Student Research and Internship Symposium

Summer Faculty-Student Collaborative Research (SCoRe) and Internship Presentations

FRIDAY, SEPTEMBER 26 2025
3 - 5 p.m.

SCHEDULE
Student Research & Internship Symposium

Friday, September 26, 2025
Edith Kinney Gaylord Cornerstone Arts Center

3-3:50 P.M. RICHARD F. CELESTE THEATRE

Opening Remarks
Manya Whitaker, President of the College

Student Presentations

Charlie Marks '26, Vox Pop Films and BOXFORT Productions in Los Angeles, CA

Chenxin Xiang '27; Allyson Pena '26, "Is Your Room Making You Think Less Clearly? CO2's Impacts on Cognition and Stress Biomarkers"

Sabrina Ng '27, "Impacts of Climate Warming on Plant-Pollinator Interactions in Low Arctic Tundra"

Ashley Entwistle '26, Arctic Centre, University of Lapland in Rovaniemi, Finland

Ethan Castette '26, "CC Women's Soccer Project"

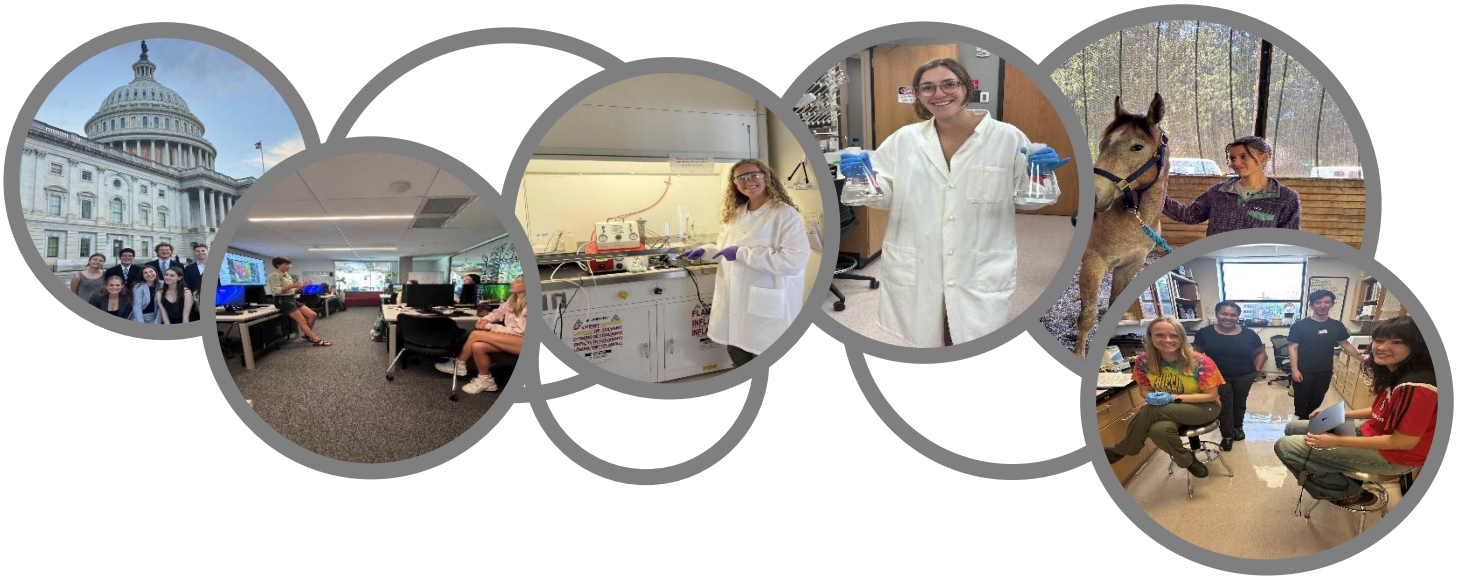
Chloe Johnson '27, Special Olympics Colorado in Denver, CO

Jasmine Liu '27, Colorado State Public Defender in Boulder, CO

3:50-5 P.M. CORNERSTONE MAIN SPACE

Research and Internship Presentations

3:50-4:25 P.M.	Session 1	Research P1-P35/Internship IR1-IR34
4:25-5 P.M.	Session 2	Research P35-P71/Internship IR34-IR68



DEAR CC COMMUNITY,

Welcome to the annual Student-Faculty Collaborative Research (SCoRe) & Internship Symposium! Today, we celebrate students who spent last summer engrossed in research and internships that challenged them to think deeply, take initiative, and explore beyond the classroom.

At Colorado College, learning comes alive when students are fully immersed in their disciplines. For some, that means designing experiments in a lab, analyzing results, and drawing meaningful conclusions. For others, it means shaping impactful nonprofit programs with limited resources or contributing to sales strategy for a corporation. Across these experiences, students are asked to apply interdisciplinary knowledge to real-world problems; take responsibility for their learning; seek guidance from mentors; and collaborate with peers and professionals in ways that mirror the world they will enter after graduation.

As you explore today's presentations and hear students' reflections, I hope you will appreciate the process as much as the results. Pay attention to the curiosity and commitment behind each project. Note the skills developed along the way — such as analytical thinking, project management, and adaptability — that will inevitably shape how students approach challenges long after they leave CC.

I am deeply proud of our students and grateful to the faculty, staff, alumni, and mentors whose guidance continue to make these opportunities possible. Thank you for joining us as we celebrate the liberal arts come to life.

Warmly,

Manya C Whitaker

Manya Whitaker
President

Vox Pop Films + BOXFORT in Los Angeles, CA

Student Intern: Charlie Marks ’26
Major: Film and Media Studies Major and minor in Environmental Studies

Vox Pop Films is the shared independent production company of documentary filmmakers Lisa Hepner and Guy Mossman, Colorado College '95, in Los Angeles, California. The pair, who are married, are known for their films 'The Human Trial' and 'Speak.' This summer I interned for both of them on their respective projects; for Lisa I helped her during the production of her upcoming short documentary on Kevin and Bridget Cooley of Altadena, California, who are photographers and artists reconciling with the personal loss from the wildfire that destroyed their home and community in the January Eaton Fire. The twist is that Kevin has spent much of his artistic career fascinated with fire and its natural presence in ecosystems and its potential for destruction, especially given the impact climate change is having on dry chapparal ecosystems in Southern California and other parts of the United States. I got to use my Environmental Studies knowledge I have gained as a CC student to help Lisa craft a impactful narrative. For Guy, I helped him and his team on the ongoing promotion of his film 'Speak.', which premiered at Sundance this year. We worked on promoting the film on social media and at film festivals, as well as developing a campaign to bring the film to schools across the country to support and showcase the impact of speech and debate on high school students. Over the summer I also was an intern for Matt Wassong at Boxfort, an LA-based production company that makes short and feature length narrative films, music videos, commercials, and other visual media. While in LA, I assisted Matt on his upcoming feature film 'I Hate it Here,' creating pitch decks and writing coverage. I also got to edit a behind-the-scenes video for his production of the visuals for Eric Prydz's HOLOSPHERE, a state-of-the-art audio/visual production that debut in Ibiza this summer for Eric's residency. This was extra special for me as Prydz is one of my favorite musicians. All in all, this was an extraordinarily productive summer for me as a filmmaker and environmentalist and helped me build connections with Los Angeles filmmakers I hope to work with again post-college.

Is Your Room Making You Think Less Clearly? CO2's Impacts on Cognition and Stress Biomarkers

Student Researcher: Chenxin Xiang ’27; Allyson Pena ’26
Majors: Molecular Biology; Chemistry and Biochemistry
Faculty Collaborator: Sally Meyer, Chemistry and Biochemistry

Elevated indoor carbon dioxide levels are widely recognized to be associated with physiological dysfunction and cognitive difficulties, including impaired attention and reduced decision-making capacity. These effects raise concerns about the potential impact on college students’ academic outcomes and long-term health issues when they live in small, well-sealed rooms. This study investigated the effects of short-term exposure to indoor CO_2 concentrations of 600, 1200, and 2000 ppm on cognitive performance and salivary stress biomarkers, specifically cortisol and α-amylase, in young adults. One participant completed five 6-hour sessions under controlled CO_2 conditions. After each exposure, saliva was collected for ELISA analysis of cortisol and α-amylase, followed by a cognitive test battery assessing attention and memory. Biomarker responses were modest at 600 and 1200 ppm, but peaked on the first day of 2000 ppm exposure, consistent with acute activation of physiological stress pathways. However, these levels declined over subsequent days under the same high-CO_2 condition, suggesting potential physiological adaptation. While current data from the cognitive tests are inconclusive, subjective assessments indicated increased fatigue and difficulty concentrating at higher CO_2 levels. Future work will involve a larger and more diverse sample and refined cognitive testing tools.

Impacts of Climate Warming on Plant-Pollinator Interactions in Low Arctic Tundra

Student Researcher: Sabrina Ng ’27
Major: Organismal Biology and Ecology
Faculty Collaborator: Dr. Roxaneh Khorsand, Organismal Biology and Ecology

Climate change is causing the Arctic to experience rapid warming, with potential consequences for the stability of Arctic ecosystems. Shifts in phenology, or the timing of flowering, may generate mismatches between plants and pollinators, prompting a need for greater investigation into how these communities will change – especially in the Low Arctic, where research has been limited. Our work builds on long-term ecological research utilizing open top chambers to simulate warming in two tundra plant community types on the North Slope of Alaska. During the 2025 field season, we monitored flowering phenology, floral density, nectar quantity and quality, and insect visitation across warmed and unwarmed plots. We are currently analyzing this data, which will allow comparisons with previous years to reveal more long-term trends. Findings from previous years indicate warming increases floral density and extends flowering duration in forbs and shrubs. Insect visitation data revealed that Dipterans (flies and mosquitoes) are the most frequent floral visitors, while Hymenopterans (bees and wasps) are the most effective. Nectar quantity was found to increase under warmed conditions in some species. These results suggest that warming alters plant reproductive traits and pollinator interactions, with potential long-term consequences for the structure and resiliency of Arctic communities.

Arctic Centre in Rovaniemi, Finland

Student Intern: Ashley Entwistle ‘26
Major: History and Political Science

I worked as a summer research intern at the Arctic Centre—an international, interdisciplinary research hub—under the supervision of Dr. Sanna Kopra, head of the Arctic International Relations team. I spent one month on-site in Lapland and continued working remotely for an additional month. My primary responsibilities included assisting with research and conducting a literature review for Dr. Kopra’s project on the geopolitical consequences of China’s strategy for the deep seas in the Arctic region. This involved analyzing Chinese and English media sources, peer-reviewed articles, and UNCLOS legal documents, which governs mining activity in the high seas. I also contributed to other projects, including revising a paper on transboundary biodiversity protection in Europe, with a focus on four comparative case studies across the continent—our area of focus being the Arctic border shared by Finland, Sweden, and Norway. This internship taught me more than I could have imagined. As a visiting researcher, I also had the opportunity to connect with and learn from a fascinating array of individuals—Arctic governance scholars, human rights lawyers, reindeer herding anthropologists, and the list goes on. I'm excited to continue exploring opportunities at the intersection of international relations, law, and environmental policy in the Arctic region in the near future!

CC Women’s Soccer Project

Student Researcher: Ethan Castette ’26
Major: History
Faculty Collaborator: Jamal Ratchford, History

The US women's national team is the most dominant in history, with four FIFA Women's World Cup titles and five Olympic gold medals in their trophy case. What many don’t know, including a remarkable number of CC’s own, is that Colorado College helped make that possible. In fact, CC is one of the most important schools for the history and development of women’s soccer in the world. When the team was founded in the spring of 1975, fifty years ago, there was no professional league or serious support for women’s sports. Colorado College was instrumental in changing this. Under the leadership of Coach Steve Paul and the adoption of Title IX in athletics, CC rose its team to varsity status and became one of the most dominant programs in the country. When there was no national championship to prove their worth, Coach Steve Paul organized and hosted the first collegiate national championship on Washburn Field. The work that this research opportunity aims to do, is to tell this incredible story in order to assert the remarkable legacy that the legends of Colorado College Women’s soccer have left on both our college and the sport as it exists today.

Special Olympics Colorado, Centennial, CO

Student Intern: Chloe Johnson ‘27
Major: Political Science

This summer, I had the privilege of interning at Special Olympics Colorado (SOCO). SOCO is a non-profit organization that provides year-round sports training and athletic competition for children and adults with intellectual disabilities. Our mission is to provide athletes with opportunities to develop physical fitness, demonstrate courage, experience joy, and form lasting friendships. As the executive assistant intern, I shadowed the president and CEO, learning the ins and outs of non-profits. I supported major events, including Camp Shriver, State Summer Games in Grand Junction (as head of Olympic Town Plaza), the CU Unified Football Camp, the State TopGolf Tournament, the Breakfast of Champions, the Denver Pride Parade, and Young Athletes Camp. The hands-on experience of planning, executing, and cleaning up events coupled with the administrative skills I learned such as: non-profit budgeting, how to call, create, and manage relationships with donors and sponsors, creating social media content and signage, organizing excel spreadsheets, and cleaning out the office warehouse have all strengthened my overall confidence and leadership skills. I also had the opportunity to sit in on staff meetings, take notes, and contribute to SOCO’s2025–2026 strategic plan, giving me valuable insight into nonprofit leadership and long-term planning. This experience has been both professionally enriching and personally meaningful as I plan to pursue a career in disability rights law, deepening my passion for inclusion, advocacy, and unified sports while showing me the power of community and inclusion in action.

Colorado State Public Defender in Boulder, CO

Student Intern: Jasmine Liu '27
Major: Economics

This summer, I had the incredible opportunity to intern with the Office of the Colorado State Public Defender (OSPD) in Boulder, Colorado. OSPD defends and protects those accused of crimes who cannot afford to retain counsel. Each defense team includes attorneys, paralegals, social workers, and investigators. My internship focused on the investigation part of the defense process, working with investigators who build the case from the ground up. I conducted witness interviews, requested records, and drafted and served subpoenas. I was assigned my own personal caseload of misdemeanors, in which I acted as the criminal defense investigator on the case. Over the course of my internship, I strengthened my attention to detail, honed my organizational abilities, and fine-tuned communication skills essential for an environment so fundamentally grounded in people. My time at OSPD not only allowed me to build personal and professional skills but also helped me gain insight on the criminal justice system as a whole. Seeing the system up close allowed me to grasp the work that is yet to be done, and I'm extremely grateful for the opportunity to examine these systems more critically. I'm excited to take these lessons with me as I pursue a career in law.

What is SCoRe?

During the summer of 2025, over 140 students participated in research under the mentorship and support of Colorado College's dedicated faculty both on and off campus. While the Block Plan structures academics around a condensed timeline, summer research allows students and faculty collaboratively to explore deeper into topics, by spending extended time researching in the classroom, the library, the lab, and the field.

The Student Collaborative Research (SCoRe) Program supports both students and faculty through academic and community field trips and gatherings, peer-to-peer presentations and discussions, and professional development workshops. We are excited to showcase the work CC faculty and students have done this summer.

Visit: https://www.coloradocollege.edu/offices/careercenter/our-programs/research-opportunities/index.html

P1 Helping Other People Do Physics: A Story About Circuit Design

Student Researcher: Mason B. Gardner ’26
Major: Physics
Faculty Collaborator: Adam Light, Physics

The Light Lab is currently studying the breakdown of polyfluoroalkyl substances (PFAS) and the modification of surface chemistry using plasma jets. My role was to design and build electronic devices for use in these plasma experiments. A high-speed transimpedance amplifier for a photodiode array, a kilohertz plasma jet driver, and a frequency-doubling clock circuit. These all required very different kinds of attention and design, from intensive considerations taken in the PCB architecture to ensure stability, to cost-saving measures to allow for ease of implementation. All devices required bespoke designs to address lab-specific instrumentation and financial challenges. We seek to resolve the rate of injected solvated electrons at the water plasma interface by extracting a trace modulation in the absorption spectrum of water, using a pulsed white laser. Our amplifier must be sensitive and fast, resolving the nature of the laser pulses. To ensure we are not measuring induced EMI signals, our timing scheme must be precise and in phase with the laser’s driving signal. It is crucial that the instruments I designed can be relied on to be stable and consistent. I outline how I designed the three aforementioned devices to address these concerns and the results of their implementation. I also suggest further research and design that could build on the solutions I have devised.

P2 Thesis: The Intertropical Convergence Zone (ITCZ)

Student Researchers: Allison Barker ’26
Major: Environmental Studies
Faculty Collaborator: Allison Lawman, Environmental Studies

The Intertropical Convergence Zone (ITCZ) forms where the Northern and Southern Hemisphere trade winds converge, producing a band of high precipitation that migrates seasonally across the tropics. Variations in the position of the ITCZ influences regional climate patterns, including tropical cyclone (TC) activity in the Atlantic basin. This study uses the Community Earth System Model Last Millennium Ensemble (CESM-LME) and downscaled simulated North Atlantic TC tracks to investigate changes in the position of the Atlantic ITCZ and TC activity from 850-2005 CE. We first define the location of the ITCZ as the latitude with maximum precipitation between 10-50°W in the Atlantic basin. We then examine the model years with the northernmost and southernmost ITCZ positions to assess the role of ITCZ shifts on Atlantic hurricane frequency and intensity. We find that when the ITCZ is shifted further to the north, the frequency of hurricanes in the Main Development Region (MDR) of the North Atlantic increases relative to intervals when the ITCZ is shifted equatorward. Additionally, tropical cyclones with genesis locations within the MDR have substantially higher maximum wind speeds compared to tropical cyclones that form near coastal areas outside the MDR. The latitudinal position of the ITCZ strongly modulates North Atlantic hurricane activity, and these findings highlight the ITCZ as a key driver of long-term variability in tropical cyclone frequency with implications for improving projections of future hurricane risk.

P3 Making Japan. Mingei and The Creation of the Modern Japanese State

Student Researcher: Peter Gottsegen ’26
Majors: Anthropology and Asian Studies
Faculty Collaborator:
Faculty Collaborator: Yogesh Chandrani, Asian Studies

In this paper I will explore the origin the Japanese folk-art movement called “mingei” (民芸). This movement was popular in the 1920s and remains popular today. Japan there are mingei museums, arts and crafts guilds, and even stores dedicated to selling mingei objects. This art movement was founded by several artists and philosophers, the most prominent was Soetsu Yanagi. Yanagi wrote many essays and published several books, detailing his thoughts on the nature of beauty in arts and crafts. Analyzing many of Yanagi’s published works and examples of curated mingei pieces I will discuss the origin of the mingei movement and argue that mingei is an orientalist philosophy, weaponizing orientalist views of both Japan and Asia in order to bolster the credibility of mingei. I will then turn my discussion to how the mingei movement and these orientalist tropes were used by the Japanese government to assimilate the Ainu and Okinawan people into the Japanese population, ridding them of a unique cultural identity. I will then focus my attention on Japanese colonial exploits in Korea and Manchuria and discuss how mingei was fundamental in increasing Japanese control over the two regions and was an important part of Japanese colonial aggression. Using Yanagi’s own writings as well as modern critiques of the mingei movement I argue that the Japanese mingei movement is intertwined with Orientalist stereotypes about Japan and the rest of Asia and was an important ideology used in the creation of the modern Japanese state through external and internal colonization.

P4 *T. ramosissima* Population Mediated Water-Use Traits

Student Researcher: Peter Gottsegen ’26
Major: Organismal Biology and Ecology
Faculty Collaborator: Shane Heschel, Organismal Biology and Ecology

The invasive shrub *Tamarix ramosissima* poses a threat to native riparian ecosystems throughout the southwestern United States. Due to its ability to establish and persist in stressful conditions, in part ascribed to its extensive root biomass allocation and plastic water use traits, *T. ramosissima* is able to outcompete native species and alter water table depths. Stressors such as low light availability and drought conditions reduce *T. ramosissima* fecundity and mediate the species' stomatal activity, further emphasizing the importance of water use relations in drought prone and altered flood regime environments. Stomatal regulation is heavily dependent on traits including stomatal density and abscisic acid (ABA) sensitivity/biosynthesis. Furthermore, an understanding of these physiological and morphological traits, is essential in interpreting this plant's competitive relationships and water system impacts. In this study, we will ass ess the impact of riparian growing conditions on *T. ramosissima* water relations by asking the following questions: 1) How do growing conditions impact populations' stomatal conductance? 2) Does stomatal density differ with population growing conditions? 3) Does variation exist in population sensitivity to and/or endogenous content of ABA?

P5 Circle Packings Over $\mathbb{Q}(\sqrt{-2})$

Student Researcher: Dakota Hinman ’26
Major: Mathematics
Faculty Collaborator: Stefan Erickson, Mathematics and Computer Science

Circle packings are patterns formed by recursively filling the space between sets of circles. A classic example is Apollonian circle packings constructed from sets of four mutually tangent circles whose curvatures, taken from the field $\mathbb{Q}(i)$, satisfy the Descartes equation. These arrangements, known as Descartes quadruples, inform results about allowable curvatures within packings and the number of distinct packings. A natural question is how these structures and results change using curvatures from other imaginary quadratic fields. Building on the work of Graham et al. and Stange, we study analogous circle packings over the field $\mathbb{Q}(\sqrt{-2})$ that arise from sets of four mutually non-tangent circles, called cubicles, which satisfy a similar equation. We classify the resulting packings by establishing a correspondence between root cubicles and reduced binary quadratic forms, allowing us to count packings using class numbers. Furthermore, we examine which integers appear as curvatures within a packing using congruence conditions on cubicles modulo 4.

P6 New York City and Cinema of Precarity

Student Researcher: Sophia Lisco ’26
Major: Film and Media Studies
Faculty Collaborator: Scott Krzych, Film and Media Studies

Emerging filmmakers are increasingly creating realist films about precarious and working-class communities. These films tend to rely on low-budget strategies, non-professional actors, and simplified storylines. Such independently produced (“indie”) films, often shot in the outer boroughs of New York City, clearly reflect historical economic trends such as migration, income inequality, and gentrification. However, these films might be better understood by considering how they reflect, depart from, or otherwise city earlier approaches to representing class dynamics in NYC cinema. My research, conducted under the guidance of Dr. Scott Krzych, adopts a materialist approach to analyzing contemporary New York independent films. So far, little work has been done within film studies to connect cinemas of precarity with urban, independent films set in the United States. By insisting on firmly situating these indie films within their external geographic, economic, political, and temporal settings, we are better able to link their material/aesthetic dimensions to resonant work in political theory.

P7 Simulating Single Transferable Voting for the Colorado House of Representatives

Student Researcher: Nora Nelson Laird ’27; Iris Pixler ’27; Katherine Rodbell ’27
Majors: Mathematics; Political Science; Mathematics and Physics
Faculty Collaborator: Beth Malmskog, Mathematics and Computer Science

Social choice theory research demonstrates that single transferable voting (STV) results in more proportionally representative legislative bodies. We aim to understand how using multi-member districts and ranked ballots with STV would affect the representation of political parties in the Colorado House of Representatives. We investigated this objective by producing 10,000 multi-member districting plans of Colorado, generating ranked ballots for each of these plans using returns from the 2022 Colorado attorney general race, and simulating STV using these ballots. Our simulated STV elections for the Colorado House of Representatives gave more proportional representation for Democrats and Republicans than the current first-past-the-post system. Future research should explore how the implementation of STV would influence the representation of racial and ethnic groups in the Colorado General Assembly to provide guidance on electoral reform in the state.

P8 Optimizing Sup-tRNA Genome Integration for the Treatment of Nonsense Mutations

Student Researcher: Vanessa Perez[a,b] ’26
Major: Molecular Biology
Faculty Collaborator: Dr. David R. Liu[b,c,d]
Research Collaborators: Dr. Sarah E. Pierce[b,c,d], Dr. Holt A. Sakai[b,c,d]
Faculty Program: [a] Department of Molecular Biology, Colorado College, Colorado Springs, CO; [b]Merkin Institute of Transformative Technologies in Healthcare, Broad Institute of MIT and Harvard, Cambridge, MA, USA. [c]Department of Chemistry and Chemical Biology, Harvard University, Cambridge, MA, USA. [d]Howard Hughes Medical Institute, Harvard University, Cambridge, MA, USA.

Nonsense mutations, which introduce premature stop codons that often lead to nonfunctional proteins, are responsible for 11% of all genetic diseases. Engineered suppressor transfer RNAs (sup-tRNAs), which recognize premature stop codons, are one approach to bypass early stop signals and restore the production of full-length proteins, potentially treating nonsense-associated genetic diseases. Despite the promise of sup-tRNAs as a mutation-agnostic approach in reading through premature stop codons across many genetic diseases, current methods to deliver sup-tRNAs into cells is transient, leading to reduced protein restoration and limited long-term therapeutic effects. In this project, our goal is to leverage prime editing (PE), a genome editing tool, to permanently install sup-tRNA sequences into the genome of mammalian cells for sustained therapeutic effect. We cloned pegRNAs that can install the sup-tRNAs into the genome into DNA plasmids and introduce them into HEK293T cells via transfection. Preliminary results using a GFP-based reporter system show that PE6c outperformed PEmax in restoring GFP expression, with a significantly higher percentage of GFP+ cells. These early findings suggest that PE6c may enable more efficient installation of functional sup-tRNAs and support further comparison of alternative editing strategies. We will use next generation sequencing to measure the efficiency of the prime edit installation. We expect that PE will lead to successful and lasting integration of sup-tRNAs in the genome. If successful, this strategy could offer a more reliable and mutation-agnostic treatment for genetic diseases caused by nonsense mutations.

P9 Optimization of Chemical Pretreatments of Tooth Enamel for Forensic Analysis Using Thermogravimetric Analysis (TGA)

Student Researcher: Luis Rios ’27
Major: Biochemistry
Faculty Collaborator: Murphy Brasuel, Chemistry and Biochemistry ; Nate Bower, Chemistry and Biochemistry

Scientists have used Attenuated-Total-Reflectance Fourier-Transform-Infra-Red (ATR-FTIR) to determine how effective specific treatments are for cleaning teeth samples. Although this technique can determine how successful the procedure unfolds, the overlapping of organic and inorganic material presents an issue in determining the efficacy of debris removal. In this project, Thermogravimetric Analysis (TGA) is used as an alternative to better understand the effectiveness of cleaning treatments with these practices. Using TGA clarifies and quantifies the materials removed from tooth samples (i.e. water, volatile, organic, carbonate content). The applications of TGA spread from forensic analysis, archaeological studies, and isotopic mapping, providing more contextualization through quantifying the removal of material. The treatments used consisted of Ultrasonication, Hydrogen Peroxide, Hydrazine, Ethanol, Bleach, Acetate Buffer (pH 4.8), and Acetic Acid. These treatments were found in literature deemed of interest to the project. A multitude of combinations were performed on collected enamel samples to examine the impact of the treatments. Out of the treatments tested in the project, bleach was determined to yield the best results in removing organic material. Investigations surrounding its concentration should be investigated to establish a consensus on the best percentage of bleach to uphold the integrity of teeth samples without compromising its structure.

