

**Celebration of Summer Research and Scholarship
Poster Session Program
Allegheny College
Monday, August 26, 2024
1:30PM-3:00PM**



**ALLEGHENY
COLLEGE**

Welcome

The Offices of the Provost, The Community Impact Hub, Office of Community-Engagement, Watershed Conservation Research Center, Career Education, and URSCA are pleased to welcome you to the **Celebration of Summer Research and Scholarship Poster Session**. The purpose is to bring students, faculty, staff and community partners together to celebrate and learn about the research, scholarship and experiences that have been conducted throughout the 2024 summer. The poster session is being held during the Gator Week of Welcome on the day of Matriculation in the Lobby and Second Floor of the Campus Center from 1:30PM-3:00PM.

Photo and Video Footage release:

Video footage and/or photos will be taken during this event, which may or may not include your recognizable image. Please be advised, by participating in this event, you agree to allow Allegheny College to use the images for promotional and archival purposes. If you do not wish to have us use your image, please notify the photographer or event organizer.

Celebration of Summer Research and Scholarship
Poster Session
Campus Center Lobby and Second Floor
Monday, August 26, 2024
1:30PM-3:00PM

1. Student Name(s): Hemani Alaparthiand and Dylan Mbane

Faculty Mentor: Dr. Janyl Jumadinova

Community Partner: Dr. Ann Noonan

Title of Poster: K-6 Computing Literacy Program

Abstract: This project identified the feasibility and possible programming structure of a computing outreach fellows program, where Allegheny's Computer and Information Science (CIS) provide regular outreach in Crawford Central elementary schools. Regular and long-term collaboration of the department of Computer and Information Science with Crawford Central elementary schools helps provide structures for systemic introduction of computing in K-6 students, ensuring that every K-6 student in Crawford Central is exposed to computing on a regular basis at each level of their education.

2. Student Name(s): Libby Babcock

Faculty Mentor: Dr. Kelly Pearce and Dr. Jennifer Houtz

Title of Poster: Wild River Otter (*Lontra canadensis*) Microbial Sequencing

Abstract: River otters have expanded their original range and are now present in most areas that they were historically extirpated and their populations are now considered established and stable. During the summer of 2024, a research study was started with the goal of sequencing the gut microbiomes of River Otters in the French Creek watershed to allow for better knowledge of what conservation techniques to implement and the overall health of the River Otter population in Northwestern Pennsylvania. Nine fresh river otter scats were collected and stored in a freezer for future PCR analysis.

3. Student Name(s): Daniel Bekele, Bergas Anargya, and Keven Duverglas

Faculty Mentor: Dr. Douglas Luman

Title of Poster: term-world: a Distributed Educational MMO

Abstract: A migration of on-campus hosted resources to a larger, multiplayer platform. The Summer 2024 iteration of the term-world project focused on creating a larger-scale, distributed version of an educational game already hosted on Allegheny's campus using the GitHub Codespaces platform as a host to explore GPT-powered NPCs and professional software infrastructure.

4. Student Name(s): Asaad Bell

Faculty Mentor: Dr. Tarah Williams

Title of Poster: Divided by Policy: Examining Race-Coded Policy Support in Rural Areas

Abstract: Historically, policies presented as supporting the needs of lower-income black communities such as welfare or more explicitly affirmative action have been heavily criticized by white conservative Americans. However, little research has focused specifically on the feelings of rural citizens. This summer research project focused on analyzing American National Election Studies data and designing an experiment to give insight into this understudied question.

5. Student Name(s): Andrea Boccia

Faculty Mentor: Dr. Megan Bertholomey

Title of Poster: Exploring the Role of the Adolescent Gonadal Hormones' Surge in Alcohol Self Administration in Rats

Abstract: A group of adolescent rats, both male and female, underwent the removal of gonads just before the start of puberty to prevent the surge of gonadal hormones, while another group preserved their gonads. Both groups were tested for alcohol self administration through the use of operant conditioning chambers.

