

Brandon Alexander (chemistry major)
Faculty Sponsor: Scott Mason, Department of Chemistry
*Iron Carbonyl Dianions Stabilized with the Indium tris(3,5-dimethyl)-1 Pyrazolylborate Moiety*
Two metal carbonyl dianion complexes have been coordinated to the Indium tris(3,5-dimethyl)-1 Pyrazolylborate Moiety. Using IR spectroscopy, the metal carbonyl complexes can be monitored through each reaction by the change of their respective carbonyl bands. Starting with the neutral parent of each, synthesizing the ethylenediamine dianion, and then synthesizing the final complex using the one pot reaction as indicated by Reger, et. al., the synthesis of these new metal complexes show interesting geometry and expand the bonding capabilities of the Indium tris(3,5-dimethyl)-1 Pyrazolylborate Moiety.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Ellen Avsec (English: writing major)
Faculty Sponsor: Frank Tascone, Department of English
*Weblogging as a Tool for Education*
Weblogs can influence education and literacy development. To prepare my SCE, I researched how blogs can be used as educational tools. By launching my own blog, I was granted the opportunity to enhance my literacy development outside of the classroom walls. Just as businesses adapt to technological advances, students must also understand information technologies for literacy development, despite the few implications that exist within the blogosphere.
PM Poster Presentations – Bracy Hall

Megan (Self) Berkey (communication major)
Faculty Sponsor: Jamie Capuzza, Department of Communication
*How Can Anyone Take This Religion Seriously?: Major Religions in Animated Satirical Television*
Satire has existed in literary forms for centuries. Moving through genres to be the most prominently disseminated by the mass media; satire has since made its primary home on television. Satire has been found to increase viewers’ knowledge concerning political issues. As this genre becomes more prevalent throughout the television channel, it has increased its target to more than political messages. This study will examine the satirical messages on television concerning people or institutions belonging to major religions to uncover themes present within the rhetoric, analyzing the extent that rhetoric increases viewers’ knowledge as previously seen with political messages.
PM Poster Presentations – Bracy Hall
Andrew Bonath (history major)
Faculty Sponsor: Theresa Davis, Department of History
*Professional Athletes and Community Care*
I have researched three of the leading community building programs as supported by professional athletes and professional sports leagues. In an attempt to erase the stereotype of the “over paid, over appreciated, and narcissistic athlete”, I conducted research on the NFL and United Way program, the NBA CARES program, and Lance Armstrong’s LIVESTRONG campaign. Through analyzing the data I found, I learned that there is an abundance of professional athletes that give their time to the communities around them. My hope is that this piece can inspire others to do the same and also help to alleviate the negative connotation that people have for most professional athletes.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Michael Border (biochemistry major)
Faculty Sponsor: Jeff Draves, Department of Chemistry
*Investigation of Whisker-Reinforced Ceramic Scaffolds*
A study was completed to assess the structural properties of ceramic materials designed for use in surgical procedures. These ceramic materials are used to create surgical "scaffolds" which are implanted into bone defects to facilitate tissue regeneration. Using electron microscopy, investigators were successful in analyzing the physical properties of the ceramic material, including porosity and particle distribution. Based upon these findings, it has been proposed that the integration of whisker reinforcement could increase the structural properties of the material. This proposal can prove significant in amplifying patient care by enhancing bone regeneration using these surgical scaffolds.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Kyle Brown, Scott Kunsman and Travis Papay (information systems majors)
Faculty Sponsor: Clark Archer, Department of Computer Science and Information Systems
*A Computer-Assisted Dynamic Learning Environment for the 4-H Clubs*
A test generating system for members of the 4-H Club to assist them with the learning and studying of material from the 4-H Horsemanship Manual. The system provides a dynamic progressive learning environment with regards to the member’s skill level and age.
PM Poster Presentations – Bracy Hall