P10 Centromeres of The Budding Yeast *Cyberlindnera mrakii* Contain Transposable Elements and Repeat Sequences

Student Researchers: Marin Snyder ’26; Marin Snyder ’26
Majors: Molecular Biology; Undeclared
Faculty Collaborator: Sara Hanson, Molecular Biology

Centromeres ensure accurate segregation of chromosomes during cell division and DNA replication by providing a site for assembly of the kinetochore. Investigations into different species of yeast have revealed that there is immense diversity when it comes to centromere structure and location. There has been a dramatic evolutionary shift from regional, epigenetically defined centromeres to short, genetically defined point centromeres, which is still not fully understood. Recent hypotheses suggest the existence of an intermediate centromere type, characterized by transposable elements and repetitive sequences that may represent a transitional form. This study explores the budding yeast, *Cyberlindnera mrakii* (Y-1364), for the presence of these elements because it is closely related to species that contain this intermediate centromere form. Using long-read sequencing and detailed genome annotations, we generated a high-quality genome assembly and identified candidate centromere regions. These regions exhibit features such as repetitive sequences and long Ty5 transposable elements, suggesting a centromere structure distinct from both point and regional centromere types. These findings contribute to a deeper understanding of centromere evolution in budding yeast and support the potential existence of structural intermediates between point and regional centromeres.

P11 Computing the Shape of X-ray Flux Data of Solar Flares: An Application of Topological Data Analysis

Student Researcher: Abby Burnham ’26
Major: Mathematics
Faculty Collaborator: Molly Moran, Mathematics and Computer Science

Motivated by a strong connection between pure and applied mathematics, this research project focuses on the mechanics and applications of Topological Data Analysis (TDA), specifically through the method of persistent homology. The goal of this project is to use publicly available data to uncover certain topological features of a point cloud, such as the shape of the topological space, which provides insight into the connectedness of the data in multiple dimensions, and the persistence of certain features like components and loops. The persistence of these topological features can be visualized using barcodes and Vietoris-Rips diagrams to better understand how they exist within the topological space itself. This project centers around X-ray flux data of various Geostationary Operational Environmental Satellites (GOES) from the National Oceanic and Atmospheric Administration (NOAA) in an effort to understand more about the shape of this data before, during, and after solar flares, or space weather events.

P12 Better Protein Representations via Better Amino Acid Representations

Student Researchers: Cassidy Recker ’26; Andrew Peng ’27
Majors: Chemistry; Computer Science
Faculty Collaborator: Cory Scott, Mathematics and Computer Science
Research Collaborator: Amy Douny, Chemistry and Biochemistry

Machine learning models struggle with understanding three-dimensional (3D) geometry, particularly in dynamic, deformable structures like proteins. In this work, we introduce a novel approach to improving protein representations by using Signed Distance Functions (SDFs). SDFs are functions that return the distance to the surface of a given shape and are widely used to represent deformable or articulatable shapes. We construct a dataset of pose-parameterized SDFs for each of the 20 standard amino acids using position normalized structural data extracted from the Protein Data Bank. Using this dataset, we train a dedicated neural network model to determine articulated SDF architectures for each amino acid. Based on our neural network outputs, we are able to recreate 3D mesh models of amino acids. Our models achieve low reconstruction error across amino acid types, demonstrating their capacity to capture complex, deformable 3D geometry. We release both our amino acid SDF dataset and the trained model weights as resources for the community. This work paves the way for improved downstream protein modeling tasks by enabling more accurate geometric representations at the amino acid level.

P13 Tangled Up in Blue: The Police-elasticity of Crime Across Demographic and Socioeconomic Diversity

Student Researcher: Robert Repenning ’26
Major: Mathematical Economics
Faculty Collaborator: Daniel Johnson, Economics and Business

Our work investigates how the responsiveness of crime to increased policing varies across diverse demographic and socioeconomic contexts. While prior studies often rely on models that assume homogeneity in the police-crime relationship, we argue that addressing contextual variation at the level of individual jurisdictions is critical. Using Uniform Crime Reporting (UCR) data for 224 U.S. jurisdictions over a 24-year period, we replicate and extend the work of Chalfin et al. (2022) by incorporating measures of population size and racial composition as important contextual determinants of police effectiveness. We present robust findings using crime levels, changes in crime rates, and per capita crime rates across a range of categories of crime. Our findings show that both population size and racial diversity significantly affect the way in which crime responds to changes in policing, with larger and more White-identifying cities seeing the potential deterring results of increased policing while smaller and more Black-identifying cities associating increased policing with increased crime. Since police expenditures and hiring are primarily determined at the local level, this work has clear policy implications.

P14 Modeling Quorum Sensing Dynamics Using Stochastic Differential Equations

Student Researcher: Katie Smela ’26
Major: Mathematics
Faculty Collaborator: David Brown, Mathematics and Computer Science

Quorum sensing is a process of intercellular communication that enables bacteria to ascertain population density and coordinate group behaviors through the release and detection of signaling molecules, often in response to environmental stimuli. This project investigates the stochastic dynamics of quorum sensing using two non-linear models of cellular activation, each differing in the mechanism of deactivation: one assumes linear deactivation while the other incorporates non-linear dependence on signal molecule concentration. To analyze these models, we apply a Fokker-Planck framework to approximate the long-term probability distributions of the number of actively quorum sensing cells. We further estimate mean first passage times to characterize the likelihood of spontaneous switching between steady-state population sizes of quorum sensing cells. Additionally, we calculate splitting probabilities to determine the favored steady state once the population reaches the system’s unstable equilibrium. By examining system behavior across different population scales, this research highlights how noise influences bistable quorum sensing dynamics and provides insight into the stability and robustness of collective bacterial decision-making.

P15 Tropical Hydroclimate Responses to AMOC Weakening: Insights from Isotope-enabled Climate Model Simulations and Paleoclimate Proxies

Student Researcher: Claire Ackerman ’26
Major: Environmental Chemistry
Faculty Collaborator: Allison Lawman, Environmental Science

The Atlantic Meridional Overturning Circulation (AMOC) is a system of ocean currents that transports heat and influences rainfall patterns worldwide. The strength of AMOC is projected to weaken in the future with anthropogenic climate change, but the spatial patterns of hydroclimate change remain unclear. Past time intervals with known AMOC weakening such as Heinrich Stadial 1 (HS1, 17-15 thousand years ago) provide an opportunity to investigate the spatial complexity of tropical hydroclimate responses in both climate model simulations and paleoclimate records from natural climate archives. Here I analyze model simulations with AMOC weakenings from the isotope-enabled Community Earth System Model iTraCE Project (He et al., 2021) and compare them to a synthesis of rainfall-sensitive paleoclimate proxy records (DiNezio et al., 2025). I focus on the oxygen and hydrogen isotopic composition of precipitation ($\delta^{18}O$ and δD, respectively) to evaluate both the model–data agreement and the internal consistency of the various isotope responses within the model. Results reveal pronounced discrepancies between the model and data in the western Pacific/Maritime Continent, where hydroclimate responses are highly heterogeneous. I also find additional disagreements along the western coast of Africa and across eastern Asia. These discrepancies highlight limitations in both the model and the available proxy network. Expanded proxy coverage, particularly from marine sediments, is needed to better constrain mechanisms of AMOC weakening and to refine model simulations. The concerted use of both models and proxy records can allow us to validate projections of hydroclimate changes that will affect humans across the globe.

P16 Bars and Spirals in Nearby Galaxies

Student Researcher: Quintin Falk ’27
Major: Physics
Faculty Collaborator: Dhanesh Krishnarao, Physics

Barred galaxies are defined by elongated structures extending across the center made of gas and stars. These structures may change where stars form and how gases move around. This calls into question the evolution of the galaxies from these changes. Our project aimed to find patterns of variation to understand how bars affect the evolution of these galaxies. In our approach, we used a large sample of nearby barred galaxies from the SDSS-IV MaNGA survey. For each barred galaxy in the sample, we constructed semi-circle plots of the different tracers of gas at different wavelengths that we found through spectroscopy. We also constructed plots for star populations within which we focused on the stars' ages, different atoms that track gasses in galaxies from different sources, and stars’ masses. Different combinations of the tracers of gas were used to find physical and chemical properties of the galaxies. The data was averaged into one plot for each aspect we analyzed, so we were able to find patterns within them. While still in progress, this approach gives us a framework to find bar-driven patterns of variation in star populations and physical properties found through a combination of tracers of gas to better understand how these galaxies evolve.

P17 Fluorinated dipeptides display selective toxicity against *Pseudomonas aeruginosa*

Student Researcher: Sarah Buchman ’26
Major: Molecular Biology
Faculty Collaborator: Olivia Hatton, Molecular Biology

Pseudomonas aeruginosa is a Gram-negative bacteria that can cause fatal infections to immunocompromised individuals *P. aeruginosa* tends to thrive in hospitals on medical equipment or with patients experiencing chronic wounds and has shown increasing antibiotic resistance. *P. aeruginosa* forms biofilms which function to protect bacteria from environmental stressors & allows long-term persistence. Biofilm can prevent antibiotics from reaching the bacteria and treating the infection effectively. Previous research has indicated that the amino acid Phenylalanine (Phe), specifically in a fluorinated dipeptide structure, has proven to reduce biofilm formation of *P. aeruginosa*. Looking further, crystal violet and cell proliferation assays were performed to determine which compounds had the ability to reduce bacterial growth or biofilm formation while being selective toxic towards *P. aeruginosa*. Monofluorinated Phe derivatives were able to reduce bacterial growth and biofilm formation, while difluorinated Phe derivatives were only reduced biofilm formation. When testing selective toxicity with an MTS assay analyzing cell proliferation on three lines of human cancer cells, the difluorinated Phe derivatives displayed the most selective toxicity towards *P. aeruginosa* for all three lines of cells. Overall, both monofluorinated and difluorinated derivatives of Phe were successful at reducing biofilm formation, with the difluorinated derivatives displaying higher selective toxicity. The difference in performance with decreasing bacterial growth between the derivatives could suggest different mechanisms of action between monofluorinated and difluorinated derivatives for reducing biofilm.

P18 Optimization of *Silphium integrifolium* Oil Extraction Techniques for the Characterization of *Silphium integrifolium* Oil and Formulation of *Silphium integrifolium* Moisturizer

Student Researcher: Brisa Garcia ’26
Major: Biochemistry
Faculty Collaborator: Murphy Brasuel, Chemistry and Biochemistry
Research Collaborators: David Van Tassel; Betsy Trana

In an era of increasing need and desire for something innovative in the cosmetics industry, and the need for greener agricultural practices, Rosinweed (*Silphium integrifolium*) has become a great contender. *Silphium integrifolium* (Rosinweed) is a perennial flower native to the Midwest region of the United States. It is frequently used for medicine because of its antimicrobial properties. Rosinweed Oil contains squalene and may contain phytoene which can protect the skin and hydrate it. These properties, along with its green agricultural production, also make it with a greet candidate for environmentally conscious cosmetic production. The goal of this study is to ultimately use Super critical CO_2 extracted Rosinweed (*Silphium integrifolium*) oil to produce moisturizer and soap products that comply with standards in the cosmetic industry. The comparative analysis of *silphium integrifolium* oil with sunflower oil and olive oil via GC-MS allowed conclusions to be made about the profile of *s. integrifolium* and the potential of the oilseed crop as a feasible alternative to other popular oil seed crops. Upon rosinweed oil moisturizer formulation, the product was compared to formulated moisturizers with similar oil bases (olive oil and sunflower oil) as well as commercially available moisturizers to reinforce the potential of rosinweed oil as an alternative base for cosmetic production and confirm that the moisturizer formulation is up standard in pH, acid value, stability, and iodine values (all of which showed promising results).

P19 Recap

Student Researcher: Brooktie Frogge'26
Major: Computer Science
Faculty Collaborator: Janet Burge, Mathematics and Computer Science
Research Collaborators: Dr. André van der Hoek; Dr. Adriana Meza Soria

Meetings are a crucial aspect of collaboration, yet effectively capturing and utilizing information from them remains a challenge. The Distributed, Fragmented Software Design Meetings project seeks to address this by studying how information is shared, captured, and retrieved during software development meetings. As part of this initiative, we developed *Recap*, a tool designed to enhance the accessibility of meeting data collected using *Knocap*, an existing meeting capture system. *Recap* enables users to browse and search meeting information efficiently through intuitive sorting filters and tagging features. Building on existing user stories, we designed *Recap* to prioritize key functionalities while introducing new features to improve usability. During the process, we encountered challenges like redundancy in data collection and feature overlap, which we resolved through careful design refinements. Moving forward, usability studies will assess how well *Recap* supports real-world tasks, guiding further improvements to make meetings more efficient and effective.

P20 Historical Memory through Ghosts in *Désirée Congo* and *Beloved*

Student Researcher: Ella Kramer '26
Major: Sociology; French and Francophone Studies
Faculty Collaborator: Alistaire Tallent, French

Evelyne Trouillot's, *Désirée Congo*, juxtaposes the historical experience of the Haitian Revolution with the spectral presence of ghosts, uncovering new ways of understanding the legacies of slavery. Toni Morrison's *Beloved* draws upon Trouillot's foundation wherein ghosts function as reminders of trauma and as carriers of knowledge that traditional archives could not preserve. In both works, ghosts embody the "in-between" space theorized by Black-feminist and social and cultural constructionist scholars. In this paradigm and shaped by circumstance, youth are simultaneously denied childhood and prematurely adultified. Trouillot's novel resists Western frameworks of metaphorically exorcising ghosts, instead preserving their presence as testimony to the ongoing consequences of slavery. Reading *Désirée Congo* alongside *Beloved* illustrates how postcolonial fiction conveys both the anxieties and possibilities embedded in haunting, placing ghosts as vital figures in remembering those that have been silenced and resisting erasure. To support Professor Alistaire Tallent's research, I synthesized existing literature, identifying theoretical frameworks that speak to both novels. In assembling a diverse dataset to serve as a foundation for analyzing the connection between these two texts, I focused on scholarship emphasizing representations of haunting, demonstrating how ghostly figures embody cultural memory and reveal the psychological, interpersonal, and historical effects of slavery.

P21 Pacific Walker Circulation responses to an AMOC slow down: A mechanistic investigation

Student Researcher: Kiana Marckx ’26
Major: Environmental Science
Faculty Collaborator: Allison Lawman, Environmental Science

Heinrich Stadial 1 (HS1; 17-15 thousand years ago) was a significant interval during the last deglaciation characterized by increased meltwater fluxes to the North Atlantic. Previous research demonstrates that the subsequent decrease in salinity triggered a slowdown of the Atlantic Meridional Overturning Circulation (AMOC) and a cooling of the high-latitude North Atlantic, but the climate responses in remote regions such as the tropical Pacific remain uncertain. This includes the response of the Pacific Walker Circulation (PWC) – the large-scale atmospheric circulation pattern in the equatorial Pacific that influences climate worldwide. To investigate how the PWC changes in response to AMOC weakening, here we use climate model simulations from the Community Earth System Model iTraCE project (CESM1-iTraCE) designed to simulate the climate during HS1. We investigate annual and seasonal mean changes across the tropical Pacific, including sea surface temperature, precipitation, 10m winds, sea level pressure, and vertical winds. We identify a southward shift of the tropical rain belt in the eastern Pacific and a weakening of the PWC in the simulation with AMOC weakening. Further analysis reveals that these changes are mechanistically linked to coupled ocean-atmosphere interactions between the North Atlantic and eastern Pacific across the Panama Isthmus. Understanding the drivers of these remote climate responses is critical for projecting and preparing for a changing climate because changes in both location and intensity of tropical precipitation caused by a weakened PWC pose significant threats to the agriculture and infrastructure that billions of people residing in the tropics depend on.

P22 Predicting UEFA Champions League Match Outcomes Using Domestic League Performance Data & Multinomial Logistic Regression Acknowledging the Experiences of Volunteer Kenyan Soldiers

Student Researcher: Ivan Morales ’26
Major: Mathematics
Faculty Collaborator: Minho Kim, Mathematics

This project develops a statistical framework to analyze and predict match outcomes in the 2023/24 UEFA Champions League using team-level statistics from the previous domestic season. By applying multinomial logistic regression, match results are modeled as categorical outcomes using variables from performance metrics such as shooting, passing, defensive, possession, and league strength statistics. The regression coefficients provide insights into how different aspects of team performance contribute to competitive advantage, providing underlying interpretations about a game. Building on each match outcome, the framework extends to a group stage by simulating outcomes across fixtures. The group stage result was predicted by aggregating points for each team depending on whether they won, tied, or lost. In addition to producing predictions, this model highlights the uncertainty inherent in categorical events by assigning probability distributions to each possible result. This approach underscores how statistical modeling can bridge descriptive performance data and predictive outcomes. More broadly, the framework demonstrates how multinomial logistic regression, and a combination of variables and data, can inform the outcome of a structured tournament.

P23 The Impact of PFAS on Educational Outcomes: Evidence from the Midwest

Student Researchers: Christine Byen ’27; Abdulqaadir Ahmed ’27
Majors: Economics; Economics
Faculty Collaborators: Michelin Wilson, Business and Economics

This study investigates the impact of PFAS contamination on educational outcomes in the Midwest, focusing on public elementary and middle schools in Michigan and Wisconsin. PFAS (per- and polyfluoroalkyl substances) are persistent chemicals increasingly detected in surface water sources that supply drinking water. While the health risks of PFAS are well known, their potential effects on student academic performance remain unclear. Motivated by recent evidence from Italy (Facchinello, 2024), which linked PFAS exposure to declines in standardized test scores, we map PFAS-contaminated surface water sites and identify nearby schools at potential risk. Although we do not directly measure educational outcomes, this analysis highlights areas where students may be exposed, providing a foundation for future research on the environmental determinants of academic achievement in the Midwest.

P24 Simulating Solvated Electron Concentrations in Pure Water for Pulsed and Steady-State Atmospheric Pressure Plasmas

Student Researcher: William B. Anderson ’26
Major: Physics
Faculty Collaborator: Adam D. Light, Physics

Solvated electrons produced by atmospheric pressure plasmas are a promising area of research for breaking down per- and poly-fluoroalkyl substances (PFAS) in water. Using a python program to numerically solve the reaction-diffusion equation, we conducted simulations predicting solvated electron concentration versus depth as a function of current density for pin-liquid discharges in nanosecond-pulsed and steady-state regimes. For steady discharges, we predict that the integral of concentration with respect to depth, a parameter proportional to the signal from a total internal reflection absorption spectroscopy (TIRAS) apparatus [1], scales with the one-third power of current density. For pulsed discharges, we predict a transition from a nearly linear scaling domain to a one-third power scaling domain as current density increases, with an inflection point at current density $j \approx 10^5$ A/m2. While these scaling relationships fit previous analytical predictions and measurements, our estimated signal is larger in all cases, ~4 times larger for $j = 10^4$ A/m2 [2]. We present these results and our progress on TIRAS measurements for both cases as the next steps toward resolving this discrepancy. [1] Rumbach et al 2015 Nat. Commun. 6 7248 [2] Martin et al 2021 Plasma Sources Sci. Technol. 30 03LT01

P25 Spiritual Ecology: From the Individual to the International

Student Researcher: Riss Banuelos ’26
Major: Anthropology
Faculty Collaborator: Sarah Hautzinger, **Anthropology**

This ethnography employs an ecological approach to analyze faith-based efforts to climate solutions. This approach includes multi-scalar analysis and recognition that perception, Nature, the political, economic, and social are interconnected, interrelated, and interdependent. I primarily draw on fieldwork at Bonn SB62, the 10-day annual inter-sessional meeting of the larger Conference of the Parties (COP). I focused on the members of the Interfaith Liaison Committee (ILC) of the UN Framework Convention on Climate Change (UNFCCC). I drew on 9 semi-structured and informal interviews and participant observations, complemented by secondary sources, and analyzed them through NVivo. My analysis runs along 3 axes: the subtle (energy and prayer), local, and international efforts particularly via climate policy within UNFCCC. Through this analysis, I explore the tensions between “transformation”—the creation of new ways of being– and “complicity”—the persistent entanglement within ideological and material systems driving climate change at each locale. Findings highlight transformation in motion and the limitations of faith-based activism and advocacy. Constraints include the influence of the dominant social-material order in which efforts are embedded. Included are norms that lead to the secularization and dilution of original intent as efforts move from the particular to the vast.

P26 LasdeAbiayala: Legacies, Networks, and Territories of Black and Indigenous Women

Student Researcher: Jimena Benavente ’28
Major: Sociology
Faculty Collaborators: Jessica Sánchez Flores, Spanish & Portuguese

LasdeAbiayala is a scholarly digital project with the aim to shed light and amplify the work of Black and Indigenous women across Abiayala (also known as the Americas). This work is an effort to celebrate and cement their contributions as activists, artivists, and intellectuals. My specific research and work aimed at organizing, confirming, and investigating these women to later be able to log them into an open-access, interactive map, and geo-database that can emphasize their diverse practices and knowledge. I utilized decolonized methods, various different sources, and languages to read and understand these women and their contributions to not only their community but the world as a whole. After gathering various lengths of information, I was able to organize what I could find and the most important information that would be helpful in identifying them, their work, and solidifying their presence within the historical texts of impactful Black and Indigenous women. This allowed to further lengthen that list of women and ensure they have a presence in not only the academic historical world but also in everyday life.

P27 Measuring Concentration of Solvated Electrons in Liquid Ammonia Generated using Atmospheric-Pressure Plasma

Student Researcher: Andrew Biesiada ’26
Major: Physics
Faculty Collaborator: Adam D. Light, Physics
Research Collaborator: Haley Goetting

The interactions of solvated electrons at the plasma/liquid interface is not yet well-understood, but is an important area of many atmospheric-pressure plasma applications. Solvated electrons have a broad absorption band that provides an avenue to measure their concentration in solvents, but the signal read from one plasma pulse is typically negligible. Solvated electrons in water last only a few microseconds, however in anhydrous liquid ammonia this lifetime extends up to days. Due to this long lifetime, a cumulative signal can be detected as electrons are injected over time, even if the amount of electrons injected by each pulse of plasma is too small to measure individually. We use a source capable of generating repeating nanosecond-length high-voltage pulses to inject current into a liquid ammonia anode, and measure absorbance as a function of time using a 1550nm laser source. We present our experimental setup and preliminary measurements of solvated electron concentration.

P28 *Liatris punctata* Physiological Response to 3-methyl-2(5H)-furanone and 2(5H)-furanone Mimicking low-grade Fire Resistance

Student Researcher: Joshua Briley ’28
Major: Undeclared
Faculty Collaborator: Shane Heschel, Organismal Biology and Ecology

Liatris punctata (Asteraceae), a specific fire-resistant aster that is native to North America, Canada, and parts of northern Mexico, resides in ecosystems that are in danger of wildfires such as, the Colorado high montane, and the California chaparral. The establishment of this aster in stressful conditions has not been researched extensively. Despite this, *Liatris punctata* is needed for endangered butterfly species such as the skipper butterfly. In previous research, there was a relationship between butenolides (compounds in smoke and ash) and gibberellin (GA) which fostered a germination pathway promoting growth. In this study, we aim to measure germination frequency, biomass, and chlorophyll concentration in California-sourced *Liatris punctata* seeds to gather a better understanding of the establishment dynamics of plants in fire-prone systems. We asked the following questions: 1) How do heat-treated (70C) *Liatris punctata* seeds physiologically respond to butenolides? 2) What are the ideal concentrations and types of butenolide needed to promote germination?

P29 Large-Scale Cold Plasma Source Design

Student Researcher: Ethan Bost ’26
Major: Physics
Faculty Collaborator: Adam D. Light, Physics
Research Collaborator: Luisa DiGiano

Cold Plasma treatment of surfaces has a wide array of applications in fields such as materials science and biomedical engineering, among others. A common limitation of atmospheric pressure cold plasma jets is the size of the treated region, which can limit uniformity and scalability of treatment for both characterization and applications. This is a challenge that previous studies have sought to address. We have developed a novel plasma jet design that functions by distributing gas throughout a very thin manifold separating a high-voltage and ground electrode. The ground electrode is a tight metal mesh that allows for the generated plasma to diffuse through it from the potential gap to the sample. This design enables the generation of uniform plasma across an eight-centimeter-diameter circular region, offering a simple and affordable option for large-scale uniform plasma treatment with a wide array of potential applications. We present the design and initial investigation into the function of the new source.

P30 Teaching Physics Through a Human Motion Lens

Student Researcher: William Brice ’26
Major: Mathematics
Faculty Collaborator: Kristine Lang, Physics
Research Collaborators: Huck Whittemore; Hugo Florentino-Avila

Walking is an everyday activity that can be simplified to a basic physics concept- pendulum motion. Previous research on walking has found relationships between energy expenditure and speed, surface, and height, as well as broken down the structure of a stride. In this project I worked on a textbook on the physics of life, which uses physics to explain subjects like hearing, medicine, infectious diseases, and human motion. I worked to finish the chapter on walking. As well as conducting literature review to verify the accuracy of the book, I wrote over 20 problems testing students on a range of physics and problem solving skills as well as concepts presented in the chapter. While writing these problems, I focused on making interesting questions that are relatable to their experiences and have them think deeply about an activity they do everyday. The work I did was used in a class at Colorado College for incoming freshmen for the 2025-26 school year.

P31 Role of Awp11 and IgA in *Candida glabrata* Colonization of the Intestinal Tract

Student Researcher: Charlotte Brown ’26
Major: Biochemistry
Faculty Collaborator: Kyla Ost, PhD, University of Colorado Anschutz Medical School

Candida glabrata is an opportunistic fungal pathogen known to colonize the mucous membranes of the human body, including the intestinal tract. Immunoglobulin A (IgA) is a secreted immune molecule that serves to protect against microbial invasion and infection in the intestines. In the gut, it is predicted that Adhesion-like wall protein 11 (Awp11), a cell surface adhesion expressed by *C. glabrata*, is the dominant target of IgA. We investigated the role of Awp11 on *C. glabrata* intestinal colonization using competitive colonization experiments. In the competitive colonization model, B6 mice were colonized with a 1:1 ratio of Awp11 expressing *C. glabrata* and a mutant strain that didn’t express Awp11. We found that, mice showed no significant difference in colonization levels of either strain after 21 days. However, when repeated under the same conditions in the absence of antibiotics, the Awp11 expressing strain massively outcompeted the Awp11 mutant strain, with significant differences appearing as early as one day. The clinical *C. glabrata* isolate known as Cg27 induces high levels of IgA in the gut compared to WT *C. glabrata* and other isolates. Further investigation revealed that Awp11 is enriched in Cg27. After a 21-day colonization with *C. glabrata*, stool wash incubated with Cg27 induced a *C. glabrata*-specific IgA response, but the Cg27 Awp11 mutant and CBS138 strain failed to induce a specific response. These findings demonstrate an important role for *C. glabrata* Awp11 in IgA induction to *C. glabrata* colonization and persistence with bacteria in the gut.