6. Student Name(s): Mary Boepple

Faculty Mentor: Dr. Kristen Warren

Title of Poster: Stress, College, and EMDR

Abstract: College presents many stressors for students, often leading to students developing mental health conditions that can negatively impact their academic performance along with the rest of their college experience. Unfortunately, college counseling centers are in high demand without the staffing, training, or ability to help students experiencing chronic stress and related mental health symptoms and conditions. Eye Movement Desensitization and Reprocessing (EMDR) therapy would offer a cost-effective alternative in time and money for these college counseling centers, while offering students an effective therapy for their complex mental health needs. This study aims to expand on Francine Shapiro, the founder of EMDR and AIP theory, work in exploring the usage of EMDR as a treatment for chronic stress.

7. Student Name(s): Madison Boring

Faculty Mentor: Dr. John Miller

Title of Poster: Monster Metamorphosis: a Critical Analysis of Vampire Literature

Abstract: From the gothic literature of the late 1800s to modern day novels, vampires have captured public interest in their fangs and haven't let up for a moment. In some cases these stories are cautionary tales of fear and mystery, and in others they are adventures full of romance and heroism. But how did we go from wooden stakes to sparkling in the sun, and why do writers portray these creatures the way that they do? This research project aims to answer those questions, and uses critical analysis techniques to discover the literary trends of the past so that writers of today can elevate their own monstrous tales.

8. Student Name(s): Meghan Boudreau

Faculty Mentor: Dr. Christopher Normile

Title of Poster: The Cost of Care: Redefining Compassion Fatigue in the World of Social Work

Abstract: Compassion fatigue is a phenomenon that can be experienced in any profession that works with other individuals. It is a common experience that is often overlooked and understudied. The purpose of this literature review was to create a clear framework of what compassion fatigue is, then examine how it may be applicable in the occupational field of social work.

9. Student Name(s): Lillian Branthoover

Faculty Mentor: Dr. Becky Dawson

Community Partner: Diane Craven

Title of Poster: Health and Hope: Supporting Healthcare for All in the Crawford County Area at the Meadville Area Free Clinic

Abstract: The Meadville Area Free Clinic (MAFC) provides healthcare for the underinsured population of Crawford County, Pennsylvania. MAFC is primarily staffed by primary health providers and volunteers from the Meadville community. Monthly, many patients and community members are assisted through the clinic and the program Pass It On, which is run by the Free Clinic. This project was to better understand how the clinic helps the Crawford County area through its programs.

10. Student Name(s): Pallas-Athena Cain

Faculty Mentor: Dr. Janyl Jumadinova

Title of Poster: AquaGator: Tethered ROVs for Water Quality Management

Abstract: "AquaGator: Tethered ROVs for Water Quality Management" aimed to expand on last year's research to continue to create an accurate and cost-effective way to measure the water quality of bodies of water in the Northwestern Pennsylvania Region. The goal of this work was to make the program more efficient and accessible to the users. The software

developed for this research is able to accurately measure and graph the data collected live by the sensors and display it on a local webpage that is usable offline. AquaGator also features automation that allows for automatic data collection at specified depths. The data collected is then turned into a heatmap to help give a more readable view of the water quality at different depths. This project demonstrates a way to accurately collect and display water quality data and how these ROVs can be used for automatic data collection.

11. Student Name(s): Ray Colabawalla

Faculty Mentor: Dr. Adrienne Krone

Community Partner: MARC Community Garden

Title of Poster: Three Future Pathways for the MARC Community Garden

Abstract: My project focused on helping the MARC Community Garden and its custodians to come up with three different potential pathways for the garden so that it may continue to be an active place within the community. The research was focused on being sustainable both in the environmental sense, but also in an economic sense as the community partners wanted a plan that was self-sustaining, rather than simply getting another grant. My research was focused on meeting with and interviewing different local stakeholders to create a long lasting partnership with the garden to help sustain a viable future for the garden.