Mara Bowman and Olivia Myers (biology majors)
Faculty Sponsor: Kim Risley, Department of Biology
*Showerheads and the Presence of Human Opportunistic Pathogens*
Human opportunistic pathogens and environmental bacteria are known to proliferate in showering areas, but very little is known about their existence in showerheads. Plastic showerheads are especially good for bacterial growth because biofilms form easily on this surface, under optimal growth condition: warm, damp and dark. Two samples were taken from two different showerheads, and one microbe from each sample was subject to biochemical testing and DNA sequencing. Testing allowed the identifications of genera of the organisms found in our study, but not the exact species. The genera of the organisms were Bacillus spp. and Xanthomona spp., both which include opportunistic pathogens.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery
Shannon Crabtree, Josiah Gantz and Dana Strumbly (biology majors)
Faculty Sponsor: Kim Risley, Department of Biology

*What’s Hiding in Your Washing Machine?*
Washing machines in Bica-Ross and Miller dormitories were swabbed to determine microbial growth on the internal plastic tumblers. It was hypothesized that swabbing multiple washing machines would produce diverse bacterial growth, including possibly pathogenic fecal coliforms. To test the hypothesis, two colonies of bacteria were cultured, isolated, and subjected to a regimen of tests for characterization, including DNA analysis. Results showed two diverse bacterial colonies, one of which could be concluded to be opportunistically pathogenic, supporting the hypothesis. Environmental bacteria of the genus *Staphylococcus* was identified, along with the opportunistically pathogenic *Stomatococcus mucilaginosus*.

AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Emily Ebie (early childhood education major)
Faculty Sponsor: Shawn DiNarda Watters, Department of Education

*Should Superhero Play be Discouraged in the Classroom and on the Playground?*
As an elementary teacher, understanding where in school and what types of influences young children are exposed to when engaging in superhero play is important. I surveyed college students and interviewed two teachers and a school principal from an elementary school. A group of seven to eight year olds were observed during recess. The results indicate that the physical aspect of superhero play shouldn’t be allowed in the classroom, but should be allowed on the playground. Teachers can use the concept of superhero play to teach cooperation and conflict resolution; discuss good and bad characteristics of superheroes; and encourage journal writing.

AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Alyssa Hamilton (art and Japanese major)
Faculty Sponsor: Joel Collins, Department of Art

*Emotion*
My intentions for this project were to capture human emotions without distracting elements such as hair and gender. In order to make the figures effective, I needed to be accurate with human anatomy. To achieve a specific emotion, I used color, expression, body language, and other techniques. For the most part, I used one-two acrylic colors that I watered down considerably. In this project, I learned that subtle expressions can be read in many different ways.

AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Alyssa Hamilton (Japanese and art major)
Faculty Sponsor: Hamako Furuhata-Turner, Department of Foreign Languages

*A Japanese Children’s Story*
In writing a children’s story in Japanese, I had to look up a lot of vocabulary and grammar. For the most part, I was able to use my Japanese dictionary and textbooks. When these sources were not helpful, I used online grammar guides and dictionaries. In this project, I was able to learn more about the language in its casual form.

PM Poster Presentations – Bracy Hall
Nichole Hare (art major)
Faculty Sponsor: Joel Collins, Department of Art
* A Portrait is Worth a Thousand Words
For my Senior Culminating Experience, I painted a series of portraits, and each one has its own “voice.” The color schemes are varied, and utilizing color psychology has helped me to select the appropriate colors for the emotion that I wanted the portrait to convey. I was greatly inspired by artists such as Rembrandt, Caravaggio and van Gogh. Not only have I learned more about human anatomy, but I have also expanded my knowledge of painting techniques and design concepts.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Erica Hyde (history major)
Faculty Sponsor: John Recchiuti, Department of History
* The Giant Panda and the Florida Panther: Their Chances of Survival
I researched animal conservation by looking at China’s giant panda and the Florida panther to see what these countries have done in the past and what they plan to do in the future to save these species. Today, both the giant panda and the Florida panther face the very real threat of extinction. To discover more about my topic I used primary, like the Endangered Species Act, and secondary sources. I discovered that, due to the economic benefits the giant panda brings China, the panda faces much better odds of survival than the Florida panther.
PM Poster Presentations – Bracy Hall