P32 Gone with the Wind: Mapping Outflowing Gas in the LMC

Student Researcher: Sabra Catalano ’26
Major: Astrophysics
Faculty Collaborator: Dhanesh Krishnarao, Physics

Understanding galactic winds is essential for interpreting the evolution of their host galaxies, including star formation rates, stellar masses, metal enrichment, and other observable characteristics. Yet, because these winds can be driven by a variety of mechanisms, resolving these winds and observationally identifying their components and sources remains challenging. The Large Magellanic Cloud (LMC), a satellite galaxy of the Milky Way, is an ideal target thanks to its close distance, nearly face-on orientation, and abundance of multi-wavelength observations. Previously, during the summer of 2024, we analyzed data from the ULYSSES survey from the Hubble Space Telescope’s STIS instrument to measure OI and SiII absorption features tracing cool gas in the LMC’s winds. Using VoigtFit to model the sightlines, we derived velocities, column densities, and widths, producing preliminary maps that compare outflowing gas with the LMC disk to test for correlations with active star formation. We are now trying to get a global picture and see where these winds are located. With this we will be able to model absorption features from other metals in the gas, in order to understand the correlation between gas outflow and star formation in the LMC.

P33 Music and the Museum: Vienna

Student Researcher: Alia Dahleez ’28
Major: Undeclared
Faculty Collaborator: Lidia Chang, Music
Research Collaborator: Dr. Sebastian Kirsch (Kunsthistorisches Museum)

Vienna, Austria’s capital, has long been known as the “Stadt der Musik” –the “City of music.” This exploratory research project examined the historiography of Vienna’s musical reputation through various representations of music in museums and cultural heritage sites. In preparation for Prof. Lidia Chang’s Block 6 abroad, “Music and the Museum: Vienna” we studied the different narratives of Western Art where music is presented by collections of musical instruments, visual art, and objects. Although the medium in which music is represented differs across museums, we found thematic connections among all institutions – allegorical themes, connections to nobility, emancipation from nobility, and three-dimensionality. Our findings are made available in an online museum guide that will support future students with their coursework for Prof. Chang’s class. This work resulted in a myriad of pedagogical approaches for engaging students in a deep study of material culture, organology, musical iconography, and the digital humanities.

P34 SUP-26 and cytoskeletal mRNA regulation in *C. elegans* neuron morphology

Student Researcher: Audrey Combs ’26; Lucio Bollettieri ’26
Majors: Molecular Biology**;** Molecular Biology
Faculty Collaborator: Darrell Killian, Molecular Biology

Dendrites are complex neuronal structures critical for receiving signals, and defects in dendrite branching are linked to neurological disorders. The PVD neuron in *C. elegans* is an excellent model for a genetic investigation of dendrite branching—PVD neurons have a complex morphology and *C. elegans* is amenable to genetic manipulation and live imaging. Previous work identified the RNA-binding protein, SUP-26, as important for PVD dendrite morphology (Antonacci et al., 2015; Schachtner et al., 2015; Olesnicky et al., 2018). Biochemical analyses revealed that SUP-26 binds primarily to the 3’ UTR of mRNAs and interacts with the Poly(A)-binding protein, suggesting a potential role in translational regulation (McJunkin and Ambros et al., 2017; Olesnicky et al., 2018). We found that ~20 of the SUP-26 target mRNAs encode cytoskeletal proteins, the regulation of which could impact dendrite morphology. Six of these genes (*erm-1, frm-4, spc-1, unc-60, unc-70,* and *unc-115*) were selected to study. We sought to determine (1) if SUP-26 regulates the translation of these target genes; (2) the subcellular localization of these cytoskeletal proteins; (3) if SUP-26 functions with cytoskeletal genes to impact dendrite development. To this end, we created transgenes that express a fluorescent protein (GFP) with a 3’ UTR of each target gene to compare the change in expression with and without *sup-26*. We are expressing cytoskeletal proteins with a GFP tag to evaluate their subcellular localization. Finally, we generated double mutant worms carrying a loss of function mutation in *sup-26* and in each of the target genes. These worms also contain a fluorescent marker in the PVD neuron allowing comparison of dendrite morphology across different strains.

P35 Thermodynamic Examination of miR-184 Binding in Calcium and Magnesium Ions

Student Researcher: Torah Delaney ’26
Major: Biochemistry
Faculty Collaborator: Neena Grover, Chemistry and Biochemistry
Research Collaborator: Dr. Kehinde Ross

MicroRNAs (miRNA) are non-coding sequences of RNA that regulate genes. miRNA-184 is a microRNA that is linked to cancer suppression and regulation. Calcium has been shown to affect the induction of miR-184. It is hypothesized that miR-184's structure and function in skin cancer is linked to calcium-dependent pathways. The purpose of this project is to investigate the thermodynamics of miRNA-184 binding to its target mRNA and to those with mutations. Isothermal Titration Calorimetry (ITC), Circular Dichroism (CD), and thermal denaturation experiments were performed to examine miR-184 stability in the presence of either magnesium or calcium ions and in two different pHs. DNA and RNA constructs were derived from canonical interactions to miR-184. CD experiments on DNA constructs form a B-form duplex. Thermal and calorimetric data showed minimal difference when duplex structures form. In DNA and RNA containing mutations, different ionic conditions show difference in thermodynamic stability. ITC, CD, and thermal denaturation data with different RNA and DNA constructs is being compared to better understand the role of miR-184 in cancer.

P36 Determining The Modified Region of Cold Plasma Treated Adhesive using Contact Angle

Student Researcher: Luisa DiGiano ’27
Major: Physics
Faculty Collaborator: Adam D. Light, Physics
Research Collaborator: Ethan Bost

A key challenge of surface modification of polymers with atmospheric pressure cold plasma is understanding the size of the modified region due to the lack of visual change in the surface. This experiment aimed to gain a better understanding of the modified region of a pressure sensitive acrylic adhesive after being treated with a 2 mm atmospheric pressure cold helium plasma jet a few mm above the surface. Data was collected using contact angle measurements. A ‘contact angle map’ was created by taking measurements of equally spaced water drops placed in a line on the substrate. Size and uniformity of the treated region were evaluated through changes in contact angle along this line. In addition universal pH indicator paper was used to map the affected region, showing a region of high pH on the order of several square cm around where the jet makes contact with the paper. This matched our ‘contact angle map’ where the contact angle dropped significantly over areas on the order of several square cm. To characterize the modified region in detail we are currently pursuing more selective techniques, such as x-ray photoelectron spectroscopy, Fourier transform infrared spectroscopy, and Raman spectroscopy. We will describe our methodology and preliminary results.

P37 Comparing Structure and Ion Binding in G-QuadruplexesStudent

Researcher: Abby Duke-Moe ’26
Major: Biochemistry
Faculty Collaborator: Neena Grover, Chemistry and Biochemistry

G-quadruplexes are structures that were originally identified at the end of chromosomes to prevent unraveling of DNA. These structures are formed when guanine bases from one or multiple strands of nucleic acids come together by binding to alkali ions. Recently, DNA G-quadruplexes have been identified in promoter sequences and are implicated in control of gene expression. Regulation of gene expression of particular oncogenes is a promising therapeutic target for anti-cancer medications. Telomeric G-quadruplexes have been well characterized. However, there is a significant gap in data relating to non-telomeric G-quadruplexes. The aim of this study is to further the understanding of G-quadruplexes by examining the energetics of potassium binding to a promoter sequence through CD and ITC experiments and comparing it to results from telomere, Tel22. Further physiologically relevant ions, such as calcium, sodium, and magnesium, will be tested to compare the differences in stability and favorability between monovalent and divalent cations.

P38 Potential mechanisms regulating variability in *Drosophila* and comparison in behavioral variability among *Drosophila* species

Student Researchers: Tor Evenstad ’26; Katie Craven ’26; Emily Silva ’26; Elise Evans ’26
Majors: Neuroscience; Neuroscience; Neuroscience; Neuroscience
Faculty Collaborator: Ryan Maloney, Neuroscience

Animals exhibit individuality in their behavior, even without an inherently genetic or environmental basis. These differences in behavior have been previously shown to be regulated by serotonin. However, it is not yet known which serotonin receptors are most directly impacting variability. We compared control *Drosophila melanogaster* with serotonin-deficient mutant *D. melanogaster* for each of the five *Drosophila* serotonin receptors. We measured handedness in a Y-maze assay over the course of two hours for a three-day period, and found that receptor knockouts 5HT1A, 5HT1B, 5HT2B, and 5HT7 show decreased consistency in individual preference over time. To test if differences in within-population individuality differ between species, we also observed 11 different species of *Drosophila* to see if there was variation in their behavioral preference over time. We observed differences between species and species from different environments. These findings provide insight into the potential mechanisms driving individuality and its regulation. These findings also allow for a further understanding of how animals use variability in their behavior to maximize survival in unfamiliar environments.

P39 Exploring LVM for Faint Signatures of the Warm Ionized Medium

Student Researcher: Ethan Driscoll ’27
Major: Physics
Faculty Collaborator: Dhanesh Krishnarao, Physics

Diffuse Ionized Gas (DIG), often referred to as the Warm Interstellar Medium (WIM) makes up a substantial part of the Interstellar Medium. Using data from the Local Volume Mapper (LVM), we plotted low-intensity flux ratios for various common gases, including [OIII]λ5007/[Hα]λ6563, [SII]λ6717/[Hα]λ6563 and [NII]λ6583/[Hα]λ6563 versus tan(b). Low-intensity flux values were selected to avoid inclusion of other interstellar features such as stars or supernovae which would produce these gases at high intensities. Ratio plots were constructed to help evaluate physical conditions in regions of space. Ultimately, while plotting tools were designed to handle this data moving forward, LVM data needs to be further refined to better prepare it for use in ratio diagramming. As such, no substantial correlation was found between graphs made from VTSS, SHASSA and WHAM data, and similar graphs made from LVM data. Work will continue to refine plotting techniques used to handle LVM data moving forward.

P40 Effects Of Reidemeister moves on trip matrices

Student Researcher: Christian Figueroa ’27
Major: Mathematics
Faculty Collaborator: Molly Moran, Mathematics

A knot is a closed loop in space that may be twisted or tangled but cannot be cut or passed through itself. Knot theory is the study of these loops and how to determine whether two knots are the same or different. To do this, mathematicians use *invariants*—properties of knots that remain unchanged under certain transformations, such as changes in the knot’s projection. One of the most widely known invariants is the Jones polynomial, introduced by Vaughan Jones while studying braid groups and operator algebras in physics. In 1993, L. Zulli proposed an efficient and elegant method for computing the Jones polynomial by first constructing a symmetric matrix called the trip matrix. This matrix encodes information about the knot diagram and simplifies the computation process. The focus of this research was to explore and understand how the trip matrix changes in response to Reidemeister moves, a series of transformations that preserve knot invariants but alter their projections.

P41 The Cycling Power Equation and Aerodynamic Considerations for Cycling

Student Researcher: Robert Whittemore ’26
Major: Physics
Faculty Collaborator: Kristine Lang, Physics

Aerodynamics drag is the primary resistive force that determines the speed at which a cyclist can ride. The aerodynamic term dominates the cycling power equation, which calculates the amount of mechanical power a cyclist must transfer through the pedals to maintain a given speed. Due to the importance of aerodynamic optimization to performance gains, minimizing drag by changing body position, using specialized gear, and drafting has been studied extensively. This established research was used to create basic computational physics problems aimed at entry-level and intermediate college physics courses. Selected problems are presented to summarize the main research focuses; drafting in the professional cycling peloton, aerodynamic clothing and bicycle design, and drag variation based on altitude. Additional problems covered rolling resistance, the other resistive force that contributes to the power equation, focusing on cycling on soft surfaces and the energy required to ride off road. Finally, all of these concepts were combined in a long form problem calculating the total energy expenditure of a cyclist on a simulated grand tour cycling stage.

P42 Quantification of Plasma-Generated Hydroxyl Radicals and Amino Acid Oxidation in Aqueous Environments Using Helium Cold Atmospheric Plasma

Student Researcher: Haley Goetting ’26
Major: Biochemistry
Faculty Collaborators: Neena Grover, Chemistry and Biochemistry; Adam D. Light, Physics

Cold atmospheric pressure plasma (CAP) is being increasingly explored for biomedical applications, yet fundamental aqueous-phase chemistry underlying plasma–biomolecule interactions remains poorly understood. We present progress toward characterizing degradation pathways of nine amino acids, supporting a mechanistic framework for understanding plasma–biomolecule interactions in aqueous systems and contributing to ongoing research for applications in plasma medicine, protein modification, and radical aqueous chemistry. A combined method of chemical dosimetry and mass spectrometric investigation elucidates hydroxyl radical (•OH) generation and free amino acid oxidation during helium CAP treatment of aqueous solutions under inert atmospheric conditions. Terephthalic acid (TA) is used as a selective chemical probe to quantify •OH production by monitoring the fluorescent formation of 2-hydroxyterephthalic acid (HTA) across varying treatment times in phosphate buffer at neutral pH. HTA fluorescence enabled estimation of •OH generation rate below the micromolar range ($\sim 10^{-7}$ M/s), revealing a pseudo-first order kinetic profile. In tandem, liquid chromatography–mass spectrometry (LC-MS) was employed to characterize chemical modifications of amino acids treated under identical plasma conditions with and without TA present.

P43 The Relationship Between Political Affiliation and Outdoor Space Use: A Comprehensive Study of Colorado Springs

Student Researchers: Annabel Meyer’26; Libby Cutler ’26
Majors: International Political Economy; Environmental Studies
Faculty Collaborator: Cyndy Hines, State of the Rockies Project

Despite public lands usage being a typically bipartisan activity, in recent months the current administration has made strides towards selling public lands, unprotecting national parks, and selling crucial natural resources. According to Ziegler et al., political orientation in the USA is by far the most relevant factor in general climate change beliefs. This study explores the relationship between political affiliation and outdoor spaces usage in Colorado Springs. The research aims to uncover how the city’s political culture shapes its approach to managing and using public spaces. Our methodology includes a policy analysis of municipal proposals, a literature review investigating a correlation of information on political orientation and outdoor space use in the United States, ArcGIS mapping technology, as well as in-person surveys given at eight separate public parks in Colorado Springs. These parks included the incline, Palmer Park, Garden of the Gods, Ute Valley Park, Bear Creek Park, Seven Bridges, and North Cheyenne Canyon Park. Using this interdisciplinary approach seeks to explore the relationship between conservative governance and environmental urban planning, providing insights into how political ideology affects ecological and social outcomes in public space management. Survey data revealed that while many residents cited access to public lands and green space as a major reason for living in Colorado Springs, they simultaneously expressed support for urban development and predominantly identified as Republican. This pattern illustrates the tensions between valuing access to natural spaces and supporting policies that favor urban development. Research from the study hopes to highlight the paradox of Colorado Springs residents seeking to preserve the very qualities that draw them to the city while endorsing growth that may undermine them. Our study points to the need for a more nuanced understanding of how political culture influences the stewardship of public lands in rapidly developing cities.

P44 grasshoppers? also good jumpers

Student Researcher: Hugo Florentino-Avila ’27
Major: Physics
Faculty Collaborator: Kristine Lang, Physics
Research Collaborator: William Brice, Huck Whittemore

Textbook problems are an important part of engaging with the material that is presented in a class or independently, and they are the main way that teachers and professors test their students’ understanding of the material. The problem must be reasonably solvable within what has been taught in the class or present in the textbook. Our assignment then is to write problems that test the students’ ability to use what they have learned and apply them while making sure the assignments are within their range of abilities. The textbook that we have written problems for is on biophysics, aimed at undergraduate first years with limited physics knowledge. By reviewing research articles and existing data, cross referencing, double-checking, and working out details, we have designed practice problems in real world contexts that can be solved using the knowledge provided by this textbook. By writing these problems, we hope to not only test the students’ ability to solve problems but also make introductory physics less abstract and more useful in applications. In this poster, I will focus on the writing process of a problem involving desert locust jumping and usability in this textbook.

P45 *U-Pb Geochronology of Rodingite Minerals Records Permian Supra-Subduction in Whakatū/Nelson, Aotearoa/New Zealand*

Student Researcher: Jake Hams ’26
Major: Geology
Faculty Collaborator: Michelle Gevedon, Geology
Research Collaborators: Charlie Hite ’25, Jesus Lara Rivas ’25, David Mims ’25, Claudiu Nistor[1], Jamie D. Barnes[1], Lisa Danielle Stockli[1], Daniel Stockli[1], Besim Dragovic[2], Nandana Goswami[2], Aaron Satkoski[1]
[1]Department of Earth and Planetary Sciences, University of Texas at Austin, Austin, TX, USA
[2]School of the Earth, Ocean & Environment, University of South Carolina, Columbia, SC, USA

The timing and geochemical composition of rocks called rodingites, collected from the Dun Mountain Ophiolite (DMO) in the Whakatū/Nelson region of Aotearoa/New Zealand, may provide insight into the changing Gondwana-Panthalassa supercontinental margin and into widespread hydrothermal alteration processes of the ocean crust. Oceanic crust is generally inaccessible for study, however, ophiolites (i.e. ocean crust that has been emplaced on land) allows for study of processes that form and change the seafloor. The DMO and related Patuki and Croisilles tectonic mélanges are hypothesized to record a Permian (300-250 Ma) intraoceanic near-continent supra-subduction zone. The DMO and mélange units are established to be the same age, but little is known about their spatial relationship. If these geologic units were altered by the same types of fluids, at the same time, then a spatial-temporal relationship can be established. This project focuses on rodingite minerals garnet and titanite to establish 1) the timing of their formation during ocean crust alteration as revealed by in-situ U-Pb geochronology and 2) the conditions of their formation via geochemical compositions. Our data adds to the known DMO tectonic framework by establishing a relationship between the Patuki and Croisilles mélanges and the DMO.

P46 Children and Court-Ordered Therapy

Student Researcher: Odirichi Igwe ’27
Major: Sociology
Faculty Collaborator: Gail Murphy-Geiss, Sociology
Research Collaborator: Office of Guardian ad Litem

When children are involved in dependency and neglect cases or face juvenile delinquency charges, the court often requires that they meet with a qualified mental health professional for treatment and support. The Guardian ad Litem (GAL) office typically oversees this process, coordinating services and matching children with therapists. Despite the common use of court-ordered therapy, little is known about how children themselves experience it. This study examines how children’s experiences of court-mandated therapy are shaped in El Paso County, Colorado. In partnership with the social workers at the GAL office, we collected survey data on demographics, case type, therapy type, therapist licensure, and children’s evaluations of therapy. Surveys included questions on enjoyment, honesty, perceived helpfulness, frequency, and willingness to continue therapy. The data were analyzed using Mann-Whitney U and Kruskal-Wallis to compare any differences between groups. In addition, chi square tests were used to test for correlations between the children’s demographics and certain aspects of their care. Though the initial hypothesis focused on therapist licensure, results showed that that age, therapy type, and stability of therapist assignment were strongly associated with children’s enjoyment and willingness to return to therapy, while gender and race influenced honesty with therapists and perceptions of helpfulness.

P47 From Magnetic to Paramagnetic; Finding Phase Transitions

Student Researcher: Axel Klomparens ’26
Major: Computational Physics
Faculty Collaborator: Computational Physics, Physics

Magnets are widely known and used in a broad variety of applications for everyday life. They are likely more common than you think. They also serve as a fun object to play with and study. One interesting feature of a ferromagnet is that once it’s heated past a certain temperature it enters a paramagnetic phase, where it loses its magnetization. This transition point can be found through a standard, well-known procedure with a computer simulation. Our goal was to locate this transition point with an alternative method. To complete these steps, we built a simple computational model of a ferromagnet. After the model was built we ensured that the model was designed and written correctly and that it properly acted as a magnet. The next phase involved working with the magnetic susceptibility of the system, which also helps inform us where the phase transition point is. However, this is not the only transition point that can be found. If the temperature of the magnet is held steady and you adjust the strength of the magnetization, then the magnet will also lose its magnetization once the strength of magnetization is weak enough. Once this value was found the final stage of the project was upon us, we used the alternative method to try and figure out if this method would give us the same value for the transition point. We were successful in finding this value across several different sizes of the model.

P48 "Functional with a Smattering of Fun": Accessible Makerspaces as Vocational Pathways and Community Resources

Student Researcher: Axel Klomparens ’26; Zahara Love ’26; Parthib Paul ’28
Majors: Computer Science and Business Economics and Society; Computer Science; Undeclared
Faculty Collaborator: Varsha Koushik, Mathematics and Computer Science

Makerspaces are increasingly being used to create Do-It-Yourself (DIY) assistive technology and can be good locations for learning vocational skills. However, these makerspaces are often inaccessible to people with disabilities. To explore the accessibility challenges in makerspaces and demonstrate how they can be overcome to create community engagement and vocational pathways, we conducted contextual inquiry and semi-structured interviews at four accessible makerspace sites serving young adults with disabilities. These makerspaces are part of two programs designed to help the young adults build vocational skills and empower them to create assistive technology for themselves and their communities.

P49 QuScope: Quantum Computing Meets Electron Microscopy

Student Researcher: Parthib Paul ’28
Majors: Physics and Chemistry
Research Collaborator: Roberto dos Reis, Northwestern University

Advances in quantum computing have opened frontiers in microscopy and microanalysis, offering powerful tools for analyzing complex materials at the nanoscale. We introduce QuScope, an open-source Python package that integrates quantum computing algorithms with classical techniques for electron microscopy analysis and simulation. The package addresses fundamental challenges across multiple domains of electron microscopy analysis to support experimental workflows, currently including transmission electron microscopy (TEM) image denoising and electron energy loss spectroscopy (EELS) analysis. On the simulation front, it implements both quantum-enhanced weak phase object and multislice models for bright-field CTEM imaging of thin and thick specimens. We demonstrate improved signal recovery, segmentation accuracy, interpretability across electron microscopy and EELS datasets, and more efficient simulations. QuScope is being extended to simulate and analyze electron diffraction patterns, and utilize quantum machine learning to further reduce computational overhead for complex data analysis and increase feature detection. QuScope is available at github.com/QuScope/QuScope.

P50 Developmental Synthesis of Fluorinated Amodiaquine Analo

Student Researchers: Chung Douglas Leung ’27
Major: Chemistry
Faculty Collaborators: Habiba Vaghoo, Chemistry and Biochemistry

Recent data suggests that the fluorination of drugs offers significant benefits including improved drug efficacy, increased efficacy and enhanced metabolic stability. Fluorinated amodiaquine analogs offer a possible alternative antimalarial option to combat drug resistance. This study focuses on the developing synthesis of “CF_2H” analogs of amodiaquine, beginning with the manipulation of ortho-para nitrobenzene starting materials, followed by the addition of the Mannich sidechain component. The methodology encompasses a multi-step synthesis process that includes the reduction of nitrobenzene, succeeded by a nucleophilic substitution reaction (S_NAr). Furthermore, a multicomponent synthesis approach was investigated for the Mannich sidechain addition reaction. Synthesized analogs were subjected to purification and subsequent assessment of purity through column chromatography, nuclear magnetic resonance (NMR) spectroscopy, and liquid chromatography-mass spectrometry (LC-MS). Microwave-Assisted Organic Synthesis (MAOS) was employed to optimize product formation. One analog exhibiting 98% purity was successfully synthesized and is slated for rigorous testing to evaluate its antimalarial properties. Although the proposed synthetic routes necessitate further optimization, they have demonstrated success with specific starting materials and hold promise for the development of alternative malaria treatments.

P51 Examining modes of interaction between inhibitor and SL-1 hairpin of SARS-CoV-2

Student Researcher: Ethan Levy ’26
Major: Molecular Biology
Faculty Collaborator: Neena Grover, Chemistry and Biochemistry

Over 7 million people have died of SARS-CoV-2 since its emergence. SARS-CoV-2 is a positive sense RNA virus containing five stem loops in its 5’-UTR. Stem-loop 1 (SL-1) is critical for binding of the virus to nonstructural protein 1 (nsp1) and plays a significant part in viral replication. Our laboratory had designed an inhibitor to bind to SL-1 to prevent SL-1 from binding to nsp1. This project was aimed at examining the mode of binding between nsp-1 and DNA corresponding to SL-1. Circular dichroism (CD) shows a duplex-like signature when tested across multiple different pH, temperature, and buffer conditions such as high salt concentrations. RNA structure also predicts a stable duplex structure between the inhibitor strand and hairpin RNA. We investigated well-established triplex structures to examine signatures of triplex strand formation using CD. Using isothermal calorimetry (ITC), we determined triplex formation is typically between 24-36% in acidic and high-salt conditions. Our experiments indicate that binding of the short inhibitor strand is likely to form an alternate duplex rather than a triplex between the SL-1 hairpin and the inhibitor strand.

P52 Power, Race, and Gender in the Formation of Market Economies: Towards a Historically Considerate Introduction to Microeconomics

Student Researcher: Maxine Lewis ’26
Major: International Political Economy
Faculty Collaborator: John Gould, Political Science

This project reconsiders the foundations of how introductory microeconomics is taught. Existing pedagogical scholarship has made important strides in inclusive teaching, with attention to representation and classroom engagement for marginalized groups. Yet much of this work remains formal and survey-based, focusing on how we teach rather than interrogating what we teach or why economic theory is structured as it is. Far less attention has been paid to the historical processes of dispossession, extraction, and commodification that laid the foundations for market regulations and mechanisms. To address this gap, this project situates microeconomics within a longer intellectual and historical arc. From Adam Smith’s defense of commercial society and the “invisible hand,” to the Atlantic system of slavery, through imperialism, industrial capitalism, and neoliberal globalization, markets have always been shaped by power, coercion, and inequality. Scholars such as Karl Polanyi, Nancy Fraser, and David Harvey remind us that economics is inseparable from politics and power. Markets are embedded in social relations, where precarity is both produced and exploited - shaping choices unequally and obscuring the realities of economic life. Incorporating these perspectives into introductory teaching challenges the tendency to treat market models as natural, correct, or apolitical. What emerges is not a rejection of microeconomics, but an effort to complicate and offer an interdisciplinary approach to the introductory studies of microeconomics. This may allow students to have more thoughtful analyses and a more realistic understanding of the market’s mechanisms and impact. By critically annotating textbook principles, this project offers students a historically grounded and politically attentive introduction to economic life - one that illuminates the differentiated ways markets are experienced across social positions and cultivates a deeper understanding of the lived realities that underlie economic models.

P53 Neural Activation of Novel and Familiar Bird Song in avian auditory and sensory-motor integration regions Using Immunohistochemical Detection of Phosphorylated Ribosomes (pS6)

Student Researchers: Chris Gruschow ’26; Clara Lippert ’26
Majors: Neuroscience; Neuroscience
Faculty Collaborator: Marcela Fernandez-Peters, Psychology

Zebra finches are excellent models for cognition because they learn songs via similar mechanisms to human speech development. Previous work in this lab has researched response to novel songs by looking at activation in brain regions associated with auditory processing in zebra finches. However, the role of other regions involved in associative learning and executive control on adult song learning and memory has not been examined in detail. This summer, we examined the effect of both novel and familiar bird songs on brain activation in several regions involved in higher-level association and executive function. We divided male zebra finches into three listening groups: novel song, familiar song, and silence. Following song exposure, we extracted the brain tissue and conducted an immunohistochemical stain against pS6. PS6 is an important marker of brain activation during song-learning and memory. We visualized PS6 by double labelling with a fluorescent dye and then imaged sections at 20x magnification. Based on previous studies, we expect to find high activation from novel song in the caudomedial nidopallium (NCM), and high familiar song activation in the caudomedial mesopallium (CM). The caudolateral nidopallium (NCL) is not as well-researched, but it is a highly interconnected region involved in executive function. Preliminary results from our lab made the NCL another important area to study. The description of these patterns of activation across several regions will provide a bigger picture of brain processing of behaviorally relevant auditory signals.

