection responsible for the chief complaint; however, this untargeted mode of therapy also destroys bacterial species that are beneficial to the patients’ health. Allowing pathogenic bacterial species to flourish in the patient’s system and give rise to antibiotic resistant superbugs. To improve species identification methods, it is essential to develop a more targeted approach for bacterial identification. One analytical technique commonly used for metabolite identification is ultra high-performance liquid chromatography coupled to high-resolution mass spectrometry. Comprehensive metabolite profiles for several common species of bacteria. A clear metabolite profile for various strains of bacteria may be advantageous for species identification, disease biomarkers, bioassay development and drug discovery.

172. **How Mass Incarceration Effects the Development of a Child**

Student Author(s): Corey Shields, Senior (History)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Mass incarceration is one of the biggest problems that the United States faces today. Even more so the developmental impact that this has on the children of these individuals is also extremely detrimental. The reason I chose to explore this research topic is because of the significant impact that it has on our country. Currently, the United States holds the record for the most incarcerated people in the world. Now with that being said these individuals imprisoned within the criminal justice system have children they leave behind. My research is going to go into depth on how exactly not having parents because of prison incarceration actually has a significant impact on these children. For example one of the sources I will be using to conduct my research is that of The Unequal Consequences of Mass Incarceration for Children by Turney, Kristi. This source like many of the other sources I will be using to present my information; provides professional and scientific proof of the effects of mass incarceration on a child's developmental state. So by conducting this research and presenting it will indeed show. That Mass Incarceration has an significant impact on the development of that of a child.

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173. **The Making of Sagittarius**

Student Author(s): Arielle Smallwood, Senior (Media Studies), Jamira Adams, Senior (Media Studies), Steven Baggett, Senior (Media Studies), Zariyah Blackmon-Tate, Senior (Media Studies), Mitchell Townsend, Senior (Media Studies)

Faculty Mentor(s): Jennida Chase (Media Studies), Hassan Pitts (Media Studies)

Through our Advanced Practicum Media Studies course we developed, planned and produced a music video for an Electronic Dance Music artist, Quilla. Each student gained first hand experience on a large collaborative production by jumping into the roles of camera operator, editor, assistant director, behind the scenes documentarian, and more. We also invited fellow Media Studies majors to work as production assistants so they could also gain practical work experience on a set.

We worked with Quilla to bring to fruition the visual marketing element of her single. We did this through collaborative planning, scripting, previsualization in the form of storyboarding, scheduling a large scale 4K video shoot, and learning the technology made available to us through our department's TV studio and equipment room, and by using professional film equipment rentals.

We learned to problem solve through redesigning the production in response to external elements like weather, deadlines and time constraints. In addition to Quilla, to develop the visual motif we collaborated with dancers, a fashion designer, and makeup artist.

In this experience of cultural production we delivered a product to a client that will further propel her creative career and be seen worldwide through Quilla's marketing strategies and film festival circulation.

174. **Emotion Regulation as a Protective Factor for Surgent Children with Social Difficulties**

Student Author(s): Alexandra Smith, Senior (Psychology)

Faculty Mentor(s): Susan Keane (Psychology)

Surgent children experience high levels of positive affect and impulsive behavior which can present difficulties in relationships. This study examines whether emotion regulation can reduce these difficulties. It was hypothesized that emotion regulation would moderate the link between surgency and peer social support. Children from the RIGHT Track Project (N=259; 44% male) completed a measure of peer social support (age 10). Mothers completed measures of surgency (age 5) and emotion regulation (age 7). A regression analysis revealed a significant interaction ($\beta=.521$; $p=.040$) such that surgent children with low emotion regulation skills had low peer social support. Surgency was significantly and negatively associated with peer social support when emotion regulation was at mean and low levels, indicating higher levels of emotion regulation may act as a protective factor for children with high levels of surgency. These results suggest teaching effective emotion regulation skills may support quality social relationships.