12. Student Name(s): Elizabeth Davidson

Faculty Mentor: Dr. Brian Miller

Community Partner: Presque Isle Audubon Society

Title of Poster: From Physical to Digital: Restoring the Works of Columnist Evelyn Anderson

Abstract: My project consisted of archival research concerning nature writer and photographer Evelyn Anderson. I received numerous articles, nature columns, books, poems, and photographs written and taken by her or mentioning her from my community partner. My goal was to analyze these paper documents and convert them to an online database, to preserve them and to allow wider public access to her work through the internet. The project also involved creating a Finding Aid to organize the online files and make it easier for those researching her to search for specific articles or topics.

13. Student Name(s): Jaden Debevec

Faculty Mentor: Dr. Andrew Bloeser

Community Partner: Zachary Norwood

Title of Poster: Identifying and Assessing Blight in Crawford County Pennsylvania

Abstract: My project will use several visual representations of what blight is, pairing that with interview comments on a general definition of blight and the PA legal definition. Next, I will apply this to Crawford County blight. Then, I will dive into possible identification plans that the County can take. Looking at assessment strategies that are involved in the identification process and action process. Then I will address any further actions or research needed.

14. Student Name(s): Julia DeSanto and Lauren Dougherty

Faculty Mentor: Dr. Chris Shaffer

Title of Poster: A Mosaic of Environmental GIS Research in the French Creek Watershed

Abstract: Geographic information systems technology has a wide multitude of uses. For instance, it is commonly used to conduct scientific research and present geospatial data and information to stakeholders and the general public in an easy to understand manner. Our summer projects showcase the different ways in which GIS can be used to support environmental research throughout the French Creek watershed.

15. Student Name(s): Mitchell Devore, Ngwe Leku and David Almeida

Faculty Mentor: Dr. Mahita Kadmiel

Community Partner: Erie Retina Research

Title of Poster: Increasing Diversity of Clinical Trial Population via Mobile Clinics

Abstract: Underrepresented populations are not well represented in clinical trial participation. FDA has mandated clinical researchers to implement strategies to raise awareness and provide access to clinical research to diversify clinical trial participation. This summer, at Erie Retina Research (ERR), we launched mobile retina clinics to meet all kinds of communities in our tri-state area to raise awareness of retinal diseases and to detect early signs of disease using a handheld retinal imaging device. Our results demonstrate that our mobile clinic approach was effective in improving access to clinical research to underrepresented communities.

16. Student Name(s): Lucy Glassman

Faculty Mentor: Dr. Heather Brand

Title of Poster: Allegheny Lab for Innovation and Creativity Workshop Series

Abstract: The goal for my research was to build off the previous Allegheny Lab for Innovation and Creativity (ALIC) workshops. The workshops I designed during an 8 week period this summer include how to make stickers on Adobe Illustrator, how to make a zine on Adobe Indesign, and how to digitally paint on Adobe Photoshop using the Wacom Tablet. My work was to plan, design, and practice for leading Allegheny students and

faculty in these workshops in the coming fall semester. I hoped to effectively translate my research to help the attendees develop skills in digital design Adobe Software, so I created thorough step-by-step tutorials for use during and anytime after the workshops.

17. Student Name(s): Olivia Goering, Carolee Cruz-Parkhurst, and Reilly Barkley

Faculty Mentor: Dr. Barbara Riess

Title of Poster: Community Access to World Language Instruction And Services in Crawford County

Abstract: As part of a summer undergraduate research project with the World Languages Department at Allegheny College, we began our research to explore what second language learning and services look like in Crawford County, and possibly identify future sites for collaboration. In order to conduct our research, we decided upon doing interviews with key informants within the educational, community organizing, and business sectors of the community. Our research was broken into 3 steps: (1) Preliminary research, (2) conducting interviews, and (3) analysis of our results and culminated with a final paper and a framework for multiple presentations with hopes to continue the project further.