P54 "Functional with a Smattering of Fun": Accessible Makerspaces as Vocational Pathways and Community Resources

Student Researcher: Raymond Atkerson ’26
Major: Computer Science
Faculty Collaborator: Varsha Koushik, Computer Science
Research Collaborator: Sam Lain, Parthib Paul

Makerspaces are increasingly being used to create Do-It-Yourself (DIY) assistive technology and can be good locations for learning vocational skills. However, they often remain inaccessible to people with disabilities, who should be the most involved in this process. To explore the accessibility challenges in makerspaces and demonstrate how they can be overcome to create community engagement and vocational pathways, we conducted contextual inquiry and semi-structured interviews at two accessible makerspaces serving young adults with disabilities. These makerspaces are part of two programs designed to help the young adults build vocational skills and empower them to create assistive technology for themselves and their communities

P55 Preshears of Rosette Harmonic Mappings

Student Researcher: Serena Nguyen ’26
Major: Computer Science
Faculty Collaborator: Jane McDougall, Mathemastics and Computer Science

This project investigates the geometry of the preshears of rosette harmonic mappings; a family of harmonic functions developed in prior work as modifications of the classical hypocycloid mapping. Each harmonic mapping is expressed in its canonical decomposition, with analytic and co-analytic parts linked by a prescribed dilatation. Using the harmonic shearing theorem, we study how conformal preshears generate harmonic shears, and we characterize the effect of rotations and phase shifts on their images. The Schwarz–Christoffel (SC) mapping framework provides the connection between roots of unity and the polygonal structure of preshears, explaining the appearance of divots, forks, and crevices along their boundaries. By analyzing the rosette family f_β, we describe how the parameter β alters symmetry patterns f_β in the preshears, as well as the effect of the parameter n which is the number of corners present in the boundary curve of f_β distinguishing even values of n (with behavior dependent on $n \bmod 4$) from odd. Building on the foundation of prior studies, we extend these results to compute explicit geometric quantities, such as the heights of boundary blocks, highlighting how preshears can be used and manipulated to uncover new minimal surfaces.

P56 “Stim-Dancing” Towards an Authentic Beat; designing a research-based movement class for neurodivergent adults

Student Researcher: Elizabeth O’Neill ’26
Majors: Sociology and Dance
Faculty Collaborator: Shawn Womack, Dance

To be an autistic adult in the modern day United States is to live in a world dictated by neurotypical norms, a world that speaks a foreign social language. The burden of translating everyday interactions and systems in order to participate weighs heavily on neurodivergent people, who are already facing a variety of other symptoms. This pressure particularly impacts adults, who are provided with significantly less support than adolescents while simultaneously facing the increased demands of adulthood. First, through a meta-analysis of existing social science literature, this research seeks to understand the social processes and experience of neurodivergent adults; what support do neurodivergent adults need in order to improve their quality of life? Second, through a meta-analysis of neuroscience literature in addition to experimenting with Bartenieff’s fundamental movements, this research inquires as to the impacts dance has on the human brain. The interdisciplinary nature of this research serves to inform the holistic creation of a movement workshop meant to improve quality of life through movement and the ways it can positively encourage improved regulation of the mind & body in addition to the construction of a positive neurodivergent identity. This class centers social justice and the prioritization of neurodivergent lives while harnessing the power of unmasking, stimming, rhythm, developmental movement patterns, and unapologetic neurodivergence.

P57 Reclaiming Our Attention: The Effects of a Nature-Based Tech-Free Camp on Counselors' Attention

Student Researchers: Gus Yar '25; Kole Petersen '27
Majors: Psychology; Psychology
Faculty Collaborator: Tomi-Ann Roberts, Psychology

The philosopher William James proposed that our life experience is determined by what we pay attention to. Although smartphones and laptops have become increasingly fundamental in our school, work, alone, and social activities, researchers are sounding the alarm about these devices' negative impact on our attention. Even the mere presence of a smartphone has been shown to inhibit people's attentional resources. Adult counselors at a nature-based camp in Colorado experienced a month without these digital devices. These individuals constituted our sample to study how time away from our digital devices may restore our attention in four key areas. Through a pre and post survey, we examined counselors' self-ratings on their connectedness to nature, interpersonal empathy, activity immersion and embodied interoception. As we enter the data to analyze results, we predict that the counselors will report restored attention in all four areas, with self-reported smartphone addiction mediating this effect.

P58 Theoretical Modeling of the Impacts of Metapopulation Dynamics on Disease Spread

Student Researchers: Éowyn Mairon Poplawski '26
Major: Biostatistics (IDM)
Faculty Collaborator: David Brown, Mathematics and Computer Science

Beginning with the pioneering work of Kermack and McKendrick in the early 1900s and continuing through the ongoing COVID-19 pandemic, epidemiologists have used mathematical models to understand and predict the spread of infectious diseases. Classic models assume a single, homogeneous, well-mixed population of susceptible individuals, with recent work investigating the effect of social network structures on the spread of diseases (Keeling 2005). Our research takes an intermediate approach to disease modeling: we examine the impact of a metapopulation model on a classic SIR model. Such an approach remains underexplored in the realm of epidemic modeling, despite being a highly relevant area in population ecology. With the rising relevance of disease models, a metapopulation model could have valuable insights for future epidemic response protocols, since individuals tend to live in a network of small communities. It may also help us understand pre-historical patterns of infectious diseases when humans lived in small groups. While analysis of our results is ongoing, our work so far suggests that this approach yields a different result than a classic SIR approach. Our model uses functions in R Studio to combine small community networks linked with occasional contact and a traditional SIR model. Citations: Kermack, W. and A. McKendrick (1929) Contributions to the mathematical theory of epidemics. Proceedings of the Royal Society 115:700-721. Keeling, M. and K. Eames (2005) Networks and epidemic models. Journal of the Royal Society Interface 2: 295-307. Keeling, M., Danon, L., Vernon, M., House, T. 2010. Individual identity and movement networks for disease metapopulations. PNAS 107: 8866-8870.

P59 Light Pollution And Infant Health: Skyglow's Impact on Birth Weight, Gestation, and NICU Admissions

Student Researcher: Ella Reese-Clauson '26
Major: International Political Economy
Faculty Collaborator: Guanyi Yang, Economics and Business
Research Collaborator: Andres Azqueta

Globally, more lights are staying on later, increasing artificial light at night (ALAN) in an uptick that increases productivity and discourages crime but is also attributed to adverse health effects in humans and animals. Amidst a growing body of research linking light pollution to general adverse health effects, scholarship on the impacts of this radiance on fetal health is insufficient. Our research seeks to bridge this gap. Through a comprehensive analysis of data encompassing environmental light levels and infant health records, we aim to shed light on the potential correlations and implications for neonatal health. We use Dark Sky Satellite data in conjunction with the National Vital Statistics System (NVSS) dataset, which is the most complete data on births in the United States. Through a combination of linear regressions and machine learning techniques, we associate increased exposure to ALAN with a lower gestational length, decreased birth weight, and increased NICU admissions, a series of fetal health impacts that we correlate with various maternal health indicators stemming, too, from heightened ALAN exposure. These findings promise to advance our understanding of environmental factors influencing infant well-being and may contribute to the development of targeted interventions for healthier early childhood development.

P60 Investigating Counter-Rotation in Low-Mass Galaxies

Student Researcher: Dominic Schwein '26
Major: Computational Physics
Faculty Collaborator: Catherine Witherspoon, Physics

Angular momentum is acquired early on during galaxy formation, so we expect that in most cases, the stellar and gaseous kinematics will be well-aligned. However, observations have shown that this is not the case in all galaxies. One possible cause of this kinematic misalignment is feedback from active galactic nuclei (AGN). We refer to this misalignment as counter-rotation and create a program that estimates the kinematic offset angle between stellar and gaseous components. We compare the kinematic offsets of 94 low-mass galaxies that are characterized by potential AGN emission to those of a broader sample of ~3000 low-mass galaxies, and ~10,000 galaxies of varied masses, with all sets of galaxies having been observed by the SDSS-IV MaNGA survey. We investigate various stellar population properties and quantities such as AGN accretion rate and star formation rate. We find that AGN galaxies counter-rotate at a much higher rate than both other samples and that co-rotating galaxies tend to have higher star formation rates. In addition we see that AGN galaxies have older stellar populations on average.

P61 Exploring rank drops of third recurrence matrices

Student Researchers: Julia Snelling ’27
Major: Mathematical Economics
Faculty Collaborator: Jane McDougall, Mathematics and Computer Science

Our work focuses on the discovery of the seed rank drops of third order recurrence matrices. Previous work has been done on the ranks of recurrence matrices, with the work on seed rank drops of second order recurrence matrices being our main inspiration. There are several ways in which rank drops can arise, including width rank drops and seed rank drops. We present a new method (or one that seems to be previously unexplored), from which we can describe seed rank drops and how they arise for order three recurrence matrices. Using the second order recurrence rank drop method and applying it to third order recurrences, we found that given a particular recurrence, relationships between chosen seed values would provide a rank drop from rank 3 to rank 2. By rewriting the terms of the recurrence sequence using their seeds, certain coefficient combinations, and row reducing, we find that there exist seeds for each unique recurrence that create a rank of 2 regardless of matrix size (greater than or the same as a 3 by 3). The implications of this research add to past papers and provide exceptions to their work regarding other characteristics of the recurrence matrix.

P62 Endangered Sovereignty: Indigenous Co-Stewardship and the Future of U.S. Public Lands

Student Researcher: Grace St. John ’26
Majors: Environmental Studies and Design Studies
Faculty Collaborator: Eric Perramond, Environmental Studies and Southwest Studies

Public lands in the United States have a complex history rooted in Indigenous dispossession and forced removal. Today, many federally managed lands are moving toward Indigenous-led co-management models, which vary widely in scope and structure. This paper identifies and categorizes over 170 co-management projects across agencies such as the National Park Service, USDA Forest Service, and Bureau of Land Management. Each project is ranked on a scale from 1 (minimal Indigenous involvement) to 5 (extensive Indigenous leadership). Despite growing momentum, Indigenous co-management faces ongoing threats from shifting federal policies that jeopardize the status and protection of public lands. This paper examines these policy threats and analyzes their intersections with co-managed areas, emphasizing the need for stronger legal frameworks to support Indigenous stewardship.

P63 Comparative Analysis of Innate Immune Responses to Abiotic Stressors Between Two *Caenorhabditis* Nematode Species

Student Researchers: Rachel Ganz ’27; Eleanor Wilson ‘26
Majors: Molecular Biology; Molecular Biology
Faculty Collaborator: Spencer Gang, Molecular Biology

Microsporidia are obligate intracellular pathogens that can infect a wide range of species, including humans. The nematode *Caenorhabditis elegans,* which is infected by *Nematocida parisii* microsporidia, is a good model organism for studying the innate immune response to microsporidia due to its small size, rapid life cycle, and extensive genetic toolkit. The Intracellular Pathogen Response (IPR) program in *C. elegans* encompasses ~80 genes that are upregulated after microsporidia infection, including a large majority of the *pals* gene family, which have unknown functions. Recent studies have shown that the IPR can also be induced upon exposure to specific abiotic stressors. However, the degree of conservation or divergence of this shared immune and abiotic stress program in other species was unclear. To test this, we used the *Caenorhabditis briggsae*, a nematode species that diverged from *C. elegans* ~18 million years ago. We utilized fluorescent microscopy to explore the visual patterns of reporter gene expression in *C. elegans* and *C. briggsae* after a 24-hour exposure period for three abiotic stressors known to induce the *C. elegans* IPR: heat stress, heavy metal stress with cadmium, and proteasome blockage with Bortezomib. Reporter transgenes were previously made for *C. elegans* and *C. briggsae* to fluoresce GFP when a gene of interest, either *Cel-pals-5* in *C. elegans* or a related *pals* gene, *CBG06596,* in *C. briggsae*. To complement our GFP reporter analysis, we performed RT-qPCR to quantify the endogenous mRNA expression of *pals* genes in *C. briggsae.* We found that all three abiotic stressors induced *pals* gene expression in *C. briggsae,* with proteasome inhibition producing the strongest response. Notably, the only *pals* gene upregulated by heat stress was not induced by heavy metal stress. To further understand the response to abiotic stressors in *C. briggsae,* samples will be sent for whole-transcriptome RNA sequencing.

P64 Cataloging Roman Coinage for the American Numismatic Association

Student Researcher: Zib Lindholm ’27
Majors: Classics and Organismal Biology and Ecology
Faculty Collaborator: Richard Fernando Buxton, Classics

The goal of this project was to update and refine the American Numismatic Association’s (ANA) online catalogue of Roman Republic Coinage. This allows their collections to be accessed from remote locations and utilized in research not done exclusively by the ANA. In other collections such as the MANTIS catalog from the American Numismatic Society in New York, imaging and cataloging of coins has been a vital step in making those subject accessible to researchers and collectors alike. Over the course of our month of research, we were able to sort through each entry, correct any mistakes, and update the catalogue to reflect the best categorization of each coin in the collection. We completed their collection of Roman Republic coinage which contained 130 coins of varying styles, denominations, and historical importance. We also polished off some previous work done on Roman Imperial Coinage. All of these records are now available for use in ancient numismatic study or personal research on the ANA website. In the future, these cataloging methods can be applied to a yet unstudied horde of Hellenistic coins at the ANA.

P65 You Never Get a Second Chance to Make a First Impression: Using Introductions to Frame Mental Models of Social Robots

Student Researchers: Owen McGann'26; Yousef Sengal '27
Majors: Computer Science; Computer Science
Faculty Collaborator: Blake Jackson, Mathematics and Computer Science

Philosophers and computer scientists have long posited that the language that people use to talk to and about social robots both influences and reveals their mental models of those robots. For example, language my indicate and influence whether people think of robots more as humanlike companions or as inanimate tools by framing robots more personally (e.g., using pronouns like "they", "she", or "he") or more impersonally (e.g., using the impersonal pronoun "it"). Many previous experiments have investigated the effects of using a personal versus impersonal framings when introducing the robot to new interactants, with mixed results. In those studies, the introduction providing the linguistic framing of the robot was always delivered either by a human familiar with the robot or by text written from the point of view of such a human. However, many interactions that the average person might have with social robots currently or in the near future in public places like airports, museums, or shopping malls do not necessarily include the opportunity for a roboticist to deliberately supply a linguistic pre-definition beforehand. We are therefore interested in a robot linguistically (pre-)defining its own identity or ontological category in the very beginning of an interaction with a human, which is not, to our knowledge, well-studied empirically. Our 2x2 online experiment compares personal and impersonal linguistic framings in a robot's introduction being articulated either by the robot itself or by a human companion. Though we still have qualitative data to analyze, our measures of trust, likeability, anthropomorphism, and perceived moral status show very little difference between conditions, which is excellent news for robot designers because it suggests that the wealth of experimental work on human-delivered robot introductions can be reasonably generalized to analogous robot-delivered robot introductions, which we expect to be much more practical and common in many contexts.

P66 An Investigation into the role of Endophytes in Invasion Ecology

Student Researcher: Miles Katzen '26
Major: Organismal Biology and Ecology
Faculty Collaborator: Jesus Pena, Organismal Biology and Ecology

Our goal this summer was to study the endophytes, which are a polyphyletic clade of mutualistic fungi which inhabit the leaf, stem, and root tissue of plants, of two species of plants in Colorado. First, a native species – the Eastern Cottonwood, *Populus deltoides* – and second, an invasive species – Tamarisk, *Tamarix Ramosissima*. Tamarisk has become one of the most costly invasives in the US, and has significantly disrupted riparian ecosystems across the Southwest US, replacing natives including the Cottonwood. Our work consisted of collecting leaf samples from these two plants, culturing and isolating endophytes from those leaf samples, amplifying segments of fungal DNA, and sequencing these samples. Our aim was to identify whether horizontal transmission of endophytes was taking place between the native and invasive plants, potentially equipping the invasive species with crucial fungal helpers to survive invasion. Work is ongoing, but the summer was a success, getting all samples sequenced and identified.

P67 Effects of Early Life Stress on Gut Microbiome and Behavior: Dietary Intervention with Inulin and Psyllium

Student Researchers: Sarah Vernooy ’26; Deli Reyes ’26; Ada Youngstrom’26; Andreas Kocmur ‘26
Majors: Neuroscience; Neuroscience; Neuroscience; Neuroscience
Faculty Collaborator: Lori Driscoll, Psychology

Early life adversity can have significant negative effects on neural development and behavior, as well as a negative effect on the composition and integrity of the gut microbiome. The aim of this study was to determine if dietary supplementation with inulin and psyllium could mitigate the impact of early life stress on both the gut microbiome and behavior. Long Evans rats were assigned to either maternally separated (MS - used to model early life stress in rodents), or control groups. Maternally separated rats were removed from their mothers on postnatal days 2-18 for 5 hours each day, whereas control rats were handled and returned to their cages. Rats were also assigned to one of two dietary groups; the control group received regular purified chow (AIN-93G) and the experimental group received purified chow that had cornstarch replaced with equal weight (5%) inulin powder and (5%) psyllium husk. At postnatal day 21, caecal samples were taken from 18 rats to be sequenced using 16s ribosomal sequencing. The remaining rats were administered four behavioral tests: the elevated plus maze, social preference and social interaction tests, and the forced swim test. These are designed to test anxiety, social behaviors, and depressive behaviors respectively. After completion of behavioral testing, blood serum was taken via cardiac puncture to analyze serum interleukin 6 (IL-6) levels using an ELISA assay.

P68 Anarchism in Contemporary Muslim Thought

Student Researcher: Zara Zafar ’27
Majors: Mathematical Economics and Political Science
Faculty Collaborator: Sofia Fenner, Political Science

My research examines Islamic Anarchism as a dynamic intellectual and political tradition with deep historical roots and contemporary relevance. It synthesizes classical Islamic concepts like *takaful* (mutual aid) and *ijma’* (communal consensus) with anarchist ideals of voluntary, horizontal organization, offering a theological critique of the state and property as forms of *shirk* (idolatry). My study investigated historical precedents in Islamic thought, tracing its origins to *Mu’atazili* theology and exemplified by Sufi movements.Using digital ethnography, participant observation, and interviews with members and leaders of groups like the *Nur Askhi Jerrahi Sufi Circle* and *DRUM* in New York City, my research explores the living praxis of Islamic Anarchism. I analyzed how contemporary Muslim communities in NYC, translate abstract principles into concrete grassroots organizing, mutual aid networks, and activism. My research also delved into critiques of Western-centric frameworks, drawing on analyses of secularism as a political project and Anarcho-Blackness to challenge racial and gendered elisions within classical anarchism. This summer I discovered Islamic Anarchism's potential to bridge religious and non-religious social movements for a more equitable, inclusive and liberatory future.

P69 Neurovascular Mapping: KIR2.1 Channel's Cell and Region Specificity in an Autism Spectrum Disorder Model

Student Researcher: Hyungyu Kim '26
Major: Neuroscience
Faculty Collaborator and Mentors (CU Anschutz): Phinea Romero, Fabrice Dabertrand
Department of Anesthesiology, University of Colorado Anschutz Medical Campus, Aurora, CO, USA

Autism Spectrum Disorder (ASD) ranks among the top ten causes of disability in children ages 5-9. Despite advancements in our understanding of ASD through a neuronal lens, therapeutic interventions fail to address core behavioral symptoms, suggesting a need for alternative mechanistic insight. Through Neurovascular Coupling (NVC), the cerebral vasculature rapidly delivers oxygen and nutrients to nearby neurons via localized increases in blood flow. The Dabertrand Lab has found endothelial KIR2.1 channels to be crucial components of the rapid initiation of FH. Further, FH and endothelial-specific dysfunction were found in the 16p11.2 locus deletion mouse model of ASD (16p11.2df/+). Together, these findings invite the possibility of a link between impaired expression of KIR2.1 channels and ASD. The goal of the study is to identify the cell- and region-specific expression levels of KIR2.1 channels in 16p11.2df/+ mice compared to littermate controls. Immunohistochemistry and Corrected Total Cell Fluorescence analysis performed on brain microvasculature—from the middle cerebral artery (MCA)—exhibited a trend towards increased capillary KIR2.1 channels in 16p11.2df/+ mice. Reverse-Transcription quantitative Polymerase Chain Reaction (RT-qPCR) indicated a trend towards increased KIR2.1 channel expression in 16p11.2df/+ mice. Lastly, colocalization analysis revealed a trend towards increased KIR2.1 channel colocalization with endothelial cells in 16p11.2df/+ mice.

P70 Synthetic Parameters and Pre- and Post-Modifications Impact on Carbon Quantum Dot Photoluminescence for the Fabrication of Solvent Polarity Sensors

Student Researcher: Sophie Flam '28
Major: Biochemistry
Faculty Collaborator: Murphy Brasuel, Chemistry and Biochemistry

This study employed a Design of Experiment (DOE) approach to systematically optimize the fluorescence properties of Carbon Quantum Dots (CQDs) for sensor applications. Using six key variables (including chemical precursors, dopants, pH, and microwave reaction time), 15 CQD samples were synthesized. Optical properties were evaluated using UV-Vis and fluorescence spectroscopy, with a composite fluorescence metric (the product of the red-shifted absorbance and emission peaks) used to quantify performance. DOE analysis revealed that extended microwave time, pH shift, and the use of o-phenylenediamine significantly enhanced long-wavelength fluorescence. Two samples (DOE Samples #8 and #10) were selected for sensor development based on their similar absorbance profiles to diVerent dyes used in polarity sensing. In one sensor, Nile Red was blended with CQDs in a polyvinyl alcohol matrix, though results were inconclusive. In a second and more successful configuration, Nile Blue was covalently bonded to CQDs via EDC/NHS coupling in MES buVer, producing a polarity-sensitive fluorescence response. Overall, this study shows that CQD photoluminescence can be precisely tuned through factorial optimization, and that certain tailored CQD–dye systems do hold promise as chemical sensors.

P71 Characterizing the Fungal Endophytes of Native Colorado Flora

Student Researcher: Theo Ollier ’26
Major: Organismal Biology and Ecology
Faculty Collaborator: Jesús Peña, Organismal Biology and Ecology

Fungal endophytes are an understudied group of fungi that exist in all land plants, primarily as mutualists. Though endophytes have not gotten anywhere near the recognition that mycorrhizal fungi have for their symbiotic capabilities, they have significant potential in agriculture and medicine. Endophytes have a plethora of effects on their host plants, with the ability to reduce fungal pathogen infection, promote plant growth, and reduce the effects of abiotic stressors. As many parts of the world are experiencing reduced water availability, reducing the water needs of agricultural crops will be crucial. We hope to test the capacity of arid-adapted endophytes to convey drought stress resistance in a maize, a model crop. First, this study characterizes the above and below-ground endophytic communities of three desert-adapted, native Colorado plants: *C. imbricatus*, *O. polyacantha*, and *Y. glauca*. DNA sequences were obtained from the plants sampled in June 2025 using the internal transcribed spacer region (ITS) and large subunit (LSU) of fungal ribosomal DNA (rDNA) with fungal-specific primers. After identifying the plants’ endophytic counterparts, we plan to carry out a drought experiment in which maize seedlings will be inoculated with selected endophytes and grown under varying levels of drought stress.

P72 Is Your Room Making You Think Less Clearly? CO2's Impacts on Cognition and Stress Biomarkers

Student Researchers: Chenxin Xiang ’27; Allyson Pena ’26
Majors: Molecular Biology; Chemistry and Biochemistry
Faculty Collaborator: Sally Meyer, Chemistry and Biochemistry

Elevated indoor carbon dioxide levels are widely recognized to be associated with physiological dysfunction and cognitive difficulties, including impaired attention and reduced decision-making capacity. These effects raise concerns about the potential impact on college students’ academic outcomes and long-term health issues when they live in small, well-sealed rooms. This study investigated the effects of short-term exposure to indoor CO_2 concentrations of 600, 1200, and 2000 ppm on cognitive performance and salivary stress biomarkers, specifically cortisol and α-amylase, in young adults. One participant completed five 6-hour sessions under controlled CO_2 conditions. After each exposure, saliva was collected for ELISA analysis of cortisol and α-amylase, followed by a cognitive test battery assessing attention and memory. Biomarker responses were modest at 600 and 1200 ppm, but peaked on the first day of 2000 ppm exposure, consistent with acute activation of physiological stress pathways. However, these levels declined over subsequent days under the same high-CO_2 condition, suggesting potential physiological adaptation. While current data from the cognitive tests are inconclusive, subjective assessments indicated increased fatigue and difficulty concentrating at higher CO_2 levels. Future work will involve a larger and more diverse sample and refined cognitive testing tools.

P73 Adipocyte Response to Chronic ART Treatment

Student Researcher: Nicholas Bradley ‘26
Major: Molecular Biology
Faculty Collaborator: Dr. Ryan Ross, Itzel Lazcano, Niyati Patel

HIV is one of the most significant and prominent viruses that the world faces. Currently, there are about 40 million people who live with HIV, and 30.7 million are currently receiving some sort of antiretroviral therapy (ART). Currently, there are two options for treatment on the market: Tenofovir Disoproxil Fumarate (TDF) and Tenofovir Alafenamide (TAF). TDF was the first prodrug created from the original Nucleoside reverse transcriptase inhibitor (NRTI), Tenofovir. However, TDF has comorbidities associated with decreased bone and renal toxicity. TAF was developed to combat the pitfalls of TDF; however, it has comorbidities associated with weight gain and increased lipid levels. My study focused on the response of healthy human fat cells to TAF treatment. Using Simpson-Golabi-Behmel Syndrome (SGBS) Preadipocyte Cells, I was able to treat them with TAF, before I ran qPCR’s looking at 3 hormones: Peroxisome proliferator activated receptor gamma (PPARG), Leptin, and Adiponectin. After collecting the data, it appeared that high-dose TDF and all tested doses of TAF likely suppressed the expression of adiponectin and PPARG, whereas low-dose TDF did not exhibit this suppressive effect. In contrast, the data regarding leptin expression were inconclusive, largely due to a reduced sample size caused by unexpected contamination. To validate these findings and to obtain definitive conclusions regarding the effects on leptin, the experiment will need to be repeated once more.

NON-PRESENTATION RESEARCH

Preserving Compositional Artistry

Student Researcher: David Sigman ’27
Major: Music
Faculty Collaborator: Ofer Ben-Amots, Music

In my five-week period with composer and professor Ofer Ben-Amots, I worked on updating his Wikipedia page, revising the biography, composition list, and related media sections to highlight his career, awards, and achievements, providing both researchers and casual readers a more detailed picture of his musical identity and works. I also published video and audio recordings of select compositions on Wikimedia Commons, increasing accessibility for listeners and Wikipedia editors. Through this, I researched the difference between All Rights Reserved and Creative Commons licenses, and gained the skill to communicate with a third party. An unexpected challenge arose when verifying that Dr. Ben-Amots owned his intellectual property, a process that has required me to be in contact with the Wikimedia team to rectify the issue and provide the correct information to allow Dr. Ben-Amots ’works to be permanently posted on the website. The second part of my internship focused on proofreading and comparing scores of Bebe’s Blues and Fool’s Paradise. Originally composed in Finale and later re-transcribed in Dorico 6, I had to ensure accuracy in the notation across both the originals and duplicates. This work developed my attention to detail, sight-reading abilities, and understanding of composition, intellectual property, and the necessary effort to ensure a smooth collaboration between composer and instrumentalist.