175. **The Origin of Violent and Criminal Behavior in Adolescence**

Student Author(s): Bailey Smith, Sophomore (Sociology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Many crime causation theories related to youth development explain the importance of understanding the concept of nature vs nurture. This procedure has limited success in exploring the motives of violent crime and should be altered to include the sociological aspects that have a direct causation of these behaviors. From a young age, I have been fascinated with the causes of crime and decided to pursue a background in criminology to apply it from a personal and professional standpoint. I have experience researching the causes of psychopathic and sociopathic behavior in adults arguing the important

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biological reasons such as genetic mutations or chemical imbalances rather than solely environmental factors and I would like to use that information to relate to adolescence. Using scholarly articles, blog posts, and books including *Diverting Children From a Life of Crime: Measuring Costs and Benefits* by Peter W. Greenwald, I will conclude that when exploring biological, environmental, and psychological components simultaneously, there is a higher effect rate of crime prevention programs directed to adolescents. Understanding the sociological factors that cause delinquency in young adults and children is imperative when exploring the causes of crime rather than using the framework of nature or nurture.

176. **Selected Prevention Methods for Hyperglycemia in Community Dwelling Adults**

Student Author(s): Brandon Smith, Senior (Nursing)

Faculty Mentor(s): Debra Wallace (Nursing)

Evidence suggests that recurrent hospitalizations related to hyperglycemic events can lead to an overall decrease in quality of life. Previous research indicates that hospital readmission rates for patients that have experienced hyperglycemic events can range from 18% to 40% in community dwelling adults. Nurses are at the forefront of providing patients and their families with critical education on methods to prevent hyperglycemic events and monitor their health. This paper will review background research on the effect of recurrent hospitalizations due to hyperglycemic events and provide insight into selected prevention methods for managing hyperglycemia in community dwelling adults. Selected prevention methods consist of dietary planning and adherence, patient participation in self-monitoring blood sugar, and medication regimen adherence. Impact of nursing education with respect to these selected prevention methods will be presented.

177. **Themes of Metacognition During Teacher Self- Reflections of Preservice Music Educators**

Student Author(s): Elyse Smith, Sophomore (Music Education)

Faculty Mentor(s): Brett Nolker (Music Education)

The purpose of this study was to determine the role of metacognition during students' self-reflection on teaching by examining the themes that emerged during the reflection process. Reflecting on teaching is an expected activity and skill for all educators. Metacognition, or thinking about your thinking, is one component of the educational construct, Self-Regulated Learning. Students who self-reflect and are conscious about their thinking are more successful learners and teachers. Metacognition is a central skill used in the act of self-reflection, however, teacher education programs do not include instruction on metacognition. Participants (n=11) were placed in two groups based on their exposure to, and previous training in metacognition. One group had received traditional preparation through music education coursework. The second group included students who also received previous training in metacognition. Both groups were interviewed individually and in focus group format to identify themes that indicate attitudes and perceptions during self-reflection on individual teaching activities. This study will provide insight and identify the themes, and processes used by pre-service music educators in an effort to better inform teacher education programs.

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178. **Coping with Family Relocation and Social Integration as an Adolescent**

Student Author(s): Shawn Smith, Junior (History)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

My project is looking into the coping mechanisms of teens in regard to moving, and how they socially integrate afterwards. My primary subjects are individuals who have relocated between the ages of 13 and 21 because these are key developmental years. I argue that; social integration of teens in regard to moving is directly connected to not only the environment that they came from but also the environment they moved to, as well as social, political, peer group, and parental patterns. I am interested in this topic because I moved during my high school years, and it was not an easy process. Trying to find my way through new people, a new town, and new expectations was difficult. Some sources I am using are online forums, and articles from academic journals, one being "Determinants of Effective Coping with Cultural Transitions among Expatriate Children and Adolescents" in *Anxiety, Stress, & Coping*. I hope my research will provide insight into the struggles of acceptance during relocation. Maybe the final project will help to share stories and experiences so that people will gain tip to integrating socially.

179. **Parental Involvement in African American Children Kinship Care Families: The Pilot Study**

Student Author(s): Tamika Smith, Senior (Psychology), Kenya Downing, Senior (Psychology), Phillipian Flowe, Senior (Social Work)

Faculty Mentor(s): Tyreasa Washington (Social Work)

Kinship care refers to the caregiving of children by relatives or others who have strong bonds with the children when birth parents are unable or unwilling to provide care. Many children who experience kinship care suffer from a host of negative outcomes related to social skill deficits, academic underachievement, and behavior problems (BP). Previous research found that parental involvement of birth parents offset some of the risks to kinship care children's social competence (SC) and academic competence (AC) and their risk of BP. We conducted a qualitative pilot study to provide a more comprehensive understanding of how experiences in kinship care families affect the social, academic, and behavioral outcomes of African American (AA) children. Findings revealed that for kinship care families with higher parental involvement, the caregivers provided boundaries and expectations of birth parents when they engaged with children. Also, both caregivers and birth parents conveyed concerns for the children's overall well-being