18. Student Name(s): Olivia Egger

Faculty Mentor: Dr. Caryl Waggett

Community Partner: Crawford County EMS Commission, with project coordinated by Krista Geer, Executive Director, Active Aging; Greg Beveridge and Allen Clark, Department of Public Safety

Title of Poster: Help! I've Fallen and Cant Get Up!: Responding to the Growing Challenge of Lift Assists in Northwest PA

Abstract: Lift assists – calls to 911 in which a person has fallen and is unable to get up – has become a growing challenge for emergency services across the country, including Crawford County. Since there are limited ambulances in rural northwest Pennsylvania, lift assists are typically transferred to the nearest fire department. The Crawford County EMS team commissioned this project to explore ways to reduce the causes and impacts from the high number of life assist calls in the county. We have identified a range of solutions, including community paramedicine, CARES program, legislation, and recruitment tactics, that are being employed successfully in similar communities and that could be applied here in Crawford County.

19. Student Name(s): Kaleialoha Froning

Faculty Mentor: Dr. Michael Mehler

Community Partner: French Creek Arts Collective

Title of Poster: A Dramaturgical Approach to Macbeth: Blending Community History and Literary Analysis For Site-Specific Performance

Abstract: In collaboration with the French Creek Arts Collective, this project aimed to conduct research in preparation for an upcoming production of Macbeth by William Shakespeare in the Crawford County Trust Building for the Witch Walk event coming up in October. Dramaturgs are creative researchers whose research fuels the creative process and frequently involves historical and archival research. For this project, my role as dramaturg included researching the history of the play, conducting text analysis, researching the history of the Crawford County Trust Building, and sharing my findings with the rest of the creative team to make connections between the story and the history of the performance space.

20. Student Name(s): Dilani Frorup, Sophie Mackley, Sam Oaks, and Shyann Rulander
Faculty Mentor: Dr. Tim Chapp

Title of Poster: Synthesis and Characterization of Hydrogenase Mimics for the Hydrogen Evolution Reaction

Abstract: The hydrogenase reaction is a reaction used by nature to split hydrogen for energy. Over the summer, catalysts synthesized by Chapp's lab to emulate this process were further studied. In addition to synthesis and studying the intermediates of the catalyst's reactions, cyclic voltammetry testing began to look at the energy outputs of the reactions.

21. Student Name(s): Colin Jimerson

Faculty Mentor: Dr. Christopher Normile

Title of Poster: Musical Enjoyability and Personality: Is there a Connection?

Abstract: I looked at the relationship between personality types and the enjoyability of different music genres. I recruited people through Prolific and those participants completed the Big 5 Personality Inventory and the Short Test of Musical Preferences on Qualtrics. Results indicated that those who are more open tend to enjoy all types of music and those who are more agreeable tend to enjoy music that is more reflective in nature. Implications of research will be discussed further.

22. Student Name(s): Kyra Jordan and Hunter Goerman

Faculty Mentor: Dr. Melody Devries

Title of Poster: Tracing Perceptions of a Changing Environment in Small-town PA

Abstract: The purpose of the study was to examine how folks in Meadville, PA and surrounding areas notice or interpret changes in their local natural environment. The researchers were interested in understanding how participants describe, manage, think

about or politicize the changes they may notice in the nature around them from year to year. This research used focus groups and individual interviews to hear from Crawford County residents about their experiences with the changing local environment.

23. Student Name(s): Jennifer Hiles and Matthew Luckiewicz

Faculty Mentor: Dr. Tricia, Humphreys

Community Partner: Dr. David Duranick

Title of Poster: Expression of STRA6 in Colon Cancer Cell Lines Transduced with the FAT1 Gene

Abstract: Colon cancer, the third most commonly diagnosed cancer worldwide, is influenced by a multitude of factors including poor diets, obesity, and longevity. This research investigated the expression of the STRA6 gene, involved in vitamin A transport, in various colon cancer cell lines (Colo-205, Caco2, and Lovo) and its interaction with omega-3 fatty acids. RT-qPCR and flow cytometry revealed that STRA6 mRNA expression did not directly correlate with protein translation, suggesting additional regulatory mechanisms. Additionally, a community outreach pamphlet effectively raised awareness about the health benefits of omega-3s and colon cancer prevention.