Hip Hop in the Midwest & The Black Midwest

Student Researcher: Student Researcher: Briley Harris ’26
Major: Feminist and Gender Studies
Faculty Collaborator: Hedi Lewis, Feminist and Gender Studies

As a 2025 Summer Research Assistant, I supported Dr. Lewis in her research on the topics of Blackness, the American Midwest, and Hip Hop. Throughout this experience, I focused on two primary research questions. 1.) What is Midwestern Hip Hop? 2.) What, if anything, characterizes Black life in the Midwest? Based on peer reviewed scholarship, I have found that, thus far, the Midwest seems to be a vastly overlooked region within Hip Hop Studies and related fields. There is extensive discourse on how the regional identities of the East Coast, West Coast and, more recently, the south, contribute to the making of distinctive Hip Hop cultures in each place. Yet, place-making in the Midwest is largely described as being too localized to develop a distinctive regional Hip hop identity of its own. With this in mind, I transitioned to my second research question. Black Culture in the Midwest has been heavily influenced by the history of the Great Migration, the lives of Black factory workers in the mid 20th century, and the lasting influence of predominantly Black towns across the Midwest. I also found that many writers of the Black Midwest claim that Black Midwesterners perpetually face erasure in the eyes of national media. This could provide an interesting parallel to the underrepresentation of the Midwest in Hip Hop research.

An Overlying Library for an Auditing API Focused on Dynamic Linking

Student Researcher: Madeleine Johnson ’27
Majors: Computer Science, French
Research Collaborators: Kylie Bogar, Barry Rountree
Faculty Collaborator: Danielle Ellsworth, Computer Science

Our library, LibAudacious, was created to more easily navigate the RTLD-Audit API. This API allows an application to be notified of various dynamic linking events and allows the ability to work inside these events, which includes the ability to stop libraries from being loaded before the main application runs. This allows applications like the Lawrence Livermore National Laboratory’s “Spindle” to more efficiently load libraries for supercomputers and save time by distributing library pathways to computer nodes without each node individually searching for the pathway. However, RTLD-Audit can be difficult to use and has many known bugs. Our library was designed to make the RTLD-Audit library more user friendly and to allow users to have their desired functionality without having to navigate the existing bugs in RTLD-Audit. Our program offers capabilities such as blocking specific libraries at the start of the program, allowing the user the ability to run functions automatically every time a library is loaded, and changing existing C functions to the user’s desired functions while offering the ability to still access the original functions. This program will be significant to future developers looking for a secure way to alter libraries and functions before they have the chance to load.

Extraction of Insecticidal Phytochemicals in Silphium integrifolium and its Toxicological Effect on Fall Army Worms

Student Researcher: Omar Gomez Rodriguez ’25
Major: Biochemistry
Faculty Collaborator: Murphy Brasuel, Chemistry and Biochemistry
Research Collaborator: The Kansas Land Institute, Betsy Trana[2], David Van Tassel[2]

Silphium integrifolium, a perennial plant native to North America with known ties to traditional medicine, has been a plant of interest due to its insecticidal potential. Working with The Land Institute (Salina, Kansas), this study aims to confirm and isolate bioactive compounds previously identified, like a-pinene, D-limonene, germacrene D, neophytadiene, and phytol, all while optimizing the pressure parameters of supercritical CO_2 extraction. Due to plant material limitations*, white sage (Salvia apiana)* was used to test the extraction conditions, as it also contains insecticidal compounds. The pressure ranges tested were from 1500 to 4000 PSI. GC-MS analysis revealed that the best extraction of small molecule bioactive compounds was in the 1500 to 1950 PSI range. In aged *S. integrifolium* samples, certain bioactive compounds, including germacrene D, neophytadiene, and phytol, were detected; however, they exhibited losses likely due to volatilization over time. Findings suggest that supercritical CO_2 extraction is a successful non-degradative method for extracting insecticidal compounds in both *S. integrifolium* and *white sage.* Cold Ethanol extraction also proved to extract similar compounds. Both methods of extractions alongside different controls and treatment efficacies were tested against *Spodoptera frugiperda* (fall armyworms). The bioassay showed that up to day 6, our extracts were competitive with the commercially available neem product; however, by the end of the bioassay, it was clear that neem oil was more effective at disrupting the full lifecycle development of FAW.

Summer at Florissant Fossil Beds

Student Researcher: Emma Zuccotti ’26
Major: Geology
Faculty Collaborator: Henry Fricke, Geology
Research Collaborator: Dr. Gabi Rossetto

This summer, I spent nine weeks interning with paleobotanist Dr. Gabi Harris at Florissant Fossil Beds National Monument. I worked on a variety of projects, starting in the collections room where I updated labels and organized specimens, gaining experience in fossil identification and taxonomy. I also created an ID key for over 60 objects on the Yurt touch table, helping visitors better understand fossil and modern specimens. Each week, I assisted volunteers at the Scudder excavation site and with the trail crew, learning about erosion control, drainage, and trail safety. I also helped out at the front desk and assisted rangers with various projects around the park. After becoming ROHVA-certified, I was able to help conduct fieldwork using the park’s UTVs. A highlight of the internship was a week of fossil collection at a newly discovered site near the park boundary. The site contained unusual lithology and fossil-bearing shales showing soft sediment deformation and silicification, offering new research opportunities. Although my internship has ended, I’m continuing a research project analyzing $\delta^{13}C$ values in fossil plants from the Florissant Formation, with the goal of gaining insight into isotopic variation and paleoenvironmental conditions.

What are Internships

Internships provide high-impact experiences that allow students to demonstrate their ability to apply the knowledge and skills they are learning in the classroom to workplace settings. Through these applied learning experiences students enhance their existing skill set, expand their professional network, and discern future career goals.

Colorado College students participate in a wide array of internships in various roles and industries. Over 120 students received Summer Internship Funding Awards for Summer 2025, allowing them to participate in internship opportunities, many of which remain unpaid or underpaid. Students who receive funding participate in prep programs, reflection activities, and ongoing support to enrich their internship experience.

Students also participated in other Colorado College sponsored internship programs such as the Public Interest Fellowship Program, offering paid fellowships in Colorado's nonprofit sector, the Charlie Blumenstein Stewardship Internship in partnership with The Nature Conservancy-Colorado, National Public Radio, and Colorado Public Radio.

To learn more about these programs, visit the Colorado College Career Center website: www.coloradocollege.edu/careercenter/

To learn more about internship funding, visit: www.coloradocollege.edu/offices/careercenter/internships/internship-funding-awards.html
We hope you enjoy hearing about their unique internship experiences!

INTERNSHIP STORYMAP PRESENTATIONS, IR1-1R34

IR1 Compass Family Services in San Francisco, CA

Student Intern: Grace Gassel '26
Major: Political Science and minor in Journalism

This summer, I worked as a Policy and Development intern with the non-profit, Compass Family Services. Their mission has evolved with the needs of the city over the course of its 100+ years of service. Right now, their mission is to end family homelessness. The organization boasts 13 different programs serving nearly 10,000 people to help families experiencing homelessness, whether it be rent assistance, therapy, case management, childcare and education, and more. My summer position combined both the Policy and Development teams. I relayed information across teams and translated policy information into digestible communications material. Within the Development team, I worked in both Communications and Institutional Giving. With the Policy team, I attended meetings within the organization, local coalitions, and with city officials about homelessness legislation and budget activity. For Communications, I produced content and infographics for our social media platforms, edited materials published on the website blog and completed deep research about homelessness in San Francisco. On the Institutional Giving team, I read over grants and organized past fiscal year grants by program, gaining an understanding of what it takes to produce a successful grant application and fund a large non-profit. Through all of this, I worked closely with fellow interns and team members. The team culture was special and a highlight of this experience. I now feel more empowered and excited to continue exploring the Policy and Development worlds post-graduation and engage with an organization that has a positive team culture and makes a real impact on local communities. (https://www.compass-sf.org/)

IR2 United World Colleges Paraguay in Asuncion, Paraguay

Student Intern: Chiara De Felice '27
Major: Mathematical Economics

During my summer internship at UWC Paraguay, my primary role was to lead the development and implementation of an outreach strategy focused on Asunción and the surrounding Central Department. Acting as a representative of the UWC international movement and an ambassador of UWC Paraguay, I initiated formal relationships with both public and private educational institutions in the community. Coordinated and scheduled in-person information sessions on school campuses and provided program details, scholarship opportunities and shared personal insights as an alumna. Moreover, I assisted in the creation of a long-term fundraising framework to ensure the sustainability of the organization, and the programs offered nationwide. Finally, I conducted an analysis of the social media performance and follower demographics to design an annual digital marketing campaign and advise on audience growth strategies for best practices in digital outreach. This internship gave me the opportunity to translate the quantitative skills I gained through my coursework into community-oriented work. It helped me enhance what I learned in the classroom while developing my interpersonal skills, an approach I aspire to cultivate through my career journey.

IR3 Free to Be Youth Project, Urban Justice Center, New York, NY

Student Intern: Cate O'Connor '26
Major: Political Science

This summer, I worked as a Communications and Policy Intern with the Free to Be Youth Project (FYP), which is housed within the Urban Justice Center and provides free legal services and advocacy for LGBTQ+ youth and youth experiencing homelessness. I worked across media and policy projects to help expand FYP's reach and impact across all five boroughs of New York City. One of my favorite projects was assisting with the documentary *Becoming*, highlighting the stories of five clients as they designed and executed an FYP Fashion Show. I learned trauma-informed interview practices, recorded sound at shooting days and transcribed the majority of our footage. I also helped design and launch new pages for FYP's new website, including a legislation-tracking database and events calendar. For social media, I created educational graphics and Instagram reels spotlighting client stories, upcoming elections, and our Rainbow Line care package initiative. In addition to media work, I supported outreach efforts at Brooklyn Pride and our Tattoos for Trans Equity fundraiser, helping to document events and engage with community members. One of the most meaningful parts of my internship was learning directly from FYP's clients and seeing how their stories underscore the importance of advocacy and representation. This experience demonstrated to me how strategic storytelling, when combined with direct services, can facilitate systemic and political change.

IR4 Flying Pig Farm in Manitou Springs, CO

Student Intern: Michaela Ocko '27
Major: Environmental Studies and Journalism

During my summer internship with Flying Pig Farm, I brought together my passions for sustainable farming, hands-on education, and photography. This summer, I had two main duties on the farm: one, being a camp counselor, and two, taking on the traditional intern role. Throughout my weeks as a camp counselor, I led a team of 17- and 18-year-olds in preparing daily meals for the entire camp, harvesting vegetables, washing and chopping produce, cooking large-scale dishes, and serving food to campers and staff. When I wasn't in the kitchen, I documented camp life, taking photos of candid moments during activities, portraits with children and the produce they had harvested, and the bustle of the camp day. Outside of camp weeks, I weeded and harvested crops, collaborated on the Farm Camp Cookbook, volunteered at the local farmers' markets, and visited neighboring farms to learn about their growing and harvesting techniques. I am extremely grateful for this opportunity, as it has allowed me to meet many amazing people in our community, create a cookbook, educate children – and myself – about local agriculture, and produce digital media for the farm.

IR5 Flying Pig Farm in Manitou Springs, CO

Student Intern: Nico Martinez '27
Major: Independently Designed Major in Environmental Anthropology and Minor in Education

It has been a true privilege to intern with Flying Pig Farm over the summer, getting to know the landscapes, the students and beings that animate it, and myself. As a keystone member of the farm ecosystem, I have taken on a variety of rolls. I have planted, weeded, and harvested a litany of plants and fungi. Through such in-depth interaction, I have honed my senses and identification knowledge, noticing unique expressions, smells, tastes, and feelings. Through working with our permaculture team and other regenerative agriculture farms, I have built a foundational understanding of growing philosophies and strategies, taking the needs of all life into account. Along with caring for more-than-human life, I was tasked with leading daily groups of youth, veterans, developmentally disabled adults, volunteers, and more in the stewardship of the land. Teaching such a broad range of people required me to be a more direct, relatable communicator. Being a member of the farm team has also given me insight into the organization's unique business model, one inherently nested within the Manitou community. I have also been pushed to make art, turning my love for the farm into cute clay statues,

linoleum prints, and cyanotype tapestries. Most of all, the farm filled me with senses of wonder, community, and the good life. I am driven to carry these forward.

IR6 Flying Pig Farm in Manitou Springs, CO

Student Intern: Corinne Kallio ‘25
Major: Organismal Biology and Ecology

Flying Pig Farm is a community garden space focused on land-based education and regenerative agriculture. This summer I spent sleepy mornings among the dew drops, where I weeded between rows of interplanted arugula and fava beans, was enthusiastically greeted by the goats and chickens, and helped plan the day’s activities. Afternoons were spent learning with young students and campers. We dyed fabrics with indigo, introduced ourselves to new plants, dreamed up wild scripts and costumes for performances, watched monarch caterpillars grow from egg to chrysalis, and cooked delicious meals that left our bellies full and plates empty. The gifts and knowledge I have gained from the land and my mentors are truly impossible to quantify, but this internship has allowed me to improve my scientific communication skills, gain experience in social media management, expand on my plant identification knowledge, and help build a wonderful community.
Thank you to Barak, Mel, Ruthie, Forrest, and my fellow interns for making this the most magical summer, but more importantly, thank you to the sun, sky, and soil, for without them nothing would be possible.

IR7 Tidelines Institute in Inian Islands, AK

Student Intern: Amelia Vinton ‘27
Major: Organismal Biology and Ecology

I came to Tidelines Institute looking to learn new physical, intellectual, and emotional skills while also gaining a new understanding of experiential and environmental education. What I found upon arriving however, was a challenge in slowing down, being present, and the gift of community. Over the course of my eight weeks as I did chores, worked to prepare meals, clean dishes, and assist with programming for Tideline’s short courses, I found myself appreciating the quiet, and the focus required to be present with myself, my peers, and the land itself. My relationship to the land and to food also changed with more time I spent out there. Part of my work was participating in the gutting, filleting, cooking, and preserving of the fish caught by local fishermen and through this I gained a new sense of understanding where my food was coming from. In my free time, I got to know the plants under my feet in the forest, some of which were the berry bushes we’d been harvesting from to put up jam for winter. Perhaps the most impactful piece of my summer, was building relationships as close as family with the other staff throughout my time there. At the Hobbit Hole, people live and exist in close proximity, we step on each other’s toes, we spend all day working and living in the same shared spaces and given that we live on a remote island, there isn’t much break from one another. And yet with all of this, comes the strength of community built by those who care for each other physically, emotionally, and holistically. It is not being so up close and personal that we are nosy into each other’s lives, but rather we are mindfully caring for one another and providing a safe space to process our emotions and exist as ourselves. The strength of my

community was the true gift of this summer. I learned a lot about how experiential education can work, and what it is to help run intense programming with long days in a high risk, remote setting, and the greatest growth came from being challenged and supported by the folks around me.

IR8 *Willamette Week* in Portland, Oregon

Student Intern: Asa Gartrell '26
Major: Organismal Biology and Ecology and Minor: Journalism

My summer as a news intern for Willamette Week served as a powerful introduction to the world of print journalism. WW is an alternative weekly paper with a large digital and print readership across Portland. Whether working on stories about ICE protests, restaurant reviews, or informing the public about an urban salmon habitat restoration project, I gained confidence as an interviewer and efficiency as a writer. I also got to launch a pizza review video column called 'Pie Talk' and I helped boost the paper's video presence on social media. My reporting took me all around Portland: to trials, city council hearings, small businesses, and recreation areas. My biggest takeaway from the internship was how collaboration—whether with my two fellow interns, editor, or other reporters—builds meaningful, accurate stories.

IR9 Western Washington Cyrospheric Sciences Research Group in Bellingham, Washington

Student Intern: Erik Aagaard ‘26
Major: Molecular Biology

Albedo is a measure of the reflectivity of a surface usually associated with solar radiation. If albedo of surfaces is known, data relating to larger scale climate models can be gleaned. One fruiting branch of this field of study has to do with the impact of albedo on melting rates in snow. Many factors contribute snow albedo , but determining the significance of measurable factors compared to a known, measured albedo can help in modeling the impact of individual factors on snow albedo. One increasingly significant factor of snow albedo is a variety of species of snow algae. In this project, we aimed to determine the presence of snow algae, black carbon, and some inorganic factors in known blooms on snow feeding into the Nooksack watershed in the North Cascades of Washington state. We took samples from consistent field locations and analyzed algal cell abundance, size, pigment makeup, and other snow related factors including dissolved organic carbon, anion concentration, ash free dry mass, and various trace elements. While the data collected from these samples will be fed into a model being used in a longer term study of the Nooksack watershed, temporal analysis of one season of data yields information on the peak bloom and how proliferative success of snow algae varies with both inorganic and organic stimuli.

IR10 The Western Organization for People Living with HIV/AIDS in Mumias, Kenya

Student Intern: Trevor Weiss ‘28
Major: Neuroscience

Over the summer, I served as a GROW intern with WOPLAH, a nonprofit based out of Western Kenya that is dedicated to reducing stigma around HIV/AIDs and promoting community sustainability. I spent my days working in a local health clinic, conducting malaria tests, analyzing various samples, and drawing blood. Outside of the clinic, I spent some days visiting support groups in the region and contributing to grant proposals to fund

WOPLAH, helping them increase their rapidly growing outreach. My most impactful experience was participating in a jiggers campaign, helping remove the parasites from affected individuals. My time on the ground in Kenya was both professionally enriching and personally meaningful, and I am grateful for the opportunity and am excited to continue working with WOPLAH remotely.

IR11 The Western Organization for People Living with HIV/AIDS in Mumias, Kenya

Student Intern: Brittany Wei ‘28
Major: Mathematical Economics

During my summer internship in Kenya, I had the opportunity to engage directly with HIV-affected communities through both clinical and community-based initiatives. I assisted at a local clinic, supported outreach visits to rural communities, and contributed to an organic farm that provides food security and employment for individuals living with HIV. These experiences gave me a deeper understanding of global health challenges and the importance of integrating medical care with social support systems. More importantly, the internship allowed me to see a very different reality from my own and broaden my perspective on the world.

IR12 Flight Fabrication in Erie, CO

Student Intern: Josh Lillie ‘27
Major: Economics

I am grateful for the opportunity to have interned with Flight Fabrication, a steel fabrication shop specializing in residential projects based in Erie, Colorado, with the support of Colorado College’s Summer Internship Funding program. This was my second summer interning with Flight Fabrication, but my first summer with them since graduating from Lincoln College of Technology (trade school) with a welding fabrication diploma. Equipped with new skills and knowledge specific to the work that Flight does, I was able to add value in new ways this summer. I underwent refresher training in shop safety and extensively utilized various fabrication tools and machinery, including the break press, plasma table, piranha, mitre saw, and welding equipment. Throughout the internship, I benchmarked my fabrication skills through precise test projects assigned to me by my boss. My responsibilities expanded to plasma-cutting, prepping materials for components bent using the break press, such as fascia, siding, and corners for the facades of clients’ homes. I also performed meticulous welding tasks, including welding structural tabs onto c-channel supports and performing over 500 welds to install gussets onto stair pans. Additionally, I executed logistical tasks, including material pickups and drop-offs, maintained shop organization and cleanliness, and supported various stages of the fabrication process from initial CAD designs to final installation for projects like balconies, chimney caps, doors, and staircases (a single staircase would take well over 100 labor hours). This hands-on experience in a small, specialized business gave me a clearer appreciation for the operational challenges and efficiencies that drive value in skilled trades. As an economics student, I found it rewarding to witness how resource allocation, labor specialization, and production timelines play out in a real-world setting, insights that rarely surface in a classroom. This summer reinforced the value of bridging technical expertise with economic thinking, and it deepened my interest in the intersection of labor, industry, and the built environment. I genuinely enjoyed working as a part of a team as passionate and talented as Flight Fabrication to produce quality, timeless products for Colorado homes.

IR13 KHM Attorneys At Law in Colorado Springs, CO

Student Intern: Emma Jones ‘26
Major: Political Science

This summer, I had the opportunity to intern with KHM Attorneys at Law. The internship provided me invaluable experiences, all of which solidified my desire to pursue a career in Family Law. While working for KHM, I was tasked with organizing documents, drafting motions and emails, and completing legal research. Additionally, the internship included shadowing paralegals and attorneys to better understand their daily routine and responsibilities. One of the attorneys I shadowed serves as a Child’s Legal Representative (CLR) and a Child and Family Investigator (CFI); two areas of the legal profession that sparks my interest. During the internship, there were two experiences that had a profound impression on me. First, I observed an attorney advocate for a client in a courtroom setting. She (the attorney) argued the legal concepts of Relocation of Children and Modification for Parenting Time. Her forceful advocacy for the best interest of the child reaffirmed my passion to be the voice for children in the legal process. Second, I was tasked with researching the legal concept of Grandparent Visitation Rights. This expanded my critical thinking skills as I interpreted Colorado Family Laws and reviewed Colorado Supreme court cases to assist in the development of a strong position for the firm’s client. My internship with KHM Attorneys at Law was a wonderful experience! Not only did it provide me with an educational insight to the administrative activities of the Family Law profession; one of the firm’s attorneys exposed me to courtroom arguments. This attorney has also graciously offered to mentor me during my senior year as I explore career paths for life after Colorado College. Thanks to this internship, Family Law remains at the forefront of my career trajectory.

1R14 American Rivers in Washington D.C.

Student Intern: Victoria Levi ‘27
Major: English Literature with minors in Environmental Studies and Classics

This summer, I was the river restoration intern with American Rivers, which is an environmental non-profit that works to protect and restore rivers. American Rivers is the national leader in dam removal efforts, and I primarily worked with the National Dam Removal team. I researched different state policies to help my team with their work on urging different state governments to adopt better dam safety and removal policies, ultimately compiling a state dam laws library. I identified which states have safety regulations or educational materials on low head dams. I worked with a team to advocate for increased safety and community awareness at these dams and a smoother path to removing low head dams that are no longer necessary. I also wrote a blog post published on their website, attended an in-person conference with many different dam removal organizations, and researched other topics such as media quotes, orphaned dam policies and statistics, and helped with grant-writing for actual dam removals! This experience was amazing, and I learned so much — I cannot thank American Rivers enough for their support.

IR15 Creative Health Services in Pottstown, PA

Student Intern: Natalie Caputo ‘27
Major: Psychology

Creative Health Services is a community behavioral healthcare center that offers trauma-informed therapeutic care and rehabilitation services to individuals struggling with mental health and addiction. This summer, I completed an internship with the organization’s Intensive Outpatient Program (IOP). Within the IOP, six groups met every day, each focused on different areas of healing. As an intern, I co-facilitated and ultimately facilitated these group therapy sessions under the guidance of a supervising therapist. I provided support to adults experiencing a range of mental illnesses, cognitive impairment, and trauma. In the population that I worked most closely with, one of the most prevalent diagnoses was schizophrenia. I took detailed notes and submitted reports on each client through the organization’s online database. My supervisor and I met each week to discuss my note-taking skills and strategize plans for future groups. I learned about the inner workings of a mental health facility and gained valuable insight into the role of a therapist. This experience advanced my

clinical skills, broadened my understanding of mental illness and mental healthcare, and fueled my passion for helping others.

IR16 Educating Children of Color in Colorado Springs, CO

Student Intern: Marynn Krull ‘26
Major: International Political Economy

This summer was my second year with Educating Children of Color, where I designed and implemented the second annual Summer Leadership Academy programs in Colorado Springs School District 11 and Harrison School District 2. In addition to leading program planning, I managed social media and newsletter communications, spearheaded our Give Pikes Peak fundraising campaign, and contributed to the organization’s annual strategic planning session. Returning to ECOC allowed me to deepen relationships with school partners, nonprofits, and colleagues, while applying a second year of experience to project management to deliver a more efficient and impactful program on a shorter timeline. Managing communications and a fundraising campaign strengthened my understanding of how to represent an organization. My role as an authorized cardholder —combined with exposure to annual budgeting and contract negotiations — provided valuable insight into nonprofit finances, growth, and sustainability. At the end of the summer, I was promoted to Outreach and Operations Coordinator, a year-round role that will allow me to continue building on these experiences.

IR17 Boston College Athletic Department in Boston, MA

Student Intern: Joe Bullock ‘26
Major: Environmental science

This internship position offers hands-on experience in a Division I collegiate athletic environment, supporting the strength and conditioning staff at Boston College across 30 varsity sports. Interns will assist with the implementation of training programs, perform daily administrative and maintenance tasks, and help set up and break down equipment for workouts. Additional responsibilities include spotting athletes and completing weekly projects and assignments. This opportunity provides valuable exposure to the field of strength and conditioning, professional development within a high-performance setting, and the potential for future recommendations or career opportunities.

IR18 Diva Cup Band in Boulder, CO

Student Intern: Rowan Kempen ‘26
Major: Film and Media Studies

This summer I was given the privilege to go behind the scenes and work with an all-girl, Boulder, punk band called Diva Cup. As their Videographer and Social Media intern, my tasks included attending one Diva-practice per week, attending all shows, creating social media content, recording performance footage, and doing several other small tasks. Initially, I was also trusted to create a music video but their new music hadn’t been recorded yet so it was not possible to complete within the internship period. However, we were able to brainstorm themes for their new music as they’re releasing an EP (extended play) soon. They’ve invited me, in the future, to create a music video for their song “Spider Wife” or “Knife.” I worked closely with all members of the band

to ensure the projects I completed were in-line with their brand aesthetic. All together, my social media posts earned the Diva Cup instagram: 276 new followers, 55 total comments, and 153,308 total views. This experience allowed me to exponentially broaden my network within the Colorado band scene and learn to better utilize creativity within marketing. Experiencing real-world feedback within a working setting, witnessing the behind-the-scenes of band responsibilities, and getting to meet so many new people allowed me to grow as not only a worker but also as an individual. After this experience, I hope to stay involved–at some level– as a visual aid within the music industry.

IR19 Warner Bros. Discovery in New York City, NY

Student Intern: Isabel Bragg '26
Major: Design Studies

This summer I interned with Courageous Studios, the brand studio at Warner Bros. Discovery — a department that creates custom ad content for all sorts of clients. I worked with a hyper-collaborative team doing a range of tasks including scrubbing show files for clips, brainstorming creative campaigns for brands like IKEA, Ulta, Amazon, CNN, and John Deere, and researching talent, locations, and companies for upcoming projects. I was a PA on set for multiple projects one of which being an IKEA commercial inspired by Friends and One Tree Hill, I even got to be an extra during production. Beyond the creative work, I attended client pitches, drafted pitch materials, and took part in networking opportunities like a CEO speaker series and conversations with executives across the company. A highlight was making it to the final round of intern "Pitch Wars," where I presented my marketing campaign for *Sinners* to Warner Bros. Discovery leadership.