180. **To Whom It May Concern: Poems**

Student Author(s): Nicholas Smurthwaite, Senior (English)

Faculty Mentor(s): Forrest Rapier (English)

My submission to the 13th Annual Thomas Undergraduate Research and Creativity Expo is a collection of poetry consisting of roughly 35 pieces titled "To Whom It May Concern." What this collection of epistolary poems gains from its central theme of addressing unorthodox events and objects is that that it brings attention to the idea that the things people intend to say are not necessarily received by their intended audience. This collection works to portray humanity's anxieties towards being honest and sincere about subjects and ideas, and the ways people express this anxiety. The projection of my emotions onto objects allows for a unique take on this issue concerning humanity. The project itself aims for the effect of showing how the human condition is captured within this generation to an audience. The three sections found within the collection, titled "To Whom it May Concern," "Season's Greetings," and

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“In Transit” form a narrative focused around concepts of movement, which I believe relates strongly to contemporary audiences, as we exist in a rapidly evolving transit-based society. These are the central core themes within *To Whom It May Concern*.

181. **The Media’s Influence on Romantic Love**

Student Author(s): Jocelyn Steslicke, Sophomore (Arts)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

The media portrays romantic love in unrealistic ways, giving viewers unrealistic expectations of their own love lives.

Each person has their own ideas of what love is and what love should look like. These perceptions didn’t just appear; people’s thoughts and ideas come from what they are surrounded by. The thoughts and ideas each person has about love have been shaped by the media that has surrounded them since they were young; an example being the people who grew up watching Disney characters falling in love, and now expect their own love lives to be just as simple. Though the media wants to have relatable content for all viewers and draws from real life, it also draws from what people want from life; in which many people want lives like the ones they see in the media. No media is perfect, and there is still a far ways to go when it comes to representation, including representing romantic love. Using sources such as Susan S. and Clyde Hendricks’s book *Romantic Love* and selections from *The Journal of Mass Communication and Society*, I will inform the readers on the impact that media has on how people view their own romantic relationships.

182. **Effects of Art Education**

Student Author(s): Emma Stevens, Sophomore (Art Education)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Art in education leads to educational and economic success by providing different aspects that are not available elsewhere in education.

The arts in education affect students in their educational and economic success in many ways, from teaching them how to creatively problem solve, class involvement, and enhancing cultural awareness. These findings were found in the Elliot W. Eisner book *The Arts and the Creation of Mind* and an article in Education Week “Arts Education Matters: We Know, We Measured it.” With the findings within these sources and other sources I will inform readers of the major impacts of art in education, and how it affects student lives. I will also talk about its importance and how people’s views of art education have impacted its place within the school systems. I believe that this topic is vital to research specifically at this time because art education within K-12 has become increasingly under heat about the amount of funding it will receive from the state. I hope that my collection of findings will help lead my readers to believe in the importance of art education, and its positive effects on educational and economic success.

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183. **The Benefits of ASMR Videos**

Student Author(s): Dynah Sutton, Sophomore (Biology)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

ASMR is a very popular industry. I am here to support my claim that ASMR is more than just simple videos on social media, they can generally benefit someone's life and I want to make sure that I inform as many people as possible while I work on this project on the benefits of ASMR. ASMR stands for Autonomous sensory meridian response which is characterized as a tingling feeling between the scalp and spine and a feeling of relaxation as a response to an external stimulus. In this case the external stimulus would be ASMR videos. ASMR can affect people in more than just physical ways, it can help people mentally and emotionally, by relieving stress, helping with insomnia, and increasing mindfulness which can improve depression and anxiety. To support these claims, I will use books like *Brain Tingles: The Secret to Triggering Autonomous Sensory Meridian Response for Improved Sleep, Stress Relief, and Head-to-Toe Euphoria* and research articles such as *Autonomous Sensory Meridian Response (ASMR): a flow-like mental state*. I think that through this research project, I will learn about all the benefits that ASMR has to offer us and I will be able to inform people of those benefits.

184. **The Truths About Multitasking**

Student Author(s): Mikayla Taylor, Senior (Hospitality and Sustainable Tourism)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Although humans attempt to multitask everyday, they are often unsuccessful because our focus is likely to misguide us. Humans tend to be attentive to one subject for a certain period, and while they are focused on that, they have many distractions around them to cause loss of focus. This makes it difficult to regain the undivided attention that's necessary to focus.