24. Student Name(s): Josh Huang, Thia Ferderbar, Josephine Reiter, and Lorenzo Tovanche
Summer Mentor: Dr. Mark Kirk

Community Partner: Watershed Conservation Research Center

Title of Poster: Influence of Water Quality Parameters on Trout Distributions in the French Creek Watershed

Abstract: Brook trout and brown trout are important indicator species of stream ecosystem health. The objective of our project was to determine what quality parameters explain the distribution of trout across French Creek. Our results revealed a tendency of trout to occupy streams with colder temperatures and lower alkalinities.

25. Student Name(s): Madison Kermis

Faculty Mentor: Dr. Juvia Heuchert

Community Partner: Ron Arnold

Title of Poster: Crawford County Suicide Task Force Social Media Efficacy Project

Abstract: Stigma against mental health related problems can create significant barriers to early diagnosis and treatment (Robinson et al., 2019). The goal of the Crawford County Suicide Task Force Social Media Efficacy Project was focused less on immediate outcomes and more on future partnership with Allegheny College. By connecting the Allegheny College with the Crawford County Suicide Task Force (CCSTF), mental health literacy and

interaction with CCSTF increase, but also a space for the Survivors of Suicide support group monthly meetings to be held on Allegheny College campus. The three main outcomes of the project include creating additional social media platforms, developing a way to reach a broad audience by consistently post on these social media platforms, and finding a mutual location for CCSTF monthly Survivors of Suicide support group.

26. Student Name(s): Natalie Kocherzat

Faculty Mentor: Dr. Matthew Venesky

Title of Poster: Impact of Forest Type on Tick Abundance

Abstract: Tick abundance is related to habitat suitability, and habitat type can vary heavily between forests. The purpose of this project was to test whether forest plots with different metrics of vegetation and abiotic factors impact tick abundance. To test this, we set up a total of ten plots, measured various biotic and abiotic characteristics, and dragged the plots for ticks. In the end, while biotic differences between the plots weren't significant predictors of nymphal tick abundance, air temperature and relative humidity were negative predictors of tick abundance.

27. Student Name(s): David Marquez

Faculty Mentor: Dr. Melody Devrise

Title of Poster: Research Gender Perspectives: Archives and Media

Abstract: Through my research with the Crawford County Historical Society and Allegheny College Public Archives, I examined the persistent similarities between past and present gender norms. I explored historical documents like those from the Women's Civic Club and studied influential figures such as Ida Tarbell to understand women's struggles for equality in the late 1800s and early 1900s. Using X as a media source, I analyzed how contemporary gender expectations incorporate outdated norms and male supremacy. This research highlights the evolution of societal views on gender and raises awareness of ongoing inequalities.

28. Student Name(s): Ashley Mattocks-Rose

Faculty Mentor: Amara Geffen

Community Partner: The Arc of Crawford County

Title of Poster: Strengthening Community, Inclusion and Programming in The Arc Community Greenspace

Abstract: This summer I had the opportunity to work with Emerita Professor of Art Amara Geffen developing sustainable strategies for event planning and use of The Arc Community Greenspace in downtown Meadville. I was also able to work with Professor Geffen to

develop a presentation for Meadville's Redevelopment Authority pertaining to the future of 960 Park Avenue, the now empty lot and former home of the Park Avenue Cinema adjacent to The Greenspace. Other projects I participated in included site survey development, documentation, and grant writing observations for The Greenspace, and assisting Experience Meadville with a public art walking tour developed in a collaboration with Heather Fish, owner of Hatch Hollow, for June's First Friday Artwalk.

29. Student Name(s): Carson Messemer, Emily Lauer, Lauren Petrarca, and Sydney Thompson

Faculty Mentor: Dr. Becky Dawson

Community Partner: Dr. Anthony Colantonio

Title of Poster: BASIC Clinical Trial

Abstract: The purpose of this study is to learn the best way to roll out and sustain a hospital-wide program that can prevent the spread of bacteria that are known to lead to postoperative infections. As one of 12 participating hospitals, samples were collected from patients at the Meadville Medical Center and their surrounding environments, including equipment and anesthesiologists' hands throughout the phases of their surgery. This study was approved and funded by The National Institute of Allergy and Infectious Disease at the National Institutes of Health (NIH).