IR20 Frontier Group, Denver, CO and Food to Power, Colorado Springs, CO

Student Intern: Sarah Collier '26
Major: Political Science

This summer, I had the opportunity to use CC internship funding for two different experiences.
Frontier Group is a non-profit public policy think tank that works as a branch of The Public Interest Network. This network includes organizations such as Environment America, PIRG, and Green Corps. Throughout this internship, I wrote short pieces on different public interest issues. I was able to choose, research, and revise my writing on different topics and have my work published to help bring awareness to environmental, public health, and consumer awareness topics. I also got to assist in larger research reports on mapping solar panels on schools in North Carolina, researching the top-ten most toxic release industries in Pennsylvania, and collecting information on data center closures in the US. This experience was a way for me to strengthen my own writing skills in a non-academic setting. I was able to work alongside people in the larger network who were collectively tackling issues ranging from saving the bees to shutting down power plants. This internship showed me how important a strong network is for cultivating positive change on both small and large scales.
My second internship was at Food To Power, a local COS non-profit that works to mitigate food insecurity and provide food justice to everyone in the city. The day always started with three hours working on the regenerative and organic farm. We started the summer by planting seeds, prepping beds, and mitigating invasive grasshoppers. Each week, we would harvest our produce and allocate it to the no-cost grocery and delivery programs or to the Southeast Colorado Springs Farmers Market. In the afternoons, we got the opportunity to learn more about the inner workings of a non-profit. This looked like attending meetings, assisting in the food-access programs, canvassing in the Springs for the composting program, and helping with other tasks for the organization. The biggest highlight from this experience was seeing how connected each part of the organization is. The compost and food that are rescued from different areas in the city are used to make healthy, nutrient-dense soil. The plants that we grow and harvest in this soil are then given back to the community. Food to Power demonstrates how we can reinvent our food system by focusing on the benefits of local eating, reducing food waste, and prioritizing equity in food access.

IR21 Mediaite, New York City, NY

Student Intern: Zeke Manly ‘27
Major: Environmental Studies and Minor in Journalism

This past summer, I worked as an editorial intern for Mediaite, a news website based in New York City. I worked in-person in their midtown office, which allowed me to learn first-hand the inner workings of what goes on every day in a successful media/newsroom. Over the course of the internship, I was responsible for many tasks, including copy editing, searching the Internet for possible hooks/story ideas for Mediaite’s writers and editors, creating content for Mediaite’s social media channel, finding supporting information for articles, and doing background research to verify facts. But by far, my favorite job was writing my own stories that ultimately got published on Mediaite’s website. I received nine of my own by-lines during the internship on articles about sports, politics and even a hot dog eating contest on Coney Island. The first time I was assigned an article, I remember feeling nervous excitement. I researched and wrote about Denzel Clarke’s catch for the Athletics, which many sports reporters are calling the “catch of the year.” I had a lot of fun writing this article, especially since I have been an athlete and sports fan since the day I said my first word “ball.” Beyond that, I am most proud of a clip I found and pitched about a conservative comedian/podcaster named Andrew Schulz. He was making fun of Trump’s presidency, saying Trump is “doing the exact opposite of everything I voted for.” I gave it to my boss Aidan McLaughlin, who forwarded it on to Mediaite’s Social Media Manager Kel Dansby, who posted the clip on Mediaite’s account. The video clip now has over 514K views, making it one of the website’s most popular during my internship. In the end, I really enjoyed my experience this summer and appreciated all of the work. I became more confident and learned what details make something worthy of being “news” and that writing a good article is rarely accomplished on the first try but instead takes patience. The internship has solidified my interest in pursuing a career in journalism after I graduate from Colorado College, and I am very grateful for Colorado College’s funding to help me make it possible.

IR22 Innerstill Health in Hopewell, NJ

Student Intern: Febby Nonde’27
Major: Film and Media Studies & Environmental Studies

Last summer I had an opportunity to work with Innerstill Health, and it was a beautiful experience full of adventures. I was the Media intern marketing their new wellness technology to market called mindvybe. mindvybe is non-invasive vagus nerve stimulator that gently balances the body and spirit. We travelled to Los Angelos and New York to promote the wellness technology and support different communities. In Los Angelos we had a program to support the fire impacted communities with a week of free mindvybe sessions. Mindvybe helps the body relax and help individuals to be able to de-stress it's like meditation in a box. Being able to be part of the start of the wellness technology’s start is so meaningful and valuable to me. I have gained valuable real-world experience with media marketing using social media platform like Instagram, Tik Tok and Facebook. This internship was hybrid which made the experience more adventurous and relaxing all in one package. The whole experience has deepened my passion for narrating stories with different purposes and audiences.

IR23 Policy Research on Germany's Digitalization, Compliance Strategies for Forecasted AI Regulations in Telecommunications, and Roma Integration in Slovak Public Spaces across Multiple Internship Opportunities in Germany and Slovakia

Student Intern: Elena Flask '26
Major: German Studies

Our everyday environments, which we often take for granted or deem as inevitable, have been and are currently being shaped by policy makers and elected officials. Throughout my time studying abroad in Germany and Slovakia, I was able to partake in several different internship experiences that explored the far-reaching implications of public policy across multiple spheres. I began my policy research with a focus on how to best establish a new German Ministry of Digital Affairs in the spring of 2025 with German MP Armand Zorn's team while they navigated a new government coalition. Attempts to digitalize Germany had taken place with several former governments without any major successes; my analysis, therefore, hinged upon analyzing new strategies and their efficacy, as proposed by policy experts in this field, and submitting a summarized report and recommendations to the team as Mr. Zorn entered negotiations with the new coalition. The new digital ministry was established the following month. My next internship at CloudTalk, a telecommunications scale-up based in Bratislava, Slovakia, was also report-focused with the goal of forecasting upcoming international AI regulatory policies and summarizing important next steps for compliance. Finally, during August of 2025, I had the opportunity to spend a week travelling across Slovakia with former Slovak Plenipotentiary for Roma Communities, Abel Ravasz, and his colleague, Lubos Kovacs. We had the opportunity to hear from mayors, elected officials, and other community leaders about the blatant disparities that exist today for Roma communities and policy initiatives working towards integrated education, affordable and safe housing, community spaces, and access to running water.

IR24 Moran Lab, Rush University Medical Center in Chicago, IL

Student Intern: Britt Nerad '26
Major: Molecular Biology

This summer was my second summer as a volunteer researcher in the Moran Lab in the department of Anatomy and Cell Biology at Rush University in Chicago. This laboratory utilized many different lab techniques including microCT, SDS-PAGE, histology, immunofluorescence, RNAsequencing, and PCR to investigate a variety of topics. Principal Investigator, Dr. Meghan Moran, does research that focuses on bone health and the gut microbiome in her lab. Under her excellent guidance, I got hands-on experience with Tris glycine SDS-PAGE and mouse dissection. I also became well versed in reading and quantifying data from microCT images of mouse bones. These methods contributed to projects that looked at joint implant failure/loosening, mouse models for heterotopic ossification, and a large project which investigated hundreds of outbred mice to determine genes associated with certain phenotypes of bone. During this experience, we were able to identify a novel trabecular bone phenotype which is to be investigated further. As a scientist, I got to be a part of the research publication process and expand my research skills in the lab. Additionally, I got to meet so many amazing people who are talented in their field and at the frontiers of medical research.

IR25 Flucto in Bremen, Germany

Student Intern: Marrina Jacka '25
Major: Physics

This summer I had the privilege of working with Flucto a software development company that has created sensor boxes to collect data on offshore wind turbines installations. I worked for 10 weeks analyzing their data sets, creating graphs, and learning the software. The goal of this exploration was to use the three degrees of freedom model to understand the orbital behavior of offshore wind turbines. By analyzing and graphing the fore-aft and side-side motions, I wanted to characterize the orbits made by the turbine. Understanding the characterizations of the orbits as well as what drives it is paramount in developing safe and smooth installations.

IR26 2Life communities in Brighton, MA

Student Intern: Luc Santos '26
Major: Business, Economics & Society

I spent my summer working as a Marketing and Communications Intern at 2Life Communities, located in Brighton, Massachusetts. 2Life is a non-profit organization whose focus is on providing affordable housing and the creation of communities for elderly individuals. Throughout my internship, I closely collaborated with the marketing team. I assisted in social media content creation, blog writing, and analytics. Moreover, I learned how to create content using Canva, draft newsletters intended for donors and analyze data pertaining to our social media campaign. I attended countless team meetings ranging from content planning to more major discussions like an organizational rebrand. Some of the tasks I performed include arranging promotional materials, revising media and distribution plans, and drafting content for newsletters. The team at 2Life was very friendly and welcoming. The department I worked with was very mission focused and invested in their work. This internship has helped to not just develop skills within the marketing industry but as affirmed my interest within the industry. I am very thankful to have gotten the opportunity to work with 2Life over this past summer.

IR27 OSU Menge-Lubchenco Lab, PISCO in Corvallis, OR

Student Intern: Peter Renwick '27
Major: Organismal Biology and Ecology

Along the west coast of the United States – running all the way from Alaska down to Mexico are intertidal ecosystems that have had their own significant contributions to ecological research. It comes down to their definition – their limited spaces and highly stressful environment is what intrigues many researchers today. While the ocean is becoming a more significant presence in our understanding of global climate regulation, it is important to take a step into intertidal spaces where human stressors will likely have a noticeable impact. By partaking in the Lubchenco-Menge lab at Oregon State University, I was able to receive some insight into how research in intertidal spaces is conducted and how it can influence policy and management of our oceans and shores. The lab itself monitors and runs experiments in intertidal spaces with an interest in furthering our collective understanding of these ecosystems and as a part of collaboration with Partnership for Interdisciplinary Studies of Coastal Oceans (PISCO). While this lab also hosts graduate research, it was the monitoring and broader research that I was most involved with. It was with early morning alarms (to get out to low tide) and processing reproductive parts of sea star arms that I was able to learn and explore ecological research as an intern. From being able to visit the most picturesque sites along the coast to seeing whales breaching 20 ft away, I couldn't be more grateful for such a fulfilling experience.

IR28 **Guthrie Medical Group in Sayre, PA**

Student Intern: Aziza Ismailova '27
Major: Neuroscience

This summer, I completed a nine-week internship in the Neurosurgery Department at Guthrie Medical Group under the mentorship of Dr. Kim Rickert. The neurosurgery department at Guthrie aims to develop a unique plan to achieve patients' best outcome. Throughout this experience, I gained exposure to a wide range of cases,

including brain tumors, cerebrovascular disease, minimally invasive spinal surgery, and neurological trauma. I had the opportunity to take patients' vitals, scrub into procedures, assist in surgeries, and analyze medical images to support diagnostic decision-making. Working alongside Dr. Rickert was both challenging and rewarding, as it strengthened my clinical skills, deepened my understanding of treatment options for neurological conditions, and confirmed my passion for pursuing a future career in neurosurgery.

IR29 DANCE Lab, Institute of Child Development, University of Minnesota Twin Cities, MN

Student Intern: Bernie Latham '27
Major: Neuroscience

This summer, I completed a research assistantship at the Developmental Affective Neuroscience, Culture, and Environment (DANCE) Lab at the University of Minnesota Twin Cities (Institute of Child Development). The DANCE Lab's research aims, established by principal investigator Ka Ip, include informing social policy, advancing health equity, and optimizing the "sensitive window" of child development for preventative interventions. I had the opportunity to advance these goals in a variety of ways. I contributed to literature reviews, statistical models and figures, editing, formatting, and revision for multiple manuscripts. I also assisted in refining the purpose, goals, and procedure for an early-stage study using fNIRS. Learning how to operate, troubleshoot, maintain, and collect data using fNIRS equipment while involved in this study was absolutely a highlight! I am looking forward to continuing my work with the DANCE Lab this year (in a virtual capacity), as well as applying the knowledge and skills I have developed to future academic and career endeavors.

IR30 DZANC Books in Ann Arbor, MI

Student Intern: Chloe Jung '27
Major: English

This past summer I had the pleasure of working alongside Michelle Dotter, the Editor-in-Chief of DZANC and Colorado College Alumni, and a group of about 10 interns as we collectively tackled fresh manuscripts, copy-edited hundreds of pages, and drafted publishing schedules with pieces handpicked from the thousands. DZANC Books, an independent publisher located in Ann Arbor, MI, dedicates itself to creating a space for the experimental, the whimsical, and the novel and over these hot summer weeks, I not only honed my skills in editing, evaluating, and proofreading, but I also developed my own personal taste in writing and reading.

IR31 Grow Food Northampton in Northampton, MA

Student Intern: Lauren Elsea '26
Major: Environmental Studies

Grow Food Northampton is an organization which aims to build a sustainable food system and address food insecurity within the Northampton Community. They own and steward 121 acres of land, which they lease to local farmers as well as provide a space for community farming at a subsidized price to provide equal access to healthy and local food. My primary work was on the farm itself, where I worked alongside the land stewardship manager to remove invasive species, assist with the implementation of a Living History Garden- a garden meant to "honor crops whose seeds carry the weight of history and the stories of this land," and contribute to ongoing research projects. Outside of the farm, I worked at the weekly farmers market in our downtown plaza, attended weekly mobile markets where we distributed free locally grown produce and foods to nine low-income housing sites across the area, and worked as an environmental educator at field trips which Grow Food hosts for all kindergarten through second grade classes from the region's public schools. My work with the organization allowed me to develop a much deeper understanding of what food sovereignty means within my own community and to develop a deeper relationship of my own with the land itself.

IR32 Wild Heritage, Berkeley, CA

Student Intern: Luca Maes ‘27
Major: Political Science

As a Political Science major Environmental Studies minor interested in working in the global environmental policy realm, I was excited to receive a response from Cyril Kormos, Founder and Director of Wild Heritage, after months of emailing California non-profits in hopes of finding a summer internship opportunity. Wild Heritage is the only conservation NGO predominantly focused on primary forest protection around the world, and their mission of accomplishing their conservation goals through scientific research, international coordination, and equitable collaboration with Indigenous communities resonated with my values and career aspirations. My work for Wild Heritage consisted primarily of conducting research and writing papers on troubling situations in which efforts to protect wilderness areas under the UNESCO World Heritage Convention resulted in national governments committing human rights abuses against local Indigenous peoples who had stewarded the land for millennia. The three major case studies I completed concerned Kaeng Krachan Forest Complex in Thailand, Ngorongoro Conservation Area in Tanzania, and Chiribiquete National Park in Colombia. My papers will be included in a much larger report titled “Indigenous Peoples, climate change mitigation and the World Heritage Convention: A global assessment of potential synergies” that seeks to present a novel paradigm for utilizing the UNESCO World Heritage Convention to protect land with high biodiversity and carbon sink value while simultaneously empowering, learning from, and partnering with Indigenous communities. Once the report is fully polished, it will be presented at an international conference, most likely in Spring or Summer 2026.

IR33 Schepens Eye Research Institute of Mass Eye and Ear, Boston, MA

Student Intern: Ella Matteucci ‘26
Major: Neuroscience

During the summer of 2025, I had the privilege of interning at the Schepens Eye Research Institute in the Jurkunas Lab, working alongside Harvard Ophthalmology and Mass Eye and Ear to study the underlying causes and potential treatments for Fuchs Endothelial Corneal Dystrophy (FECD). Through this experience, I gained independence in wet lab techniques such as PCR, gel electrophoresis, genotyping, staining, and cell culturing. I developed my fine motor skills performing complex mouse eye dissections under a microscope. I also recorded statistics and mouse behavior for a novel study on the combined effects of UVA exposure and smoking on corneal endothelial cells. Weekly, I shadowed Dr. Jurkunas in Mass Eye and Ear’s Ophthalmology Clinic where I was exposed to surgical procedures, patient interactions, and clinical decision-making. In my free time, I developed a Python-based tool to improve both accuracy and efficiency of cell counting in the lab. Ultimately,

this internship strengthened my perseverance, critical thinking, and technical skills while helping me recognize that while I value the importance of research, I am most drawn to human care in a healthcare setting.

IR34 Newton Community Farm, Newton, MA

Student Intern: Clio Quilter-Vagts ‘26
Major: Studio Art

This summer I had the wonderful opportunity to work on a very small urban farm near my hometown of Watertown, MA. I split my time there between working in the fields, harvesting and maintaining crops and plots, and working in the on-site farm stand, selling our vegetables and fruits to community members. Over the course of this summer, I learned so much about small-scale, sustainable agriculture, about being an enriching part of a local ecosystem, about the importance and simplicity of increasing food access, even on small scales. I worked alongside a crew of four other wonderful people to make all of this happen, and I feel remarkably grateful for having been able to learn from and with them all. I learned so much about intensive growing and the potentiality of feeding many people on just over an acre’s worth of land. It was incredibly inspiring.

INTERNSHIP STORYMAP PRESENTATIONS, IR35-IR66

IR35 Colorado Springs Chamber & Economic Development Corporation in Colorado Springs, CO

Student Intern: Karolis Margis ‘26
Major: Economics

The Colorado Springs Chamber & Economic Development Corporation serves as the leading business voice of the Pikes Peak region, supporting existing companies, attracting new investment, and strengthening the local economy. As an Economic Development Intern, I supported research and analysis on the aerospace and defense industry in the region, updating and verifying a database of firms and preparing geographic visualizations of their locations. I also assisted with the Chamber’s quarterly cost-of-living index by collecting and organizing pricing data from local businesses, and contributed to the planning and execution of a site selector visit by preparing participant biographies and assisting with event logistics. This role provided exposure to economic development operations at the local level, including business research, data collection, and engagement with community stakeholders.

IR36 Kosovo Law Institute in Kosovo, Prishtina

Student Intern: Era Musa ‘26
Major: Political Science

My internship at the Kosovo Law Institute was both professionally enriching and personally meaningful. I had the opportunity to engage directly with issues of rule of law, good governance, and justice reform, areas that are central not only to Kosovo’s democratic development but also to the broader study of international politics and law. Working with dedicated staff members, I was able to contribute to ongoing projects that examined the challenges facing Kosovo’s legal system, from questions of judicial independence to transparency and accountability. These experiences gave me a much deeper understanding of how legal institutions function in practice and how difficult, but essential, it is to build and maintain public trust in them. Beyond gaining practical skills, this internship also shaped how I think about the relationship between law, politics, and society. I witnessed how legal reform is not only a technical process but also a political and social one, influenced by both domestic pressures and international dynamics. It reinforced my belief that strong institutions are key to ensuring justice, protecting human rights, and advancing democratic stability. Overall, my time at the Kosovo Law Institute allowed me to apply my academic knowledge in a real-world context, develop new skills in research and analysis, and grow more committed to pursuing a career in law, governance, or international policy.

IR37 National Women's Studies Association

Student Intern: Charlotte Combe ‘26
Major: Sociology and Feminist & Gender Studies

I had the opportunity to work as a fellow for the National Women’s Studies Association. As a fellow, I helped plan for the upcoming annual NWSA conference being held in Puerto Rico this November. I created additional resource lists based on the sessions planned for the conference on topics such as celebrating the legacy of Sylvia Rivera and recognizing the anniversary of the ADA. This was an amazing experience because I got to revisit readings from Feminist and Gender Studies classes and expand my knowledge to new and contemporary scholars. In addition, I created a press directory to be housed on the NWSA website, where scholars can easily access resources to publish their work in Feminist and Gender Studies in academic journals, small independent presses, and university presses. Overall, I am so grateful to have been granted funding for this opportunity and am proud of my contributions to the foundation.

IR38 The Park Adoption Community Center in Centennial, CO

Student Intern: Shay Anderson ‘26
Major: Psychology

The Park Adoption Community Center originated from the larger Cherish Child Adoption International agency, with a focus on post-adoption and adoptee-specific proposals. As the cultural program intern, my primary objective was to design a pilot for multi-country applicable “My Culture, My Story” boxes and curriculum for families with adopted children of various ages. This involved researching culturally specific enrichment (toys, games, foods) by age group for China, Colombia, Bulgaria, and Taiwan, along with standard developmental milestones. I also developed a guide for parents on how to personalize the box to incorporate aspects from their child's specific adoptive experience and heritage. It is important to involve siblings as well in reflection activities to avoid any familial divides or informational deficits. Examples of reflection prompts include *"What do you remember, know, or have been told about the time we first became a family?" "Describe one important memory from our shared life that feels significant to you."* I helped facilitate and lead the week-long Destination: China Cultural Camp for adoptees ages 8-13. Each day had a different theme centering around recognizable hallmarks of China (1. Navigation and the Compass, 2. Terracotta Warriors, 3. The Great Wall, 4. Bamboo Forest and Panda Reserve, 5. Arts and Scrolls), where children participated in hands-on, interactive activities that provided a fun, immersive, and informative introduction to a shared cultural background. They learned practical (cooking, language) and creative (art, dance) skills, plus common philosophies/stories. These initiatives aim to encourage intercultural learning, strengthen family bonds, promote positive child development, and help adoptees develop a more well-rounded understanding of their personal identity.

IR39 Phil Weiser for Colorado Campaign in Denver, CO

Student Intern: Nathan McCracken ‘28
Major: Political Science

I had the pleasure of being a student fellow on Phil Weiser for Colorado. This fellowship provided me with opportunities to get involved in multiple aspects of Attorney General Phil Weiser’s campaign for governor. My primary job was in assisting the campaign’s finance team. I collaborated closely with staff to consistently update data and preform donor research to support dozens of fundraising events across the state of Colorado. I was also able to assist the campaign with event staffing which included parades, fundraising events, and tabling. Door-to-door deep canvassing was one of my favorite parts of the campaign and got to the core of politics and messaging through meaningful and impactful conversations with voters. I also got to assist in some policy research for the campaign, investigating an issue and succinctly compiling my findings. This fellowship was an excellent way to be exposed to and learn about Colorado politics. Fellowship calls brought on guest speakers who shared their expertise and experience working in Colorado’s political sphere and events provided the opportunity to collaborate with passionate students from across Colorado.

IR40 Wildlife Rehabilitation Center of Minnesota in Roseville, MN

Student Intern: Nora Graeve ‘27

Major: Organismal Biology & Ecology

The Wildlife Rehabilitation Center of Minnesota is one of the world's busiest wildlife hospitals, admitting over 2100 patients every year, including 200 different species. As wildlife rehabilitators, their mission is to provide medical care and rehabilitation to injured, sick, and orphaned wildlife. I spent my summer working with this organization as a Mammal Nursery Intern. I was responsible for caring for mammal species such as rabbits, squirrels, flying squirrels, opossums, raccoons, and other small rodents. I syringe-fed, tub-fed, or bottle-fed these animals until they were mature enough to feed themselves. I also provided enrichment, administered medications, and monitored hydration for these animals, administering subcutaneous fluid injections when needed. As these animals grew older, I helped care for them at a large outdoor facility until they were ready for release. Throughout this summer, I learned about mammals through hands-on experience, as well as valuable veterinary skills that I will take with me throughout my career. This experience tied together my interests in veterinary medicine, wildlife, and conservation in an incredibly rewarding way.

IR41 Beyond Literacy in Philadelphia, Pennsylvania

Student Intern: Harris Proctor '26
Major: Computer Science

Beyond Literacy is the largest adult education non-profit in Philadelphia, working to offer various educational services to underserved adults. To this end, Beyond Literacy offers many classes both in person and online over zoom. As an app development intern this summer my job was to design and create an app for learners to simply and directly get access to class information and resources. I worked to make a simple interface for even users with limited digital literacy to get easier access to class, schedule, zoom links and other relevant information which previously required direct communication with Beyond literacy staff. This app had many interesting challenges like making the app fully multilingual for 7 languages, fully functional for both IOS and Android, and with secure, scalable database connection. This project presented fascinating challenges and provided me with an incredible, hands-on experience in the entire software development lifecycle, from initial design to final production. Ultimately, this internship sharpened my technical abilities and deepened my understanding of how technology can be used to create accessible solutions that help people in the real world.

IR42 Rogers Activity Center Community Garden in Rogers, Arkansas

Student Intern: Noah Furuseth '26
Major: Independently Designed Major in Ecological Urban Studies

I had been planning my time at the community garden a year prior to this internship and incorporated its concept into several of my assignments during my two semesters abroad. With a plot of land secured by the activity center and stone planting beds already in place, it was just my leadership and facilitation that was needed for a community garden to emerge. Within the first weeks I had attracted a small group of volunteers, with preparing the ground and laying down seeds as our first priority. We received donated plants and tools from surrounding plant nurseries and had a proper start to the summer season. I put together the many skills I accumulated through my years of gardening at my Mom's house, as well as the more recent ones from my experience with community gardens and food networks from my semesters abroad. I focused on building social

capital, with the production of food as a lure to attract people and animals that would overall make the space functional. I invited friends and family and facilitated garden days with groups of kids from day camp at the activity center. We also were able to donate some of the produce to a local community center who cooked meals and gave out groceries for free to anyone in the community. For my last garden event I threw a garden party and invited people from all over the community to join, including attendees of the nearby farmer's market, downtown shop owners, and random people I walked by. Though not everyone showed up, the word was out that Rogers had its first community garden. The garden is now maintained by a dedicated family of volunteers and will continue into the fall and the next growing season. We have plans to work with the City Parks and Recreation Department and have gained interest in volunteering by the Rogers Garden Club and Rogers High School Environmental Club. The garden has also recently received donated native plants, which will help the garden continue as a multifunctional space for all species.

IR43 Yellowstone to Yukon Conservation Initiative in Canmore, Alberta, Canada

Student Intern: Jesse House ‘28
Major: Undeclared

This internship focused on both the social and natural science aspects of climate change. Within the context of international frameworks (such as the Intergovernmental Panel on Climate Change), I studied the role that the Yellowstone to Yukon Conservation Initiative can play in supporting climate mitigation and adaptation. I also had the opportunity to help orient staff in this climate conversation, as well as to develop public messages about local climate actions that have significant impacts. I finished the internship feeling empowered by the science-based climate action that the Yellowstone to Yukon Conservation Initiative has a unique opportunity to support -- at a scale that truly matters.

IR44 Dzanc Books in Boulder, CO

Student Intern: Annie O’Neill ‘26
Major: English-Creative Writing

This summer, I had the opportunity to work with Dzanc Books, a small independent publishing house. Under the mentorship of Michelle Dotter, a Colorado College alum and Dzanc's Editor in Chief, I gained a greater understanding of the publishing process. Michelle held weekly sessions where she walked us through key aspects of the industry, including proofreading, copywriting, typesetting, editing practices, and publishing timelines. We also discussed how to approach authors with editorial feedback, an often fragile but necessary part of the whole process. Each week, we reviewed submitted manuscripts and participated in acquisition discussions, evaluating whether a book aligned with Dzanc’s mission and repertoire. Working with an independent press allowed me to see a more intimate and creatively driven side of publishing, distinct from the structure of bigger publishing houses.There is powerful content that only small houses can publish, and I feel very lucky to have seen this first-hand at Dzanc.

IR45 Food to Power in Colorado Springs, CO

Student Intern: Nora Ito '26
Major: Environmental Studies

Food to Power is a local nonprofit organization dedicated to increasing access to healthy, sustainable food in the Colorado Springs community. This summer, I joined three other interns from Colorado College to support a variety of their initiatives, including No-Cost grocery programs, compost collection routes, community outreach, and daily farm work at their hub in the Hillside neighborhood and throughout the city. At the beginning of each week, we harvested root vegetables, fruiting crops, and leafy greens, carefully bundling them by hand to be distributed at farmers markets across Colorado Springs and Pueblo. Additional farm tasks included trellising tomatoes, cucumbers, and peppers; spraying natural solutions—such as garlic juice, micronutrients, and calcium—to boost yields and manage pests; and preparing and planting farm beds. On other days, we joined compost collection routes serving neighborhoods around Colorado Springs or turned compost piles at a local facility. At the end of each week, we assisted with the No-Cost Grocery Program, helping to pack fresh produce for community distribution. We also frequently led volunteer groups and helped sell produce at the Southeast Colorado Springs farmers market.