Some people will say that they have the ability to multitask and this is not true. While they believe they are multitasking, their focus and attention is restricted. Their brain is processing of all of the information to not only perform one task at hand, but many. This causes the brain to lose focus on the immediate task, while also losing focus on the other tasks as well. NPR released an article in 2008, which explains how and why humans are cutting themselves short when they attempt to multitask. One of the primary reasons why humans cannot multitask is because the brain competes to use same parts of the brain. "You cannot focus on one while doing the other. That's because of what's called interference between the two tasks," says neuroscientist Earl Miller.

185. **Reassessment of Osteology and Bioarchaeology of the Tutu Site**

Student Author(s): Anastasia Temkina, Senior (Archaeology, Anthropology)

Faculty Mentor(s): Robert Anemone (Anthropology)

The study of skeletal pathology can provide insight into life and death of past populations. The Tutu Archaeological Village Site on St. Thomas island, US Virgin Islands, was identified and excavated in 1990. The skeletal remains of 42 individuals who lived 500-1000 years ago were excavated there and are currently curated in the Bioarchaeology Laboratory in the Department of Anthropology at UNCG. This project involves a reanalysis of this population in order to identify pathological features on the preserved skeletons that can tell us something about health of Tutu people.

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The original analysis of cranial and postcranial pathologies in this skeletal population was conducted by Mary K. Sandford and colleagues in 2005. The most prevalent pathologies reported were healed trauma, cribra orbitalia, and treponemal disease. My recent reexamination of these remains revealed additional bony pathologies. I have conducted a replication study of the skeletal pathologies found on the remains of the people buried at the Tutu site using standard, published methods of paleopathological identification. I provide a reassessment of the prevalence and types of pathology preserved in these skeletons in order to understand the health status of these prehistoric inhabitants of the Caribbean.

186. **Toxic Masculinity: A Misnomer?**
Student Author(s): Jerry Thornton, Sophomore (Media Studies)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

‘Toxic masculinity’ is a phrase used to describe bad behaviors that men allegedly participate in during socialization such as: bullying, homophobia, sexual harassment, and other inappropriate malicious activities. I say allegedly because men don’t do bad things; bad people do bad things. It could be argued that since some men oppress women and on average commit violence far more often than women do toxic masculinity is real, and this study argues that is not a matter of masculinity, but rather a matter of opportunity. Addressing what those opportunities are and eliminating them is a far more effective and far less sexist strategy toward protecting egalitarianism than critiquing male behavior.

187. **Analysis of Phototropism and Gravitropism in Arabidopsis Thaliana in a Ground-Based Control Experiment**
Student Author(s): Megan Toler, Junior (Biology)
Faculty Mentor(s): Tatsiana Shymanovich (Biology), John Kiss (Biology)

Plant adaptations to light and gravity are crucial for their survival and fitness. Gravitropism and phototropism work simultaneously, therefore microgravity is needed to separate the effects of two environmental factors. In microgravity, during spaceflight experiments with *Arabidopsis thaliana*, novel root and shoot responses have been observed that are not seen on Earth. Roots have positive responses to blue and red light and shoots grow towards unilateral red light. The goal for this study is to perform a ground-based control experiment that simulates the effects of microgravity by using a 2D clinostat and compare plant responses. Surface sterilized seeds of the wild-type genotype, Landsberg, and two phytochrome lacking mutants are plated on growth medium and placed vertically under white light. Vertically oriented seedlings are put onto the clinostat with unidirectional blue or red light treatments for 44 hours. Shoot and root responses are then video recorded and analyzed. Results to date suggest that 2D clinostat treatments partially simulate microgravity effects. A future implication to this project is to understand the mechanisms of plant tropisms and how this can be applied for plant growth development in microgravity conditions, on the Moon, or Mars.

188. **An Argument of the Systematic Factors along with Personal Factors that Leads to a Higher Risk in Homelessness in the Trans People of Color Community**
Student Author(s): CaTerra Townsend, Sophomore (Peace and Conflict Studies)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Thousands of LGBTQIA+ youth are suffering from homelessness however trans individuals especially trans people of color have higher rates of homelessness in the United States. However, I would like to argue that systematic factors such as toxic masculinity, religion, homophobia, racism, and relaxed laws

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on discrimination in states have led to the rise of trans people of color living on the streets. I am interested in this topic because I am apart of the lgbt+ community and I have encountered adversity because of being black and gay. By using sources such as the book *Black on Both Sides: Racial History of Trans Identity*, articles from *InFocus* and *Social Work Research*, and other books and websites I will establish that there are systematic factors at play and in fact or a huge determinant to high rates of homelessness in the POC trans community. I will also explain how the lack of state-funded resources will contribute to the hardships of overcoming homelessness as a trans person of color.