30. Student Name(s): Sophia Mita

Faculty Mentor: Dr. Jennifer Houtz

Title of Poster: The effect of temperature on the morphology of Eastern Bluebird nestlings

Abstract: Given that the effects of climate change are worsening, it is important to study how temperature affects the development of organisms including birds. My summer project focused on the effect of extreme temperatures on the morphology of Eastern Bluebird (*Sialia sialis*) nestlings. I simulated heat waves and cold snaps inside the nest box during incubation and measured morphological traits of day 13 nestlings including body mass, wing length, bill length, feather length, and tarsus length. The temperature treatments did not significantly affect any measured morphological trait.

31. Student Name(s): Jada Williams, Anaya Harper, and Akida Nooha

Faculty Mentor: Dr. Lauren French

Title of Poster: Effects of Etomidate-Related Compounds on Voltage-Gated Potassium Channels in *Xenopus Laevis* Oocytes

Abstract: Etomidate is an anesthetic drug that was used for surgery because it has a high therapeutic index and because it barely impacts the cardiovascular system. However, this

drug has some unwanted side effects such as inhibition of adrenal gland function. To combat these negative side effects, a scientist by the name of Dr. Doug Raines made a soft analog of the anesthetic drug Etomidate, called ABP-700, which can show involuntary muscle movements in humans and seizures in dogs. We hypothesize that ABP-700 or one of its metabolites, CPMA, can block voltage-gated potassium ion channels when present in high concentrations and cause involuntary muscle movement.

32. Student Name(s): Gary Murray and Daphne Womack

Faculty Mentor: Dr. Brian Miller

Community Partner: Crawford County Historical Society

Title of Poster: The Baldwin-Reynolds House Museum/ Preserving and Restoring Terrace Street

Abstract: For our 2024 summer research project, we've had the opportunity to work with the Crawford County Historical Society on restoring the property around the Baldwin-Reynolds House Museum. The Baldwin-Reynolds House holds tremendous importance to the history of Meadville and Crawford County. Our goal is to help restore the property around the house as close to originality as possible while also finding ways to make the property more community-orientated. To achieve restoration of the land, we've been conducting research using the CCHS's archives of former Supreme Court Justice, Henry Baldwin, and former Mayor of Meadville, John Reynolds. To get the best idea of how Justice Baldwin, John Reynolds, and their relatives wanted their property to be outside, we've been analyzing many direct conversations that were had between the family. This research consisted of analyzing letters, documents, and journals; some being over 150 years old.

33. Student Name(s): Chi Pham and Alish Chhetri

Faculty Mentor: Dr. Emily Graber

Title of Poster: Iterative Human Computer Interaction Design in Expressive, Multimodal, Artistic Experiences

Abstract: Human-Computer Interaction (HCI) concerns the design of technologies to help humans efficiently interact with digital systems. In the realm of art, HCI design can also facilitate expressive, multimodal, human-art interactions via digital technology, but physical art objects present design challenges when they are not inherently digital. In the case presented here of an art installation involving a piano and a typewriter, such challenges were addressed by undertaking an iterative design process to create an expressive multimedia experience unifying physical art objects and visualizations with electronics and custom software.

34. Student Name(s): Meagan Robare and Chloe Diekman

Faculty Mentor: Dr. Mahita Kadmiel

Title of Poster: Effects of CTZ_I Alone and in Combination with Dexamethasone in Human Corneal and Retinal Pigmented Epithelial Cells

Abstract: Eye diseases cause visual impairments and blindness to at least 2.2 billion people globally. This project tested CTZ_I toxicity on human retinal and corneal cells alone and in combination with Dexamethasone (Dex), a synthetic glucocorticoid. Further research would benefit the production of new drugs, such as CTZ_I, as a potential therapeutic for eye diseases where oxidative stress is a common pathology observed.