Nicole Jessen (athletic training major)
Faculty Sponsor: Marcelina Higgins, Department of Human Performance and Sport Business
* Ethical Issues in Athletic Training
I investigated the results of previous studies to determine the issues that are prominent in Athletic Training. I completed an annotated bibliography and a literature review. I found that there are specific issues involving treatment of athletes, prescription drugs, and concussion guidelines. In my report, I will explain that these are prominent in the Athletic Training profession today.
PM Poster Presentations – Bracy Hall

David Keifer (chemistry major)
Faculty Sponsor: Jeff Draves, Department of Chemistry
* Computational Study on the Combustion Mechanism of Ethane
The combustion of ethane is given by the chemical equation $2\text{C}_2\text{H}_6 + 7\text{O}_2 \rightarrow 4\text{CO}_2 + 6\text{H}_2\text{O}$. A computational study on this reaction was conducted in order to model a possible reaction mechanism. In this project, one reaction path was followed at primarily the MP2 level of theory with a 6-311* basis set. Details of the potential energy surface of this reaction will be discussed. This reaction is ubiquitous in industry and motorized transport, yet it is typically very energy-inefficient. Intensive study on it can give insight into methods of improving its efficiency.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery
Amber Kemmerer (communication major)
Faculty Sponsor: Jamie Capuzza, Department of Communication
Effects of Reality Dating Program Exposure on Perception
Reality Dating Programs, such as ABC’s The Bachelor, are one of the most popular types of television programming. This research tested how exposure to Reality Dating Programs affected college students’ perceptions of developing romantic relationships. An on-line, self-report survey was sent to 300 Mount Union students. Of the 300 students, 89 participated in this study. The survey was used to test and compare answers of the high and low reality dating program viewers. The results showed a significant difference between the high and low users, with high viewers more likely to engage in behaviors depicted on Reality Dating Programs.
PM Poster Presentations – Bracy Hall

Rachel Keyser (interdisciplinary studies major)
Faculty Sponsor: Joel Collins, Department of Art
Go Green
I have focused on the pros and cons of the “Going Green” campaign. My artwork consists of different views of our environment as if we were, or were not, to “go green”. In acrylic on canvas, I have demonstrated positive and negative extremes if the world were to “go green”, or not “go green” using and abstract style. On the negative view, I have shown how the earth could be destroyed and deserted. In strikes us as being sad, fearful, and destroyed. On the positive view, my paintings show life through bright colors, presenting a clean world.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Daniel King (biology major)
Faculty Sponsor: Mark McNaught, Department of Geology
The Evolution of Terrestrial Plants from Marine Environments
The Dingle Peninsula in Ireland holds Paleozoic sedimentary rocks and microfossils (250-542 million years old). Within the Dingle Peninsula is an Ordovician (475 million years old) rock formation known as the Annscaul Formation. Researchers from the University of Hawaii collected different rock types within the Annscaul Formation, each of which had been deposited at separate times during the Ordovician period. Every rock sample contains photosynthetic (plant) microfossils called palynomorphs. The amount of carbon-13 isotope within the palynomorphs, measured by mass spectrometry, indicates whether the microfossil was terrestrial or marine. This summer, we hope to discover transitional photosynthetic palynomorphs or photosynthetic species/ tissues that were at one time attempting to adapt from marine to terrestrial environments. This transition had implications for later Paleozoic climates.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Anna Kramer (Japanese major)
Faculty Sponsor: Hamako Furuha-Turner, Department of Foreign Languages
Japanese Sign Language Guide Translation
For this project, I translated a book about learning Japanese Sign Language from Japanese to English. I bought this guide in Japan, and also joined a study group for Japanese Sign Language while studying abroad there. The book demonstrates common signs found in JSL while also presenting aspects of the deaf community in Japan.
PM Poster Presentations – Bracy Hall
Andrew Loudon, Josiah Gantz (biology majors), Tod Rogers (environmental science major) and Kevin Ditchey (chemistry major)
Faculty Sponsor: Jeff Draves, Department of Chemistry
* Determination of Estrogens in Alliance, Ohio Water Sources by HPLC *
Oxidative stress, a known contributor of Alzheimer’s disease, refers to the damage of cellular components inflicted by free radicals. In current research, it has been shown that antioxidants play a key role in combating oxidative stress. The two antioxidants that were focused on in this study were N-acetyl cysteine, which is mainly found in protein rich foods, and Resveratrol, which is found in red grapes. To better understand the antioxidative roles of N-acetyl cysteine and Resveratrol, a superoxide scavenging assay was used to analyze these compounds individually and synergistically. Results of the antioxidative ability of these compounds will be presented.
PM Poster Presentations – Bracy Hall