IR46 Food to Power in Colorado Springs, CO

Student Intern: Ruby Mae Heathman ‘26
Major: Environmental Studies

This summer, CC internship funding gave me the opportunity to work with Food to Power (FTP), a food access nonprofit in Colorado Springs. FTP consists of three programs: 1) the urban farm on-site at the organization’s hub in the Hillside neighborhood, 2) food access and delivery, and 3) compost. During our time with FTP, the other CC interns and I worked on the farm, assisted with community fridge and no-cost grocery delivery programs, monitored compost piles, canvassed for the expansion of the compost drop-off program, attended all-staff meetings about the organization’s future, ran a stand at the Southeast Farmers Market, facilitated volunteer days, and posted on the organization’s social media. The majority of my time was devoted to maintaining the farm, which produces food for the no-cost grocery program and Southeast Farmers Market. Throughout the summer, I was able to witness firsthand the amount of communal work that goes into running an organization that serves so many of the community’s needs. I now have a stronger understanding of food access in Colorado Springs, the significance of sustainable agriculture, and the inner workings of the non-profit world in 2025. I am grateful to FTP for demonstrating the importance of community in Colorado Springs.

IR47 Cheyenne Mountain Zoo in Colorado Springs, Colorado

Student Intern: Mea Allex ‘26
Major: Organismal Biology and Ecology

This summer, I interned at Cheyenne Mountain Zoo here in Colorado Springs and worked in their Elephant and Rhino barn. Cheyenne Mountain Zoo is a conservation-focused, accredited zoological institution known for its innovative animal care and guest experience programs. As an intern, I assisted with preparing diets, cleaning enclosures, training sessions with the animals, and educating guests about the importance of conservation and the biology and behavior of elephants and rhinos. This hands-on experience deepened my understanding of animal care, welfare, and enrichment, and reinforced my passion for working with wildlife. I'm especially grateful for the mentorship from experienced keepers, who helped me grow in confidence and skill throughout the summer. The internship led to a part-time role as a Keeper Assistant at the zoo, which is allowing me to continue gaining valuable experience as I complete my senior year and prepare for a post-graduation career in animal care. This internship was absolutely wonderful, so I cannot wait to continue working with the keepers and animals at the zoo!

IR48 International Institute of New England in Boston, MA

Student Intern: Owen Mix '26
Major: Psychology

Last year, IINE achieved 100 years of serving immigrants and refugees in the Greater Boston Area as well as having their greatest fiscal year to date. This year, Donald Trump took office. Prior to this past summer I had watched, alongside all Americans, the immediate political fallout following January 20th. My perspective back in May was that this internship would give me the opportunity to push back in some way against the Trump Administration's wronging of the American people. Furthermore, I am a psych major, and social services work is perfect experience for my immediate and long-term career aspirations. I interned in their Employment Services department, whose goal is ensuring employment for the immigrant and refugee population in Boston. This typically includes client intakes, and subsequent commitment to a yearlong program designed to become and stay employed in Boston despite conflicts with English comprehension or experience with the American workforce. In March, the United States Government terminated the CHNV Parole program, which had previously granted lawful work authorization to refugees from the aforementioned countries. Massachusetts then blocked the termination of the program in April, which was overturned in May. Thus, come June, the Department of Homeland Security began issuing notices of termination for employment authorization documents to many of our clients. My first week in the office, we were being monitored by the government. While I never felt unsafe myself, I was close with my clients, and it was difficult not to worry for their wellbeing. Halfway through June, we began to see the real effects, as many of our then active clients had to be closed out of our systems. Towards the second half of my internship, two coworkers of mine and myself started a weekly Haitian Creole Workforce Orientation Workshop. This was a presentation about the American workforce that we delivered through an interpreter to newer refugees that can't work due to the policy. The program is still fairly new, but it has had consistent turnout and seems to reach audiences in a productive way. Daily tasks typically included creating resumes—> applying to jobs—> following up with employers for clients, as well as inviting clients to weekly WOW sessions. All in all, this experience was very gratifying as I met so many great people and contributed to a good cause.

IR49 Storey Smith Pediatric Clinic, Falmouth, ME & Woven Care Pediatric Clinics, Colorado Springs and Fountain, CO

Student Intern: Tori Kendeigh '26
Major: Psychology

I had the incredible opportunity to intern as a student/rehab aide at three pediatric occupational therapy clinics: Storey Smith Pediatric Clinic and two locations of Woven Care Pediatric Clinics. Over the course of eight weeks, I observed occupational, physical, and speech therapy sessions, gaining valuable insight into the various realms of pediatric therapy. Throughout my time at the clinics, I witnessed therapists support children in achieving greater independence in their daily lives. Interventions targeted a range of skills, including emotion regulation, activities of daily living, sensory integration, and fine motor skills. The patient population ranged from toddlers to young adults (ages 1-20) with varying mental health conditions, developmental delays, and intellectual and

learning disabilities. In addition to shadowing, I supported clinic operations, especially during the first four weeks at Storey Smith Pediatric Clinic. My responsibilities included organizing therapy spaces, filing paperwork, and helping with the planning and coordination of summer therapy groups. For these groups, I managed supplies, ensured the activities aligned with therapeutic goals, and assisted in facilitating smooth, engaging sessions. This internship has deepened my understanding of pediatric occupational therapy, and I am so grateful to have had this experience to support both therapists and the children they provide care to.

IR50 KIRO, New York, NY

Student intern: Tessa Frantz '27
Major: Business, Economics and Society

I had the opportunity to intern for KIRO, an up-and-coming chiropractic studio in New York City. My role this summer was to manage various marketing channels, serve as customer service and generally support the two studios they currently operate. Moving between the studios located in NoHo and the Upper East Side, I had a fully immersive experience and learned firsthand what it means to operate a start-up. I had a variety of daily tasks, including answering questions from patients, both in person and over email. Being in the studio daily, I was constantly conversing with and assisting patients, which turned out to be one of my favorite aspects of the job. I conducted patient testimonials, interviewing and filming patients about why they continued to choose KIRO. I managed the company's social media, researched advertising opportunities on streaming services, as well as more tangible marketing, like sidewalk signs. Generally, I helped keep the studios clean, fostered friendships with patients and coworkers, and became a part of the flow of KIRO.

IR51 Three Springs Community Farm, Bodega, CA

Student Intern: Maddox Rochman-Romdalvik '27
Major: Geology

I completed the summer apprenticeship program at Three Springs Community Farm. Three Springs is a small farm located on the northern California coast that provides organic CSA (Community Supported Agriculture) boxes to members throughout the Bay Area. As an apprentice, I gained hands-on experience with organic farming methods, including nursery work, vegetable production, and animal husbandry. Most days involved bed preparation and irrigation, planting, seeding, harvesting, as well as troubleshooting day-to-day challenges on the farm. Three Springs is also an educational farm, committed to mentoring elementary through high school students from across the Bay Area. During the summer, we hosted overnight school group visits, where students would learn basic farming tasks and the importance of agriculture. I helped plan and lead many of these farm activities for school groups and volunteers. Additionally, I had the opportunity to visit neighboring farms, observe different farming techniques, and receive guidance from local farmers. After a long day on the farm I enjoyed swimming in the river, relaxing at the beach, and spending time with my fellow apprentices.

IR52 Rocky Mountain Wildlife Alliance in Sedalia, CO

Student Intern: Langley Murray '26
Major: Organismal Biology and Ecology

The Rocky Mountain Wildlife Alliance is a multi-faceted organization that ultimately aims to elevate the care and protection of wildlife through creating a sense of community. The organization is primarily a wildlife hospital and rehabilitation center where we intake a plethora of sick and/or injured front range species and provide care until they are fit for release into the wild. We also work directly with the public through educational outreach to foster a better understanding for Rocky Mountain ecosystems, its organisms, and its stewardship. As a Wildlife Medicine Intern, I was able to work directly with wildlife and be a part of all aspects in the rehabilitation process. Under direct supervision from licensed rehabbers, some of my primary responsibilities included:

triaging patients and conducting intake exams, creating treatment plans, administering daily medication and providing specialized species care. Through this internship I gained invaluable clinical experience that has taken me one step closer to becoming a veterinarian.

IR53 ICWA (Indian Child Welfare Act) Law Center in Minneapolis, MN

Student Intern: Grace Ersfeld O'Brien '26
Major: Political Science and Comparative Literature

Following the Indian Child Welfare Act in 1978, courts have provided tribes with exclusive jurisdiction concerning child welfare cases regarding Indian children, marking the beginning of the current struggle to reduce the disproportionate amount of Indian families being separated by the child protection system. The ICWA Law Center of Minneapolis works tirelessly to preserve families impacted by the discrimination that has led to a disparate amount of out-of-home placements for Indian children. Having the opportunity to contribute to the crucial work of representing Indian women and their children was an incredibly rewarding experience, and learning from such a driven group of people who have a true passion for their advocacy was a privilege. In my time at the Law Center, I conducted legal research on permanency, worked with staff attorneys to develop case strategies, sourced pertinent evidence to inform lines of argumentation essential to the center's mission of keeping families together, and visited with clients in urgent need of resources. In addition, I was responsible for proofing and editing legal documents, and attended weekly hearings where I could witness cases play out firsthand. I loved doing this deeply analytical and people-oriented work, and am so grateful for this experience, which has further clarified why I want to pursue a career in law by illustrating the profound impact legal advocacy can have on individuals and communities.

IR54 Rocky Mountain Wildlife Alliance in Sedalia, CO

Student Intern: Connor Cronk '26
Major: Organismal Biology and Ecology

This past summer, I worked at the Rocky Mountain Wildlife Alliance as a full-time intern. The RMWA is an animal rehabilitation and education center that focuses on providing educational resources, fostering a culture of collaboration among wildlife professionals, and rehabilitating sick and injured wildlife in need. During my internship, I was responsible for every aspect of animal care: feeding, medicating, setting up enclosures, cleaning, and monitoring. I learned several important skills required for these tasks, such as how to safely handle raptors, calculating and administering subcutaneous fluids, correct feeding methodology and diet

creation, along with assessing and treating physical injuries. Of course, cleaning was a massive part of the job. Working with these beautiful wild animals was challenging, but incredibly rewarding. Moreover, this wasn't a learning experience for just me; educating the general public was a crucial part of my role. Kind and caring people brought in wounded animals many times a day, and teaching them about proper care procedures and preventative measures (such as window stickers and keeping cats indoors) brings awareness to our communities. This experience was not only an incredible opportunity to work with animals, but an absolute wealth of important knowledge and real-world application of many concepts I've studied here at CC.

IR55 Pure Distilling, Colorado Springs, CO

Student Intern: Maddy Golier '27
Major: International Political Economy

This summer, I worked as a sales and marketing intern with Pure Distilling, a craft spirits company based in Colorado Springs. Pure Distilling is a veteran-owned and all-natural company based in Colorado Springs that launched this past winter. In this role, I supported the planning and execution of brand activations, tastings, and community events, helping to increase local visibility and strengthen customer relationships. I assisted in developing engaging social media content, coordinated with vendors and partners, and contributed to creative promotional strategies that aligned with the company's brand identity. Through this experience, I gained hands-on insight into the beverage industry, honed my communication and organizational skills, and learned how to adapt quickly in a fast-paced, customer-facing environment.

IR56 Homeward Pikes Peak, Colorado Springs, CO

Student Intern: Fidelia Cosgrove '26
Major: Sociology

This summer, I had the opportunity to work with Homeward Pikes Peak (HPP). The organization provides housing, recovery, and supportive services to individuals and families who are experiencing homelessness and substance use disorders in the Colorado Springs area. The services include three sober living homes, a permanent supportive housing complex, state voucher case management, clinical programs, and street outreach. In my role, I worked in the development department, helping organize and find sponsors for an upcoming fundraising event, Sober Soiree. I supported the HPP's communication efforts by updating the website, managing social media platforms, drafting newsletters, and creating new marketing materials. I assisted in planning CEO Beth Roalstad's podcast, a Place for everyone. I also participated in street outreach efforts by distributing food, water, and hygiene products while offering individuals the housing surveys to help connect individuals with voucher eligibility. Additionally, I helped establish a client insight council which ensures that clients' voices inform decision-making and program improvements. This experience was deeply meaningful and is directly shaping my thesis, which will focus on community-based research for HPP on their outcomes of sober living programs. Beyond the professional growth, I am grateful for the relationships that I built and the opportunity to engage with the Colorado Springs community in such a meaningful way.

IR57 Sports Media Inc. in Severance, CO

Student Intern: Maximillian May ‘27
Major: Computer Science

This summer I completed a two-part internship focused on both development and cybersecurity. Initially, I worked on developing an AI voice agent platform that integrates multiple services including Twilio for telephony, OpenAI for conversational AI, and ElevenLabs for voice synthesis. During this project, I was building React components to handle user authentication, interfaces to select phone numbers, and creating dynamic components on a website, fetching and displaying user information. As for my second half of my internship, I transitioned into conducting comprehensive cybersecurity assessments on the company across multiple platforms, including login security, email websites, and database access points. I was able to identify critical vulnerabilities including brute force attack vectors, SQL injection opportunities, database vulnerabilities, and authentication weaknesses. In addition to this, I managed the company’s password control policies, implemented multi-factor authentication protocols, and performed penetration tests on web applications. Prior to this phase, my supervisor encouraged me to dedicate some time to pursue the eJPT (eLearnSecurity Junior Penetration Tester) certification, which I successfully obtained. This dual experience helped me grow both my software development and real-world cybersecurity skills, demonstrating how security concerns must be integrated throughout the entirety of the software development lifecycle.

IR58 Seattle Children's Research Institute (SCRI), Aitchison Lab, Seattle, WA

Student Intern: Satchel Bell ‘27
Major: Molecular Biology and Dance Double Major

In the wake of Covid-19, pandemic preparedness is an urgent priority. Factors such as, travel, urbanization, climate change, and increased zoonotic contact have increased the dangerous risk of infectious disease. How are we preparing for the next pandemic? A potent nanobody cocktail with synergistic effects! Single-domain antibodies (“nanobodies”) derived from the variable region of camelid heavy-chain only antibody variants have proven to be widely useful tools for research, therapeutic, and diagnostic applications. This summer, while interning in the Aitchison Lab at SCRI, I worked both computationally and in the wet lab, researching a therapy designed to neutralize betacoronaviruses. I was tasked with understanding important characteristics of synergy between MERS (Middle East Respiratory Syndrome) nanobodies. Synergy when binding to a coronavirus spike protein is important because it increases the potency of the drug, extremely limits viral escape potential, and makes the drug novel. Through my research, I quantified and computationally modeled nanobody synergy, identifying potential nanobodies for use in the final therapy. Currently the Aitchison lab is performing another round of experiments to better understand the ideal nanobodies for the drug and will be publishing their most recent findings from the last year.

IR59 Campfire Seattle’s Camp Sealth, Vashon Island, WA

Student Intern: Abby Goodfried ‘26
Major: Political Science and Environmental Studies

This summer I had the opportunity to work at Camp Sealth, a youth program located on Vashon Island in Washington State. I worked as a Unit Leader where I supervised fifteen staff and eighty campers weekly. In this role I supported the emotional and physical wellbeing of campers, provided weekly feedback to counselors, and

coordinated the scheduling and logistics of activities. I attended Camp Sealth as a camper for seven years and have worked there since 2021 in a variety of roles, from dishwasher to counselor to now supervisor. It has been an honor to help provide campers the same transformative experience I received as a child and assist staff as they navigate the role of counselor. Camp Sealth aims to help connect young people to the outdoors, each other, and themselves. The CampFire organization is particularly dedicated to providing children with limited access to nature the opportunity to experience outdoor education. In the role of Unit Leader I gained valuable supervisory experience, learning how to effectively provide feedback and support the growth of staff. While working in this position I was also able to continue to gain experience working with children, navigating difficult situations while supporting their learning and ensuring their safety. I am so grateful for the opportunity to grow as a leader while giving back to a community that has had such a meaningful impact on my life.

IR60 Rocky Mountain Rivers in Gothic, CO

Student Intern: Havalin Haskell ‘26
Major: Environmental Studies

This summer, I had the privilege of interning with Rocky Mountain Rivers (RMR), a conservation non-profit in Gothic, Colorado, founded from five decades of pioneering stream ecology research at the Rocky Mountain Biological Laboratory. RMR protects Colorado headwaters by safeguarding non-consumptive instream flow rights while fostering education, mentorship, and community around river stewardship. My work centered on communications and outreach: shaping the brand narrative, drafting a strategic plan, building an initial website, writing newsletters, and designing a social media strategy with original content. I also joined the stream ecology team in the field to capture photos and stories that connected science to our mission. This experience expanded my environmental education by blending my love of writing and communication with conservation work, especially in the realm of non-profit environmental marketing—an area I hadn’t explored at Colorado College. Contributing to an organization rooted in the rivers and community that have shaped my path was both personally and professionally meaningful, and offered the rare opportunity to help build a conservation non-profit from the ground up.

IR61 Pueblo County Combined Courts, Pueblo, CO

Student Intern: Mary Oswald ‘27
Major: Environmental Studies and Philosophy

This summer, I had the opportunity to work closely with a Colorado College Alum, along with several other judges at Pueblo Combined Courts. This internship provided me with an immersive introduction to the legal system and the chance to gain hands-on experience. Within my time at Pueblo Combined Courts, I observed various court procedures ranging in complexity, while also meeting with a range of lawyers from public defenders to district attorneys. I was also privileged to meet with a Colorado Supreme Court justice, who explained the philosophy behind decision-making at the state level. Outside of the courthouse, I toured intake, detention facilities, and youth intake centers, where I viewed how the judicial system functions on every stage. Through this experience, I deepened my will to practice law and gained invaluable mentors.

IR62 Authentic Element in Copenhagen, Denmark (Remote)

Student Intern: Ruben Margolis ‘26
Major: Psychology

I interned this summer at a private business called “Authentic Element” that is based in Copenhagen, Denmark. My employer, Anelia, is a well-trained therapist who is very passionate about incorporating several different psychological approaches into her work. These include, but are not limited to, trauma healing, somatic attachment therapy, and parts work/internal family systems. She also delves into more holistic approaches, such as energy healing and breathwork, which she holds retreats for. I learned a lot about all these techniques by reading the transcripts of therapy sessions, and taking SOAP notes on them. This note-taking style is common among therapists, and breaks down the session into “Subjective, Objective, Assessment, and Plan” parts. When I wasn’t doing this, I strengthened my skills in psychoeducation by researching information on psychological methods related to her work. I then created social media content with this information to promote engagement among clientele and further develop her brand. This internship felt like a very mutually benefiting experience, as I was constantly learning about a field I’m interested in while helping promote her business.

IR63 St. Louis County Executive's Office, St. Louis, Missouri

Student Intern: Clayton Seeger ‘27
Major: Political Science

I had the privilege to intern in St. Louis County Executive Sam Page’s office. Working under the County Executive gave me opportunities to explore a variety of county departments. I learned the full legislative process by assisting the legislative liaison with the development of laws and following them through passage at County Council meetings. My research skills were greatly improved by reviewing policies of other counties and the policy recommendations of various interest groups. A week of my internship was spent with the Department of Revenue assisting seniors complete online property tax applications which was challenging but improved my customer service skills. I also had the opportunity to watch a deposition with the County Counselor’s office that inspired me and informed my views about the Justice System. Another illuminating aspect of my internship were tours through different departments such as the Spirit of St. Louis Airport, County Police Station, and County Justice center. These experiences taught me operational aspects of local institutions and the various ways they affected my community. The internship indicated the incredible importance of local government and that active participation in local government is highly necessary for community improvement.

IR64 Protagonist Therapeutics, Newark, CA

Student Intern: Nalani Wood ‘26
Major: Organismal Biology and Ecology Major

This summer I interned at Protagonist Therapeutics, a clinical stage biopharmaceutical company based in Newark, California. Their research and development department focuses on discovering and developing peptide drugs treating a variety of indications, from polycythemia vera to obesity. Two drugs, rusfertide which treats rare blood disorder polycythemia vera, and ikotrokinra, an oral IL-23 drug, are in the midst of the new drug approval phase with the FDA. Both drugs have been sold to larger partners, rusfertide to Takeda and icotrokinra to Johnson and Johnson. The main focuses in the lab currently are PN477, a triple agonist obesity drug, and IL-17 treatments for psoriasis. I had the opportunity to shadow multiple departments. I started my internship working with the Intellectual Property department, helping my manager Bill search for prior art as well as working independently on a project exploring the USPTO guidelines for AI in patent law and recent AI patent

law cases. I also worked in the biology department, mostly helping the staff scientists run assays and seed cells. My role in the biology department was very simple, but the repetitive work in the lab really enhanced my lab skills and I got to learn so much about the realm of obesity drugs by asking questions during experiments.

IR65 Biasly, Sandy, Utah + TurnUp Activism, Cambridge, MA

Student Intern: Abi Anderson ‘26
Major: Political Science

I had the privilege of remotely interning at Biasly and TurnUp Activism concurrently this summer. Biasly is a startup that analyzes bias in political news, with the help of industry-leading AI tools and a team of writers and political analysts. I worked as a writing intern where I primarily assessed the reliability of news outlets and wrote blog posts on media literacy and problems in journalism. I researched topics like Nazi propaganda and global unethical reporting practices, and did deep dives into journalistic trends from sources like The New York Timesand The Hill. I also took Biasly’s journalism course and made reports on the accuracy of the company’s AI bias checker. At TurnUp, I completed educational activism tasks and attended lectures from changemakers in public policy. Mainly, I spent my time working with grassroots advocacy organizations. Some highlights from grassroots: Phone-banking for Zohran Mamdani’s mayoral campaign, doing voter registration outreach, and (my favorite!) deep canvassing with Rural Ground Game. Having the opportunity to work in two very different partsof the political science field was invaluable. I’m excited to apply my new knowledge about political media and advocacy strategies this semester!

IR66 Applications of Bioacoustics Monitoring in Sierra Nevada Nocturnal Vocalizing Communities at UW Madison, Madison, Wisconsin

Student Intern: Lily Frost ‘26
Major: Organismal Biology and Ecology

This summer I worked with Dr. McGinn assisting in the data vetting process of a large bio-acoustic monitoring study based out of UW Madison. Fire is an important and natural disturbance process which drives biodiversity and succession events. Fire suppression practices in Western North America have led to larger, more destructive wildfire seasons. In the Sierra Nevada mountains of California, as these fires increase in size and severity, spotted owls and many other nocturnal avian species face potential local and widespread extinction. In this long-term study which began in 2018, Autonomous Recording Units (ARUs) were deployed across the Sierra Nevada and Southern Cascade montane regions to survey vocalizing communities. Species detections were done using BirdNET, a deep neural network, we vetted these AI “observations” manually. Next, we will ask how habitat heterogeneity and species richness of vocalizing communities varies in recently burned and unburned areas.

NON-PRESENTATION INTERNSHIP SITES OF FUNDING RECIPIENTS

Senate Finance Committee and Senator Ron Wyden & Politico in Washington, D.C.

Student Intern: Veronica Bianco ‘27
Major: Political Science

As a Press Intern for the Senate Finance Committee and Senator Ron Wyden's personal office, I wrote press releases, compiled issue-specific lists of reporters for senior staff, produces daily reports of all mentions of the Senator in the news, attended press conferences and rallies with the Senator, and helped with administrative tasks around the office. I even worked overnight at the Capitol while Senators were voting on amendments to the reconciliation bill. Being a part of a highly visible press team during such an unprecedented time in the federal legislature allowed me to see the ins and outs of political communication and witness the behind-the-scenes of one of the most powerful lawmaking bodies in the world. It was an honor to serve the people of my home state and I feel lucky to have gotten to work with and learn from the dedicated public servants in Senator Wyden's office. Before I started working as a Press Intern, I participated in Politico's summer journalism institute, a two-week program for 17 student journalists at Politico's headquarters in Arlington, Virginia. I met with countless Politico journalists, toured other newsrooms, and helped write Politico's daily Florida newsletter. I learned valuable lessons about the journalism industry and the importance of objective political reporting. The things I learned ad the connections I made will no doubt help me navigate the industry post-graduation.

The Western Organization for People Living with HIV/AIDS in Mumias, Kenya

Student Intern: Leila Campbell ‘27
Major: Business, Economics & Societies

This summer, along with 5 other interns from Colorado College, I spent 8 weeks in Mumias, Kenya. In this internship, I traveled to various support groups around western Kenya, learned about table banking systems, and saw many successful examples of economic empowerment. I volunteered with a local Level III hospital in Mumias, collecting blood, urine and occasionally fecal samples from patients and testing the samples for malaria, blood type, pregnancy and more. I attended and helped fund a Moonlight pop up, which was HIV testing for key populations like female sex workers and LGBTQ+. There was a Jiggers Campaign held during my time in Kenya, in which individuals came to get jiggers (a parasitic fly that burrows into the feet) removed. I also learned about local agriculture practices, farm fishing in Lake Victoria, and got to help with planting and harvesting lettuce. On a more personal level, I got the privilege of learning how to make some traditional foods such as chapati, prepare tilapia fish and chickens, and seeing the cultural approach to religion and faith in Kenya.

BeSomeone in Seattle, WA

Student Intern: Frances Hansot ‘27
Major: Psychology

During my internship at BeSomeone, I completed an intensive training program to become a certified life coach where I learned strategies in goal setting, active listening, conflict resolution, and motivational communication. This training prepared me to work closely with youth from local schools and community programs, many of whom faced challenges such as unstable home environments, academic struggles, and limited access to mentorship. I conducted one-on-one coaching sessions helping kids identify their strengths, build resilience, and develop actionable plans to achieve their goals. The experience not only refined my ability to connect with young people but also deepened my understanding of the psychological and social factors that influence motivation and behavior.

Western Organization for People Living with HIV/AIDS in Mumias, Kenya

Student Intern: Leah Rubner ‘27
Major: Molecular Biology major and Global Health minor

This summer, I had the opportunity to travel to Kenya to work with the Western Organization for People Living with HIV/AIDS (WOPLAH). WOPLAH is a grassroots non-profit that supports community members living with HIV through various sustainable practices. As an intern, I volunteered regularly at the local clinic, edited and prepared documents and presentations to be used by WOPLAH, searched for potential partnerships, and helped write grant proposals. Perhaps the most impactful is the time I spend working with local community members living positively with HIV/AIDS. I engaged with numerous youth and community groups that aim to reduce stigma and increase education surrounding HIV/AIDS through play, dance, and dialogue. My time with WOPLAH has taught and continues to teach me invaluable lessons surrounding health and community. I have witnessed firsthand the severe and consequential impacts of global health inequities on local populations. I have also learned that collective community support, whether in the form of counseling, medication reminders, group dialogues, or childcare, has an exponential impact on members' health and well-being. I will always be grateful for the time I spent in Kenya through this internship, and I hope to return in the future.