35. Student Name(s): Josh Salisbury, Mycah Quevillon, and Andrea Boccia

Faculty Mentor: Dr. Megan Bertholomey

Title of Poster: The Effects of a Glucocorticoid Receptor (GR) Antagonist on Voluntary Ethanol Consumption within Female Sprague-Dawley Rats

Abstract: Several risk factors are known to contribute to the development of Alcohol Use Disorder (AUD), and exposure to traumatic stress has been shown to influence later ethanol consumption greatly. The therapeutic and pharmacological interventions used to treat exposure to traumatic stress have shown mixed efficacies, making it difficult to recommend one methodology over another. Females historically have been excluded from neuroscience and biomedical research, and steps have been taken to narrow the differences in understanding between both sexes, pointing to the idea that young females are now binge drinking more than young males. The purpose of this study was to determine the effects of a glucocorticoid receptor (GR) antagonist on voluntary ethanol consumption in female Sprague-Dawley rats by exposing them to traumatic stress in the form of a predator odor (PO) and providing intermittent access to 20% ethanol solution, followed by treatment with a GR antagonist.

36. Student Name(s): Sunny Stout

Faculty Mentor: Dr. Jennifer Houtz

Title of Poster: Effect of Temperature on Eastern Bluebird Nestling Body Mass and Blood Glucose

Abstract: My research investigates the impact of climate variability on wild Eastern Bluebird (*Sialia sialis*) nestling physiology and fitness. I simulated cold snaps during egg incubation in nest boxes at M. K. Goddard State Park and measured blood glucose, body mass, and fledging success of day 13 nestlings. I hypothesized that cold incubation temperatures would

slow glucose mobilization, potentially leading to reduced body mass and lower fledging success. Cold treatment did not significantly affect blood glucose or body mass of nestlings.

37. Student Name(s): Nelly Stafford

Faculty Mentor: Dr. Jennifer Houtz

Title of Poster: The Influence of Climate Change on Tree Swallow Trade-offs

Abstract: Unexpected environmental factors like heat waves can influence the trade-off between survival and reproduction. By installing a temporary heat pack in cavity nesters, *Tachycineta bicolor*, researchers measured its effects on parental immunity at the egg incubation stage and its carry-over effect on parental care during the post-hatch phase. Researchers found no significant effect of temperature treatment on immune function or feeding rate.

38. Student Name(s): Nadir Khan and Mazzie Standish

Faculty Mentor: Dr. Rich Bowden

Community Partner: Roger Willis

Title of Poster: A Bicycle Program for Underprivileged Youth in Crawford County

Abstract: Owning and riding bicycles is a rite of passage for American youth, yet due to lack of economic resources and knowledge of bicycle maintenance, many youth do not have access to or the ability to enjoy this basic source of transportation and enjoyment. We evaluated bicycle programs in other locations to learn how best to build a program here, and then developed a plan for a bicycle ownership and outreach program for disadvantaged youth in Crawford County. This program would provide a sweat equity program in which youth would actively learn bicycle maintenance and repair in order to receive a bicycle, and be able to independently care for their bike and attend to normal minor repairs. Sweat equity provides an opportunity for bike recipients to invest their own energy and time into their opportunity. To date, we have already collected a half dozen bicycles, and have developed partnerships with Allegheny College and the Family and Community Christian Association in Meadville as locations for bicycle storage and program operations. We developed lists of potential community partners to help advertise the program, and identified safety and maintenance equipment (e.g. helmet, gloves, and tire repair kit) that would be included with each bicycle. An initial meeting with community partners has identified potential partners who can contribute to development of the organization.

39. Student Name(s): Caroline Wheat

Faculty Mentor: Dr. Tarah Williams

Title of Poster: What Drives Support for Anti-Democratic Leaders?