Erin Manis (biology major)
Faculty Sponsor: Brandon Sheafor, Department of Biology
* Antimicrobial Properties of Bacteria from Hellbenders and Mudpuppies *
Batrachochytrium dendrobatidis is a pathogenic fungus that causes the amphibian disease chytridiomycosis and is a factor in worldwide amphibian declines. Hellbender salamanders and mudpuppies are the only two fully aquatic amphibians native to Ohio. Currently, hellbenders are endangered, possibly due to Batrachochytrium dendrobatidis, while mudpuppies have maintained stable populations. This provides an opportunity to compare the two species and examine ways that they resist fungal infection. Bacteria living on the skin of amphibians can provide protection from pathogens by excreting antimicrobial compounds. This study examines whether or not bacteria from hellbenders and mudpuppies differ in effectiveness in inhibiting Batrachochytrium dendrobatidis.
PM Poster Presentations – Bracy Hall

Paul McCartney (Japanese and mathematics major)
Faculty Sponsor: Hamako Furuhata-Turner, Department of Foreign Languages
* The World God Only Knows: A Translation *
I have translated a Japanese graphic novel called “The World God Only Knows.” The story follows the protagonist Katsuragi who helps a girl sent on a mission to collect souls of evildoers. I used several Japanese language texts and some internet sources for the translation. By translating this, I have become more aware of the differences between English and Japanese. They differ not only in sentence structure but also in what makes up a complete thought.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery
Caitlin Meyer, Jessica Warneke (biochemistry majors)  
Faculty Sponsor: Debra Boyd-Kimball, Department of Chemistry  
Evaluating the Synergistic Relationship Between Two Known Antioxidants  
Oxidative stress, a known contributor of Alzheimer’s disease, refers to the damage of cellular components inflicted by free radicals. In current research, it has been shown that antioxidants play a key role in combating oxidative stress. The two antioxidants that were focused on in this study were N-acetyl cysteine, which is mainly found in protein rich foods, and Resveratrol, which is found in red grapes. To better understand the antioxidative roles of N-acetyl cysteine and Resveratrol, a superoxide scavenging assay was used to analyze these compounds individually and synergistically. Results of the antioxidative ability of these compounds will be presented.  
PM Poster Presentations – Bracy Hall