189. **Is Your College Education a Scam?**

Student Author(s): Victoria Treadway, Sophomore (Management)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Is a college education really worth your time, money, and stress? What has the American culture done to the mindset of Americans and the money that is available to attend a higher education. The question that still remains is whether current students believe that it is important to have a college degree and whether it is affordable for everyone to attend any university that they desire. The middleclass students that are attending The University of North Carolina at Greensboro say otherwise, saying that college isn't meant to be for everyone and the higher-ups' designed it to be that way. William Elliott has a book named *the real college debt crisis* and it talks about the American dream being affected by debt and stress put on adults trying to get an education. If we made it easier for everyone to get in would it be taken as a joke to more people or would they think it's great because more people get the opportunity to pursuit more education. To provide background to the norm of college and all it entitles. I also would like to include the breakdown of the cultural norms of the "college experience".

190. **500 Years of Struggle: Miners, the State and Mining in Sonora, Mexico**

Student Author(s): Zachary Tuomey, Senior (Anthropology)

Faculty Mentor(s): Arthur Murphy (Anthropology)

Labor in the Sonoran mining industry has been valued and devalued according to ethnicity and race in addition to class since it inception. Colonial labor was administered through the encomienda system were colonist were given charge of natives to "Christianize" in exchange for their labor. Early 20th century Mexican miners in Cananea were paid less than American employees, not eligible for promotion, and worked in more dangerous conditions. These conditions were exacerbated by the impunity of the company and the fact that Cananea was an isolated company town. The Mexican miners met with management in May of 1906 to negotiate their demands. Three thousand Miners and community members marched through Cananea. In front of the wood shop two American employees shot and killed three strikers. The march erupted into a riot and the company put it down with help of the federal police, the Mexican army, and American volunteers from Arizona. This event is considered to be the spark that lead to the Mexican Revolution. Following the revolution workers collective rights were enshrined in the constitution. Today, Grupo Mexico owns the mine and recently the government acted to dissolve the union and replace it with a sindicato blanco or company union.

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191. **Acute Exercise and Memory in Older Adults (EMO)**

Student Author(s): Aiko Ueno, Senior (Kinesiology)

Faculty Mentor(s): Jennifer Etnier (Kinesiology)

Studies have shown that acute exercise prior to memory encoding has benefits to both short- and long-term memory. However, there are few studies focused on older adults, whose cognitive impairment due to age-related decline is a concern. Thus, the purpose of this study was to investigate how the timing of acute exercise influences memory in older adults (50-70 years old). Regularly physically active cognitively normal participants were recruited. The Rey auditory verbal learning test was performed on a no-exercise day (control), following 20 minutes of moderate intensity exercise (exercise prior), or before 20 minutes of moderate intensity exercise (exercise after). Results showed that there were significant differences between conditions for learning and 24-hr recall. In particular, in the exercise prior condition, participants learned more than when in the control condition. Also, for 24-hr recall, in the exercise prior condition, participants remembered significantly more as compared to the exercise post condition, and participants in both exercise conditions performed significantly better than the control condition. This study extends the literature by showing that long-term memory of older adults benefits in response to moderate intensity exercise.

192. **Lipophilicity Determination for New Photodynamic Therapy Agents**

Student Author(s): David van Dohlen, Junior (Chemistry)

Faculty Mentor(s): Sherri McFarland (Chemistry)

The dynamic nature of cancer makes uniform treatment a difficult challenge. Photodynamic therapy (PDT) offers an adaptable approach in addressing the urgent need for alternative therapies. PDT utilizes light-responsive compounds to generate reactive oxygen species, which are established cytotoxic agents. These otherwise nontoxic compounds, known as photosensitizers (PSs), can uniquely target tumors via control of light delivery. The only FDA-approved PS for cancer therapy is an organic drug known as Photofrin, and some of its drawbacks may have contributed to the absence of PDT from mainline cancer therapy. Metal complexes are emerging as alternative PSs due to their modular architectures and a variety of accessible excited states that provide an unparalleled ability for tuning physicochemical properties to match treatment needs. Ru and Os complexes are examples, with our TLD1433 having successfully completed a Phase 1b clinical trial for treating bladder cancer. An important part of exploring any new PS is the determination of its lipophilicity (log D), which has important ramifications on solubility, cellular uptake, and cytotoxicity. This presentation will discuss the log D determination for a series of metal-based PSs, its significance within their scope, and highlight structure-activity relationships (SARs).