Abstract: This project examines the public's commitment to maintaining democratic rights. Previous research shows that public support for democratic rights is fickle and that only a small fraction of Americans prioritize democratic principles in their electoral choices. To further explore this idea, I provided literature and analyzed data from a survey about political representation. The survey asks participants if the process of political representation makes it easier for leaders to act immorally on their behalf.

40. Student Name(s): Ana Vader

Faculty Mentor: Dr. Lisa Whitenack

Title of Poster: Ontogenetic Changes in Gulper Sharks Observed Through Tooth Morphology

Abstract: Shark teeth have often been studied due to the uniqueness of tooth replacement, but changes in tooth shape across a shark's lifetime can also reveal information about their diet and how it changes as the individual matures. *Centrophorus granulosus*, commonly known as Gulper sharks, have been generally understudied because they are a deep-water species. The shape of Gulper shark teeth were measured to better understand how their tooth shape changes and what predictions can be made about their diet. This information can further be used to determine human impacts on their food source and create advocacy around depletion of their prey to prevent possible extinction of this endangered species.

41. Student Name(s): Aria Zong and Keven Duverglas

Faculty Mentor: Dr. Douglas Luman

Title of Poster: An Adventure Narrative Curriculum for the "term-world" Project

Abstract: As an alternative to the civil society- and civic culture-rooted term-world curriculum (entitled "topia"), we developed infrastructure to support an introductory computer science curriculum based on the historical genre of the adventure-style computer game. This project builds on work completed in previous summers to extend the platform for further customization and expansion.

Thank you for your participation!

Special thanks to the Celebration of Summer Research and Scholarship Planning Committee: Dr. Matthew Venesky, Dr. Lauren Paulson, Dr. Brian Miller, and Erin O-Day-Frye

PARKING ASSIGNMENTS

- Allegheny Commons (pink)
- Allegheny Hall (lt blue)
- Baldwin Hall (dk blue)
- Brooks/Walker (red)
- Cafisch Hall (dk green)
- College Court (yellow)
- Commuters (orange)
- Crawford Hall (purple)
- Edwards Hall (brown)
- Employees (gold)
- North Village (black)
- Ravine Hall (lt green)
- Schultz Hall (silver)

Color dots indicate lot number. Refer to color coded signs upon entry—lots may be sectioned off by permit.

ACADEMICS

- 25 Alden Hall
- 30 Arnold Hall of Music
- 21 Arter Hall
- 6 Carnegie Hall
- 15 Carr Hall
- 32 Doane Hall of Chemistry
- 27 Montgomery
- 29 Murray Hall
- 18 Oddfellows
- 19 Quigley Hall
- 9 Ruter Hall

- 17 Steffee Hall of Life Sciences
- 43 Vukovich Center for Communication Arts

ADMINISTRATION/GENERAL

- 48 454 House
- 10 Bentley Hall
- 4a East Alcove Meeting Room
- 2 Financial Services
- 8 Ford Memorial Chapel
- 33 Henderson Campus Center
- 7 Newton Observatory

- 28 Academic Commons
- 5 Physical Plant
- 22 Reis Hall
- 4 Schultz Banquet Hall
- 31 Shafer Auditorium
- 26 Tippie Alumni Center at Cochran Hall
- 3 Winslow Health Center

ATHLETICS

- 37 Mellon Recreation Building
- 41 Robertson Athletic Complex
- 36 Wise Sport & Fitness Center

DINING

- 13 Brooks Dining Hall
- 34 McKinley's Food Court

RESIDENCES

- 47 Allegheny Commons
- 45 Allegheny Hall
- 23 Baldwin Hall
- 11 Brooks Hall
- 24 Cafisch Hall
- 38 College Court
- 35 Crawford Hall
- 39 Edwards Hall
- 12 Hulings Hall
- 44 North Village
- 49 North Village II
- 46 Phi Kappa Psi Building
- 40 Ravine-Narvik Hall
- 1 Schultz Hall
- 42 South Highland Hall
- 20 Special Interest House
- 14 Walker Hall



ALLEGHENY COLLEGE
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Questions? Call the Office of Public Safety at (814) 332-3357.

UPDATED AUG 2022