Cottonwood Environmental Law Center in Bozeman, MT

Student Intern: Sylvie Stiffler ‘27
Major: Environmental Studies

After a Google Search of environmental law firms in the West led me to the Cottonwood’s website and I read, “Cottonwood is a group of free-thinking rabble rousers dedicated to protecting the people, forests, water, and wildlife of the American West, and having fun doing it,” I couldn’t help but want to work there. Based in Bozeman and in their fifteenth year, Cottonwood’s work as a nonprofit is expansive, ranging from filing Clean Water Act lawsuits to developing citizen ballot initiatives that tie together affordable housing and water conservation. My internship was very fluid, and no two days looked the same. My longer-term projects were organizing a fundraising gala, developing a case tracker, and creating standalone one-page overviews of all of Cottonwood’s current cases. Though sometimes I was wading up the Gallatin River to document treated sewage flowing into the water, sometimes I was attending hearings at the federal courthouse, and sometimes I was meeting potential donors.

Verdant Associates in Berkeley, CA

Student Intern: Senya Urbom ‘26
Major: Economics

This summer, I interned with Verdant Associates, a woman-owned consulting firm specializing in clean and renewable energy. Verdant’s mission is to support the transition to a resilient and equitable low-carbon future through robust, transparent, and unbiased analysis. I contributed to a variety of projects for clients such as Commonwealth Edison, Pacific Gas & Electric, and SoCal Gas, evaluating the impact of—and barriers to participation in—their clean energy equity-forward programs. My day-to-day work included data cleaning, coding surveys, developing survey instruments, conducting data analysis, and presenting findings in memos. I also co-authored a conference paper, *Powering Down Debt: A Meta-Analysis of Personalized Case Management Programs Tackling the Affordability Crisis.* Along the way, I independently expanded my coding skills through online courses, including Qualtrics Advanced Survey Coding and Data Science for Economists: R Data Cleaning & Wrangling, Web Scraping, and Regression Analysis.

UW Health Department of Orthopedics and Rehab Medicine, Madison, WI

Student Intern: Gabriela Lues ‘27
Major: Psychology and Minor in Human Biology and Kinesiology

During my internship with the UW Health Department of Orthopedics and Rehabilitation Medicine, I had the opportunity to work virtually with Dr. Watson and Dr. Haraldsdottir on a psychology study examining the effects of mindfulness interventions on psychosocial factors such as kinesiophobia and fear of reinjury in athletes following ACL reconstruction. My work involved analyzing data, creating charts and tables, writing sections in psychological research paper format, and developing a final presentation and abstract to summarize the project. I also participated in biweekly team meetings, which gave me valuable insight into the collaborative nature of research. This experience not only strengthened my technical skills in data analysis and scientific writing but also allowed me to engage meaningfully in the research process and gain confidence working in a professional lab setting.

Mi Familia Vota in Denver, CO

Student Intern: Simone Colburn ‘27
Major: Southwest Studies

Over the past 10 weeks, I interned with Mi Familia Vota Colorado (MFV CO), the Colorado chapter of a national non-profit that advocates for voting, reproductive, immigrant, and workers' rights, promotes accessible healthcare, and fights for environmental justice. My time with MFV not only far surpassed my expectations as a mode to develop policy, community organizing, and non-profit management skills, but also resulted in a deep sense of fulfilment; I was able to work with the team on projects that I believe truly work toward a more just state and country. As an active participant in weekly team meetings, monthly national meeting presenter, and coalition representative, I helped grow MFV’s network, form new partnerships, and make progress toward their 2025 agenda. Additional asynchronous work resulted in completed grants, public written comments for local policy decisions, master election power maps, text campaigns, and op-eds. My primary project this summer was the development of a 5-month health-focused civic engagement fellowship for youth. I took the lead in designing a curriculum for the fellowship’s five social justice modules and an outreach plan to get the program up and running this fall.

Under the Radar Magazine in Lexington, VA

Student Intern: Issa Nasatir ‘26
Major: Literature

Under the Radar is a music publication that covers anything from the next new star to a 90s rock band’s resurgence. It is one of the last music magazines still in print. As an intern, I wrote dozens of news segments, album reviews, and edited other writers’ reviews and interviews. I also handled all of the magazine’s social media platforms.
This opportunity was very special to me because I was able to experience what it was like to work for an actual publication. I was given the privilege of writing about embargoed announcements and unreleased albums from some of my favorite artists, as well as managing the website. On the technical side, I learned how to operate most efficiently under a deadline while multi-tasking multiple roles for the publication. Writing under senior writers and being exposed to their writing was extremely formative for me and opened my eyes to various styles and techniques to incorporate into my writing.

Xenophon Strategies, Washington, DC

Student Intern: Yurii Hrytsak ’27
Major: Political Science

This summer I interned at Xenophon Strategies, a public relations firm in Washington, DC. I worked on projects that blended policy and communication, from drafting memos and tracking legislation to researching funding opportunities and supporting outreach campaigns. I gained experience turning complex information into clear messages and saw how strategic communication shapes the way ideas land with different audiences. The internship sharpened my research and writing skills and gave me a clearer sense of how I want to build a career that combines political science and communications.

CARE in Washington, D.C.

Student Intern: Ava McCormick
Major: Business, Economics and Society

This summer, I worked as a Government Relations Intern at CARE, a nonprofit based in Washington, D.C. My primary responsibility was preparing materials and background information for meetings with congressional offices, which gave me valuable insight into how policy discussions unfold on Capitol Hill. In addition to this work, I took on an individual project where I collected and crafted narratives from CARE's beneficiaries around the world. These stories were shared with members of Congress to help humanize complex issues and demonstrate the real-world impact of U.S. foreign assistance. These stories were incredibly impactful to work on, and gave me so much perspective to how U.S. Foreign aid benefits others. The experience not only strengthened my research and writing skills but also deepened my understanding of how personal storytelling can be a powerful tool in advocacy and policymaking. I got to meet some incredible people this summer, many of whom I am still in touch with. I am so grateful for this opportunity!

Connor Liljestrom, Jackson, WY

Student Intern: Owen Lewis ' 27
Majors: BSOC, Art Studio

This summer, I had the unique opportunity to work alongside contemporary artist Connor Liljestrom, where I combined hands-on creative exploration with exposure to the business side of the art world. In the studio, I experimented with a variety of mediums and began building my own portfolio, focusing on creating authentically for myself and allowing the process to guide me rather than trying to produce work for others' expectations. This personal journey helped me see art as both a form of self-expression and discovery. This allowed me to approach creativity with openness and curiosity, turning each piece into a journey of exploration rather than a finished product for external validation. At the same time, I gained insight into the entrepreneurial success behind an artist's career, learning about media marketing, brand building, and the financial considerations that sustain a creative business. By blending artistic growth with business awareness, this experience gave me a new appreciation for how creativity and strategy intersect—and how both are essential to building a meaningful and sustainable career.

Texas Metroplex Institute for Sports Medicine and Orthopedic Surgery, Dallas, TX and SUNY Downstate Health Sciences University, Brooklyn, NY

Student Intern: Jake Moshang '27
Major: Molecular Biology

This summer, I worked two internships, one with a sports medicine clinic and one at a pathology research lab. I began in Dallas, Texas, where I had the opportunity to shadow at Texas Metroplex Institute (TMI) behind esteemed physical therapists and orthopedic surgeon Dr. Bill Robertson. TMI works as both a clinic and a physical therapy sports medicine facility, allowing me the unique experience of seeing all sides to this field of orthopedics and sports medicine. I accompanied Dr. Robertson as he interviewed, diagnosed, and treated various patients, as well as performed numerous surgeries, including full ACL reconstructions, hip joint replacements, rotator cuff repairs, and shoulder joint replacements. Additionally, I was able to shadow physical

therapists at TMI to understand the process of rehabilitation, specifically looking at force plates to see the applications of quantifying recovery from injuries. After my time at TMI, I made my way to Brooklyn, NY, to intern at SUNY Downstate Health Sciences University to conduct research with Dr. Ivan Hernandez and Dr. Gloria Baena Caldas in the Department of Pathology. I assisted in performing immunofluorescence of mouse membranes and handling lab mice. My experience this summer has helped me to learn a lot about orthopedics and research lab skills.

San Francisco Mime Troupe in San Francisco, CA

Student Intern: Kass Ullmann ‘27
Major: Studio Art: Design Concentration

This past summer I interned for the San Francisco Mime Troupe (SFMT) in San Francisco, California. With the new administration came a lot of grant cuts within the arts, especially theatre. The Internship Funding Grant that was provided through Colorado College allowed me to support the SFMT as an unpaid intern. I spent my summer working under a very inspiring woman, Keiko Otake, who taught me so much about sewing and garment construction, but also about my own future and life. She would work with me on making costumes for SFMT from 9 am - 5 pm, and then go to her own theatre company and perform plays in front of hundreds of people that same night from 7 pm - 10 pm. This insane work schedule was something Keiko had been doing for a while, as you had to work many hours as an artist to scrape by in such a place like San Francisco. This helped me better equip myself for my future as an artist and designer, and put into perspective what my own schedule might look like. Throughout my months there I gained a very strong perspective on my future, and I also gained a lot of skills regarding garment construction. For this SFMT season, Keiko and I did a lot of pulling from stock for the costumes because SFMT couldn’t afford to thrift the costumes or even spend a lot of money buying fabrics to build costumes as they normally would. This meant that I spent a lot of time altering pulled garments from their stock and either adding or subtracting measurements to fit the actors. I was lucky enough to make a denim jacket from scratch which Keiko gave me a lot of freedom in how I wanted to make it. I learned a lot this summer from my internship at SFMT and will never forget the relationship I developed with Keiko!

Food to Power in Colorado Springs, CO

Student intern: Josefina Rodriguez Poggio '27
Major: Environmental Science

During my summer at Food to Power, a local nonprofit based in the Hillside neighborhood, I worked as a Farming and Food Access Intern supporting a wide range of programs, from the weekly No-Cost Grocery distribution to farm operations, volunteer days, and the farmers’ market. Even with a weekly routine, each day offered opportunities to challenge my skills and learn from the community. Food to Power serves as a hub and being part of the staff for a summer allowed me to meet new people almost every day and better understand both the challenges that come with addressing access to fresh and nutritious food for all. Along the way, I gained confidence in my farming skills, strengthened my professionalism in many ways, and witnessed the adaptability and resilience required to run nonprofit programs. I am extremely grateful for the opportunity to learn from the dedicated and caring team at Food to Power, and I would like to thank the Colorado College Career Center for making this meaningful experience possible, as well as my three fellow interns, who brought so much fun and support to my summer.

STaR (Student Trauma and Resuscitation Research Program) in Atlanta, GA

Student Intern: Asher Todd-Taraday ‘26
Major: Molecular Biology and Human Biology & Kinesiology and Biochemistry minor

Through the Student Trauma and Resuscitation Research (STaR) Program, I collaborated with trauma surgeons and researchers on clinical projects investigating whole blood transfusion, predictors of anastomotic failure, and nonoperative management of splenic injury. During my time, I authored three research papers with abstracts submitted to both the Eastern Association for the Surgery of Trauma (EAST) and the Western Trauma Association (WTA). In addition to gaining experience in clinical data analysis and manuscript preparation, I had the opportunity to scrub in and observe surgery across a number of surgical specialties, offering a firsthand perspective on how research directly informs patient care.

Carving Studio and Sculpture Center in West Rutland, VT

Student Intern: Ciara Wiesner '27
Major: Studio Art, Philosophy Minor

Tucked away in the valleys of southern Vermont lies The Carving Studio and Sculpture Center. The studio was founded with B amore and her crew of interns as an education space for stone carving. In 1989, the Studio moved into an old quarry goods store, which was part of the original Vermont marble company. Today, the studio has expanded to include two more old quarry buildings, which hold a carving air compressor system, a woodshop, a metal shop, and a gallery space. For three months over the summer, I had the opportunity to work as a resident intern alongside four other art students. I assisted in the general maintenance of the studio, such as cleaning communal areas, sharpening tools, moving large stones, and preparing coffee. This also gave me a stronger connection to the space that I, too, was using for my own work. I also assisted in the setup and instruction of the weekly classes, which stretched across a variety of mediums. I gained exposure on how to set up, use, and maintain the tools for stone, wood, and metal working. In assisting these classes, I met many working artists who gave me insight and advice for my future while also making some lifelong creative connections. The students in the classes also came from a variety of backgrounds, which made for fruitful conversations and creative discussions. At the studio, the instructors, students, and interns are given time to present their work in front of the people at the carving studio. I presented almost every week, which allowed me to practice talking about my work while learning from other presentations. At the end of my time at the carving studio, we had an intern gallery show where I was able to show the work I was making while working there and gained experience in curating a group show. Overall, working in a creative space gave me guidance in my future as an artist and allowed me to meet a variety of creative people whom I hope I will connect with soon.

United States Forest Service, Gifford Pinchot National Forest, WA and Friends of the Columbia Gorge, Hood River OR

Student Intern: Emily Taylor
Major: Environmental Studies

My role at the Forest Service this summer was within the aquatics department. I worked alongside the hydrologist and fish biologist for the south zone of the Gifford Pinchot National Forest. When I was assisting the hydrologist we would hike/bushwack in thick forest to assess streams and aquifers. We would discover if the streams were perennial, intermittent, or ephemeral in order to determine their logging buffer. When I would work alongside the fish biologist, we would backpack electrofish (shock) to find native fish species, which would then lead to the creation of a logging buffer or a request for a culvert removal. At my internship with Friends of the Columbia Gorge I worked alongside the advocacy and policy team. We would have weekly meetings about legislation, zoning, and land acquisition affecting the land trust. I would assist them in drafting, writing, their website, and social media as well as tabling events across the gorge area in Oregon.

No Game Found, Remote

Student Intern: Vladimir Palma ‘26
Major: Art Studio and Minor in Computer Science

This summer I interned as a 3D Character Artist at No Game Found, a small remote studio working on *Happy Chompers*, a game set to release on Steam, a video game distribution platform. I spent most of my time creating the game’s characters from concept to finish. The process included sculpting and optimizing the models, painting their textures, and getting them animation-ready so they could be added to the game engine. I worked closely with our programmers, designers, and concept artists to keep the characters consistent with the game’s visual identity. I also had the opportunity to contribute to the game outside of my role, including sharing ideas about how each character fit into the story and the look of the world. Seeing my work appear in test builds was one of the most exciting parts as I could finally see how my characters connected with the rest of the project. Video games have always been a big part of my life, and this internship gave me the chance to step away from work I did not feel passionate about and focus on creative work I have wanted to do for a long time. It challenged me to grow as both an artist and a collaborator. This experience has confirmed me that developing video games is the path I want to follow.

Icebreaker Labs, New York, NY

Student Intern: Charlie Rothschild ‘27
Major: Computer Science

This summer, I worked for a tech startup called Icebreaker Labs, a company based in New York City. The company is building a website, icebreaker.xyz, which aggregates users’ professional data and forms a network based on trust between users. I was employed as an Artificial Intelligence Engineer, working to implement various AI tools to increase company efficiency and analyze large quantities of data. I pulled and analyzed over 250,000 contacts from LinkedIn, allowing companies to search through potential candidates who have yet to interact with Icebreaker. I worked closely with the company founders and engineering team, working on bug fixes and identifying potential use cases for AI tools. Most importantly, I learned how to complete a variety of engineering tasks from start to finish, deploying a number of new features to the company website. I hope to continue my work with Icebreaker in the future and use AI to help expand the company’s value to the mainstream. I have learned so much from and am extremely grateful for the opportunity to work with the Icebreaker Team.

National Women’s Studies Association in Baltimore, MD

Student Intern: Ashley Paul ‘27
Major: Critical International Relations (Independently Designed Major)

The National Women’s Studies Association (NWSA), founded in 1977, is a leading nonprofit organization dedicated to advancing feminist scholarship and activism within Women’s, Gender, and Sexuality Studies. NWSA promotes the production and dissemination of knowledge through teaching, research, and service across academia and beyond, fostering inclusive, intersectional, and interdisciplinary dialogue and engagement. Serving educators, researchers, students, activists, and administrators, it facilitates connections through membership, both individual and institutional, provides access to digital hubs and constituency groups, supports professional development, hosts an annual conference, and administers awards, scholarships, and a peer-reviewed journal. My tasks focused on content creation by developing a comprehensive research calendar highlighting key holidays, observances, and historical anniversaries relevant to NWSA’s mission. Conducted in-depth research to provide historical and cultural context for each event and curated feminist scholarship, resources, and media to promote awareness, education, and advocacy. Additionally, I designed accompanying Instagram graphics to visually engage audiences and amplify the reach of each observance.

Exponential Impact in Colorado Springs, CO

Student Intern: Francisco Ortega '26
Major: Computer Science

As an intern at Exponential Impact, XI, I worked directly with startups in the Accelerator program and supported the XI team on a range of projects. I designed websites using tools like CSS, created informational flyers and documents, and conducted funding research on startups. I assisted with analyzing participant surveys, including researching potential investors and gathering contact information. Throughout the internship, I gained both technical and professional skills, specifically in web design, research, and project coordination. Some tasks were challenging, especially when I had to use unfamiliar platforms or wasn't sure where to start, but through these challenges it taught me how to problem solve, adapt quickly, and learn independently. This experience strengthened my ability to navigate new environments and deepened my understanding of startup companies and business operations.

3 Springs Community Farm, Bodega, CA

Student Intern: Eva Brookhart ‘27
Major: Organismal Biology and Ecology Major

This summer, I had the opportunity to work at 3 Springs Community Farm in West Sonoma County, California. This experience was not only educational in terms of learning how to farm organically, but it also gave me a firsthand understanding of what it takes to run a farm without relying on heavy machinery or chemical sprays. Tasks ranged from harvesting vegetables and herbs, weeding, bed preparation, and maintaining irrigation systems, to animal care, seeding, and transplanting crops into the field. However, every day was different. At the end of each week, we packed CSA boxes with fresh produce and delivered them to local residents in the Bay Area. One of the highlights of my time there was helping lead school groups in various farm activities. This became my favorite part of the experience. It felt meaningful to inspire kids to wonder about nature, connect with the earth and learn about where food comes from. Working within a sustainable food system and using ecology-based farming techniques deepened my passion for understanding nature, especially how it relates to food. It also deepened a desire to explore how we can cultivate land in ways that nourish both people and the environment, with minimal harm to the ecosystems we depend on.

Exponential Impact (XI) and Lady Fatima Center, Denver, CO

Student Intern: Yumna Ali ‘27
Major: Business, Economics, and Society

This past summer has been truly transformative for me, as I navigated dual internships in the finance sector with the Lady Fatima Center and Exponential Impact (XI) in Colorado. At the Lady Fatima Center, I had the opportunity to apply my academic knowledge in real-world situations by creating strategies to improve membership management, assisting in the collection of pledges for our annual community fundraiser—ultimately raising over $200,000, and managing backend tasks such as adding items for events in Square and addressing overdue payments. Simultaneously, my internship with Exponential Impact allowed me to delve into a variety of projects that further enriched my understanding of financial operations and community support. A key responsibility I had was to ensure all application materials for the Survive & Thrive Program were in a readable format. I also analyzed the financial records of applicant companies in order to gather necessary data for our Executive Committee review. This task included assessing each applicant's financial health and determining their eligibility for the CLIMBER credit enhancement program, designed to support higher-risk small businesses in Colorado. Overall, these experiences have enriched my academic journey at Colorado College, particularly in my Business, Economics, and Society courses. Now, I can approach complex business scenarios with a more analytical perspective. This summer has laid a strong foundation for my future career aspirations, instilling in me a deeper appreciation for the roles that both finance and entrepreneurship play within community development.

d:Matcha in Kyoto, Japan

Student Intern: Keiko Ito, 2026
Major: Independently Designed Major in Embodied Cognition

During my time at d:Matcha, a family-run matcha company in Japan, I took a deep dive into the world of Japanese green tea. d:Matcha is located in Kyoto Prefecture, in a small town called Wazuka, which has been producing high-quality ceremonial grade matcha for the last 800 years. As interns at d:Matcha, we took part in every process, from harvesting to weeding to packing to tea tours to business marketing. In the fields, I learned the strength and dedication it takes to physically harvest or prepare for harvest. Under the intense summer sun, where it often got to 100 degrees, we started at 6:30 am to avoid peak temperatures. In the tea packing rooms, precision, cleanliness, and mindfulness are required when handling anywhere from a few kilos to 100+ kilos a day. During our bi/triweekly tea lessons, I learned about the differences between sencha, gyokuro, matcha, the different cultivars of each, the historical developments of each, optimal brewing temperatures, and more. In the cafe during tea tours, I connected with customers from around the world—Saudi Arabi, the UK, Singapore, the US, Germany, Switzerland, France—over their love of Japanese green tea. I helped facilitate tea tastings, shared whisking techniques, local pottery, and the history of the region. I also participated in social media marketing, creating content for their Instagram as well as blog entries for their website. From learning hands-on in the fields, the tea packing rooms, the cafe, and the business marketing, I learned what dedication to the craft while honoring tradition looks like. I am very grateful for this once-in-a-lifetime experience!

Division of Biological and Biomedical Sciences at the University of Montana, Missoula, MT

Student Intern: Camille Sherrill ‘27
Major: Molecular Biology

This summer I had the opportunity to conduct hands-on research in a neuroscience lab at the University of Montana under Dr. Andrew Rau. My main project involved studying dendritic spines in mouse brains using confocal images of green fluorescent protein (GFP)-tagged neurons. I used a relatively novel open-source software system called SpineTool to produce clear and accurate 3D reconstructions of dendrite and spine segments. I used Anaconda Prompt to manage a Python-based environment and launch Jupyter Notebook, an online computing platform. This is where I did the majority of my work attempting to understand and effectively utilize SpineTool. This work is essential for developing reliable methods to cluster and categorize dendritic spines. One of the research goals is to determine whether certain genes that regulate receptor protein expression influence spine morphology and density. These changes may, in turn, affect synaptic function and plasticity, which are critical to processes such as long-term memory formation, learning, and emotional memory. This research could help inform important discoveries related to neuropsychiatric and neurodegenerative disorders. Assisting in this research provided me with an abundance of new skills, particularly in computer literacy through irreplaceable experiential learning. My assistance and analysis pipeline write-up will provide the lab’s research with guidelines on how to navigate this software and continue expanding on their findings.

Pearle Vision By Well-Edge Vision in San Antonio, TX

Student Intern: Jack Hilliard ‘27
Major: Molecular Biology

I had the chance to observe an optometrist in a private eye clinic in San Antonio, Texas, this summer. The clinic offers complete eye care services, such as routine vision exams, contact lens fittings, and ocular disease management. I watched patient sessions during my shadowing experience, which included everything from standard vision exams to the diagnosis and management of diseases like diabetic retinopathy, glaucoma, and dry eye syndrome. I discovered how optometrists evaluate the condition of the back of the eye using retinal

imaging, measure refractive error using a phoropter, and check ocular structures most predominantly the optic nerve using a slit lamp. Additionally, I learned how the doctor interacts with patients to discuss lifestyle variables that affect vision, explain eye health, and provide individualized treatment strategies. I gained a better appreciation of the significance of preventive eye care and the various roles an optometrist plays in a patient's overall health throughout my time at the clinic. I'm grateful for the opportunity to gain personal knowledge from a knowledgeable and kind optometrist.

Cedarbrook Veterinary Care in Snohomish, WA

Student Intern: Mariah Davis '27
Major: Organismal Biology & Ecology and Anthrozoology

As an intern at Cedarbrook Veterinary Care, I worked under the guidance of Dr. Hannah Mueller, a renowned doctor who works with both traditional and Western veterinary medicine approaches. Cedarbrook specializes in equine veterinary medicine and dentistry, while also providing alternative therapies such as acupuncture, chiropractic care, and bodywork to all species. Throughout my time at the clinic, I assisted with a variety of hands-on procedures and clinical responsibilities. These included lameness examinations, dentistry assistance, and acupuncture technician work. I developed practical technical skills under doctor supervision and learned through hands-on and narrative medicine. Beyond the technical experience such as blood draws and acupuncture assistance, I also gained a deeper understanding of differential diagnosis, animal behavior and handling, and the importance of client communication and doctor-client relationships in a clinical setting. As a single-doctor practice, Cedarbrook was a direct reflection of Dr. Hannah's whole-animal approach and her emphasis on integrative medicine, which gave me a unique opportunity to learn from the clients in a familiar setting. I felt fortunate for the opportunity to learn in an integrative, holistic large animal veterinary practice as veterinary medicine continues to trend toward small-animal corporate clinics.

Alliance for Citizen Engagement in Cambridge, MA

Student Intern: Grace Bean '26
Major: International Political Economy and Minor in Journalism, Global Health

This summer I interned for Alliance for Citizen Engagement, a nonprofit I worked for the previous summer as a marketing intern, writing the weekly newsletter and increasing click-through rates to their main website. As a returning research fellow, I worked under Ella Dennis as a Current Events Intern. I was responsible for producing a 250-500 word article every week on any topic of my choosing in the realm of current events. I went through the editorial process for each article, doing initial stages of research, getting my first draft approved, then receiving edits and final drafts published every week. We had weekly meetings as well to check in as a Current Events team, and initial training. I will be completing the Fall semester with ACE as well working as a Policy Brief and Research Intern.

UCLA Herbarium, Los Angeles, CA

Student Intern: Em Renetzky '27
Major: Ethnobotany, Environmental Studies Minor

Pressed Between Pages: A Summer in the Herbarium. "You are either a STEM person or a humanities person" is a comment I have often heard in discourse surrounding academia. However, I have always felt stuck between the two, yearning to exist in a space of conversation between both. This is why I chose to design my own major in ethnobotany. Ethnobotany serves as the scientific study of plants and their uses in various cultural contexts. However, when looking for a way to spend my summer, I feared I would have to choose between two huge parts of my world. I landed on working in the UCLA Herbarium under the curator Anthony Bangia. The UCLA Mathias Botanical Garden is a public garden, outdoor classroom, and research facility. They strive to not only assist academic inquiry and exploration but also to make education accessible to the public. Many of my courses here at CC have taught me the importance of reciprocity. I worked on many small organizational projects, from mounting specimens to updating databases, learning about the functionality and importance of Herbaria. However, two felt like they left a significant mark, and aligned with my interest in ethnobotany! First, I was tasked with going through an ethnobotanical collection on the herbal remedies of the Warao people from

Venezuela that had previously just been sitting idle on a shelf. I tracked down and read the 800+ page dissertation that accompanied it and organized the collection based on the Warao definitions of healing. This inspired my ideas of a potential structure and also got me thinking about how, as ethnobotanists, we organize and classify plants. Our current systems of nomenclature have many benefits- but also leave out many personal narratives. I can now happily say the collection and information on the Warao is no longer on the back shelf. I was then tasked with creating a new protocol for digitizing the collection- making the specimen sheets available to people all over. My boss and I chose a few databases to use as a reference, but I am still left pondering questions of classification and what knowledge is allowed to be uplifted in the world of Western science. The summer at UCLA taught me that preserving plants is not only about pressing specimens or updating databases, but is about preserving stories, relationships, and different modalities of knowledge. I now have a deeper conviction that ethnobotany lives in the spaces between what we call science and story.

COLORADO COLLEGE

Office of the Dean of the College

Summer Faculty-Student Collaborative Research and Internship Funding