193. **Mapping the Correlates of Alcoholic Dispensaries and Heavy and Binge Drinking in Guilford County**

Student Author(s): Christian Walters, Senior (Geography)

Faculty Mentor(s): Stephen Sills (Sociology)

According to the National Institute on Alcohol Abuse and Alcoholism, over 15 million adults in the United States have an Alcohol Use Disorder (AUD) and an estimated 88,000 die from alcohol-related causes annually. This research project examines the relationship between alcohol dispensary location and its correlation with heavy and binge drinking and the mediating effects of socio-economic factors such as education, race, sex/gender, income levels, etc. Using ESRI ArcGIS software, NC ABC stores

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and shops licensed to sell beer and wine will be mapped. Sales volume by dollar amount, type of beverage, and number of ounces will be observed. Maps of each of the indicators will also be made to demonstrate the geospatial relationship between sales volume and consumption patterns. Distance from dispensary will also be computed as a possible correlate. Data will be analyzed using IBM's Statistical Package for the Social Sciences (SPSS) with bivariate Pearson Correlation analysis and Ordinary Least Squares (linear) regression.

194. **Towards High Resolution Ion Mobility Mass Spectrometry**
Student Author(s): Hongzhou Wang, Senior (Chemistry)
Faculty Mentor(s): Norman Chiu (Chemistry)

Despite of the advances in various analytical techniques, the differentiation and detection of isomeric compounds remain as a challenge. The coupling of ion mobility spectrometry to mass spectrometry can add an extra dimension of measurements on the ion separation, thus holding great potentials for the detection of isomeric compounds. In this study, we have focused on improving the resolution of traveling wave ion mobility mass spectrometry (TWIM-MS). From launching the latest generation of TWIM-MS by Waters, we have learnt that higher resolution (or resolving power) could be achieved when higher voltages were used during the ion mobility separation. Recently, we have confirmed and reported the ion energy could be increased when higher voltages were used in TWIM-MS. In our current study, while trying to minimize the elevation of ion energy, we have attempted to optimize the resolution by varying the key parameter settings in performing traveling wave ion mobility separation, namely wave velocity and wave height. Rather than defining the resolution by using one single detectable peak in the ion mobilogram, the conventional chromatographic approach of using two adjacent peaks as well as the peak width at half height are being used to define the resolution. Thus, the separation of ribonucleoside from its nucleobase which may co-exist in the same biological sample is selected as our study model. The traveling waves in both ion mobility cell and transfer cell were optimized. The outcome of this study can provide useful information for carrying out the analysis of isomeric RNA modifications at the cellular level.

195. **Cat Cafés Are Good for People but Not the Cats**
Student Author(s): Aidan Ward, Sophomore (Marketing, Entrepreneurship, Hospitality and Tourism)
Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Cat Cafés in the US are working with animal rescues and using the café as a place to help get cats adopted. From the article I read called Cat Cafés, Affective Labor, and the Healing Boom in Japan and the observation I did of the cat café in Greensboro I do believe that cat cafés can help people get into a better mood from just being around cats. The website article titled Cat Cafes Can Be A Force For Good. Here's How and the observation I did at the cat café in Greensboro can also help to argue that cat cafés are not good for the cats. There were at least 11 cats in one room when I went to the café and in the website article it says that cats are not supposed to be in groups because it can cause the cats to have problems. I chose this topic because I think that it would be fun to own a cat café, but I did not know how they work. From the research I have done I have come to the argument that cat cafés are beneficial for the people who visit but not for the cats inside.

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196. **Can You See Me: Student-Faculty Interactions**

Student Author(s): Ariana Watkins, Senior (Psychology)

Faculty Mentor(s): Gabriela Livas Stein (Psychology)

Non-white students are attending college at an increasing rate but the number of faculty who look like them is not increasing at the same rate. At the national level, the university faculty demographics do not mirror those of the population of students that they serve. Studies have shown that congruence between racial/ethnic faculty and student demographics are linked to better outcomes for non-White students. The present study examined whether the impact of student-faculty interactions on college self-efficacy, school belonging, and career future aspirations differed between non-White and non-Latinx White college students. A Qualtrics survey was used to ask participants about their interactions with majority race faculty members and their interactions with faculty members who belonged to their same racial group. Exploratory analyses examined whether the impact of faculty interactions differed by race. There were no significant differences found between White students and non-White students in the mean level of student-faculty interactions. However, student-faculty interactions were positively correlated with college self-efficacy, school belonging, and aspirations for non-White students, and only school belonging for White students. Despite this different pattern of results, these did not rise to statistically different results likely due to lack of statistical power.

197. **Scoping Review of Implicit Bias Curriculum in US Dietetic Undergraduate Programs**

Student Author(s): Sarah White, Post-Bac (Nutrition), Grace Huebner, RDN Graduate Student (Nutrition)

Faculty Mentor(s): Jared McGuirt (Nutrition)

It has been shown that healthcare providers are influenced by stereotypes regarding race. These biased interactions can be intentional or unintentional. Even when they want to provide equitable healthcare to all patients, providers' biased interactions with their clients may lead to poorer outcomes and health disparities. As awareness of racial implicit bias becomes more prevalent in the Nutrition and Dietetics community, there is a need to determine whether there is a corresponding change in university level dietetics training, particularly whether any undergraduate and/or graduate programs in Dietetics provide implicit bias training to their students. This study seeks to determine the prevalence and factors related to race bias training in Didactic and Coordinated programs in Dietetics in the United States that are currently accredited by the Accreditation Council for Education in Nutrition and Dietetics (ACEND). Systematic internet searches of these programs using the ACEND website to gather preliminary data, as well as, surveys of a stratified random sampling of US Dietetics programs were done. Initial findings suggest that a small number of Dietetics programs provide some degree of specific training on implicit racial bias. The findings of this study could guide future policy and curriculum changes in US Dietetics programs.

198. **Picasso's African Influence**

Student Author(s): Ally Whitman, Junior (Arts)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

My project is still in the research phase, but I've reached some conclusions based on the research I've done thus far. Going forward, I need to focus more on the art he was working with in 1907-1908. While only directly influenced by African Art in a small portion of his works, the indirect influence this exposure had on Picasso's later works is notable. I'm interested in this topic after learning about it in an

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art history course over winter break. I've always found influences in art to be interesting, so I wanted to explore Picasso's influence more deeply. It's hard to find primary sources that are helpful other than paintings and sketches themselves, so my research relies mostly on secondary analysis. One source that I find particularly helpful is *Picasso* by Timothy Hilton, which examines Picasso's life and can give me more information on later works. In conclusion, I think that I may come to find that Picasso's experience with African art may not be as influential as I had first thought. However, this information may also show me that it impacted Picasso more than he let on.

199. **Using Portable X-Ray Fluorescence to Test Andean Ceramics**

Student Author(s): Emilee Witte, Senior (Anthropology)

Faculty Mentor(s): Donna Nash (Anthropology)

The Moquegua Valley of Peru has a complex archaeological record as an active frontier for several centuries and home to many ethnic groups and colonizing polities. Rescue excavations at the Terminal Terrestre site in Moquegua recovered a diverse collection of complete ceramic vessels representing several styles dating to the Terminal Middle Horizon (900-1100 CE), Late Intermediate Period (1100-1400 CE), and Late Horizon (1400-1532 CE). Through the use of portable X-Ray Fluorescence (pXRF), over sixty vessels of the Chiribaya, San Miguel, Gentilar, and Inka styles were examined for differences in chemical composition of slip and decorative pigments. Pottery from the Terminal Terrestre were compared to examples from Cerro Baúl and Cerro Mejía, Wari settlements occupied in the region during the Middle Horizon. The sample features vessels that use diverse colors, distinctive motifs, and different production technologies. The study examined if the use of pigments as slip colorants changed overtime. The analysis of the present sample supports the hypothesis that the larger, imperial cultures of the Wari and Inka used a more diverse array of pigments due to the larger trade networks available while the smaller regional cultures of the Late Intermediate Period used similar local resources.

200. **What Do the Waterways of Ancient Rome Have to do With Us?**

Student Author(s): Barrett Woodruff, Junior (Classical Studies)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

While it can be said that ancient Rome has no relevance to today, we need to pay attention to it because studying it can inform us about our lives today. While ancient Rome's influence shows itself in our world in many ways, one that proves surprising is in water and drainage systems. Learning about ancient Roman issues and approaches in the water systems provides a way to manage modern day water problems. An example of the correlation between the two water systems is in the discovery of lead in both ancient Roman drinking sources. This research topic stems from my interest in both understanding the classical world and in caring for the environment. In researching this topic I use both primary and secondary sources, including Smithsonian article "Sugar of Lead: A Deadly Sweetener", and a book which focuses on environmental problems in both ancient Greece and Rome. I intend to obtain knowledge of specific examples of our correlations to the ancient Roman world and from sharing what I find I may be able to emphasize the importance of using the past as a way of understanding ourselves and the ways we can improve.

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201. **Building a Compassionate Community: Substance Use, Stigma, and Harm Reduction**

Student Author(s): Autumn Yates, Junior (Social Work)

Faculty Mentor(s): Stephen Sills (Sociology)

In 2017 there were 2,474 drug-overdose deaths in North Carolina; approximately 60% of these deaths were due to fentanyl and heroin. This project develops and evaluates a harm reduction and community awareness training as a way to mobilize communities in combating the local opioid epidemic. We utilized evidence-based best practices in harm reduction to develop a curriculum that teaches the public about harm reduction, opiate addiction, and stigma. Our goal was to reduce stigma against individuals suffering from Substance Use Disorders (SUDs) and promote better social support for people who use drugs. Over the course of the last four months we have conducted four public harm reduction and stigma reduction trainings. These trainings have been targeted in communities identified through geo-spatial mapping of overdose reversals- areas of high incidence of use. The evaluation of the program draws upon the *Success Case Method* (SCM) and includes a pre-test/post-test assessment, as well as a 3-month post-training surveys to examine the varying levels of confidence that an individual holds towards harm reduction practices and strategies. The results have shown the efficacy of the curriculum in improving awareness of SUDs and reducing stigma. The feedback given will allow us to refine the curriculum and increase overall efficacy of the training.

202. **Nutritional Therapy in Managing the Symptoms of IBD**

Student Author(s): Shanelle Ypema, Sophomore (Nutrition)

Faculty Mentor(s): Sara Littlejohn (Ashby & Strong Colleges)

Individuals with IBD who utilize conventional methods of treatment (surgery, medication) to manage their symptoms are often left with side effects such as weakened bones and nutritional deficiencies. While these methods of treatment may be the only option sometimes, there has to be a better way to manage the symptoms of IBD. I argue that individuals can achieve symptom alleviation through diet modification. As a future dietitian, finding a way for patients to achieve a better quality of life through nutrition rather than potentially detrimental methods of treatment is a huge priority of mine. Articles from *The World Journal of Gastroenterology* provide substantial evidence that modifying your diet by avoiding certain foods and consuming more of others can lead to symptom improvement. From this research I intend to learn what the best diet recommendations are for individuals with IBD. As of now, I know that fried foods and foods high in saturated fat are to be avoided, and that diets high in certain fruits and vegetables, vitamins, and minerals are beneficial in most cases. This research could help provide relief for the thousands of people that suffer from IBD.

ABSTRACTS

203. **A New Way to Think of Outliers: Robust Trending Filtering and Outlier Detection**

Student Author(s): Xuechen Zhu, Post-Bac (Mathematics and Statistics),
Austin Miller, Junior (Mathematics and Statistics)

Faculty Mentor(s): Xiaoli Gao (Mathematics and Statistics)

In financial market or chemical engineering, data can be contaminated sequentially due to systematic maintenance errors. Current linear trend filtering techniques are either sensitive to outliers or lack of the ability of detection those contaminated regions. We propose a method of linear trend filtering that can simultaneously produce robust trend estimates and run sequential outlier detection. We accomplish this goal through the integration of a penalized weighted least squares approach applied to current linear trend filtering techniques. In particular, we assign each sequential data point an individual unknown weight and detect both the hidden trend and outlying regions simultaneously and data-adaptively. We evaluate our method's ability to provide robust trend estimates using both numerical simulations and real data analysis. Our real data analysis is done on the historical real price of the S&P 500. Finding unexplained outliers in stock prices may help to identify market manipulations like insider trading.

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Cover Design

Student: Leah Bishop

Major: *BFA in Art,*

Graduation: *December 2018*

Course: *ART/ENT 394: Advanced Studio Practicum: Art and Entrepreneurship*

The Undergraduate Research, Scholarship and Creativity Office
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