Abby Millsaps (communication major)  
Faculty Sponsor: Jamie Capuzza, Department of Communication  
Grammar and Spelling Errors on Twitter: How Inaccuracy Affects an Organization’s Credibility  
This study identified how grammar and spelling errors in social media affect an organization’s credibility. A field experiment was used to test if inaccuracies on the social media site Twitter.com affected the perceived credibility of a fictitious organization. A control group received error-free tweets while the test group received tweets that contained a spelling or grammar error in every message. The research revealed that there is a difference in an organization’s credibility when errors are present. This study will help public relations practitioners prioritize their work and understand the expectations that could affect credibility when using social media.  
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Sarah Moffett (sociology major)  
Faculty Sponsor: Jeffery Hahn, Department of Sociology  
Conquering Role Conflict in a Retirement Community  
This research examines the conflicting job responsibilities assigned to a head social worker in a retirement community, which was observed during an internship. As a cost cutting measure, the head social worker was also assigned the duties of the activity director. This role conflict was resolved by converting role conflict into role strain. The social worker found a way to merge these two conflicting roles into one role. This role merger was possible, since her identity was rooted in her long term employment at the retirement community, rather than in her profession as a social worker.  
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery
Tiffany Morganstern (health education major)
Faculty Sponsor: Beth Canfield-Simbro, Department of Human Performance and Sport Business
*A Comparison of Sexually Transmitted Disease and Teen Pregnancy Rates*
Teen pregnancies and sexually transmitted infections are significant social problems in America. These problems occur everywhere around the country, but evidence has shown that they are more prevalent in rural areas, especially in the rural south. Through quantitative research methods I set out to determine if this trend was consistent in Ohio. By comparing Stark County, an urban county, and Wayne County, a rural county, evidence was found that did not support this trend. More sexually transmitted infections and teen pregnancies appeared in the urban county. The small sample size may have acted as an implication in this research.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Saleena Niehaus (biology major), Michael Border (biochemistry major) and Amanda Jurkoshek (biology and mathematics major)
Faculty Sponsor: Kim Risley, Department of Biology
*Purification and Isolation of Two Bacterial Species from Bagged Lettuce*
Our goal was to identify two types of bacteria from packages of iceberg lettuce. Bacteria were characterized through Gram and endospore stains, as well as through microbiological and biochemical tests. DNA from the bacteria was subjected to PCR for amplification and confirmed through gel electrophoresis. The results of the tests indicated that the species of bacteria belonged to the Pseudomonas family and the genus Flavobacterium, both of which are soil bacteria.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Anh Ngo (accounting major)
Faculty Sponsor: John Strefeler, Department of Economics, Accounting and Business Administration
*Tax Evasion - An International Phenomenon*
This research paper dealt with tax evasion issues and was prepared as a part of an Honors Project in Accounting. This issue has recently received national and international attention within the accounting and taxation professions. In 2008, tax evasion of American business’s offshore holdings was $100 billion in annual tax revenue. In Greece, about one-third of taxes were evaded. Tax evasion has become an issue of ethical behavior that many countries are facing in a modern society.
PM Poster Presentations – Bracy Hall

Desiree Palla (criminal justice major)
Faculty Sponsor: Rebecca Stevens, Department of Criminal Justice
*Real World Application of Classroom Material*
I will be recalling information taught in a variety of classes I have experienced here at Mount Union College and integrating it into my experience gained through my internship at the Akron Adult Parole Authority. It will help provide a real life application for information acquired in the classroom setting, while also helping to bridge the gap between the way ideas should work as taught in the classroom and the way they actually do in reality.
PM Poster Presentations – Bracy Hall
Kelli A. Paugh (art major)
Faculty Sponsor: Joel Collins, Department of Art

*Rust Belt Entropy*

In my paintings, I explore the entropy of everyday structures and locations that have declined as a result of declining industry. I incorporated mixed media and collaged elements that emphasize the natural and social decay of these locations. For much of this project, I traveled to nearby places and used photographs and sketches as references for my final paintings. In creating this series, I found I had to use unconventional methods to communicate with viewers. I combined more formal design elements with my interest in color theory along with the deeper psychological effects of photos and collaged matter.

AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Lisa Perko (health education major)
Faculty Sponsor: Beth Canfield-Simbro, Department of Human Performance and Sport Business

*More than Skin Deep: A Self-Image Seminar*

“More than Skin Deep” was a self-image seminar held on campus to promote a positive perception of one’s appearance. Self-image is a struggle both men and women face. Young adults are often too quick to judge themselves and others on image and beauty. This seminar was designed to show how the media portrays beauty and to become aware of strategies to promote positive self-perception. This was shown by documentations, videos and speakers. Technological advances, such as the ability to distort images through photo-shop, are giving society a false perception of beauty. One important message of the seminar was that everyone is beautiful in his/her own skin.

AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Jennifer Peteya (art and geology major)
Faculty Sponsor: Joel Collins, Department of Art

*Dinosaur Drawings*

The main goal of my Art SCE project was to create a series of charcoal drawings of my own depictions of more obscure dinosaurs in their possible natural habitats. Using a combination of drawing techniques, I tried to elicit a certain response from anyone who would view the projects. Techniques included manipulations of light and shade, perspective, and relative size. I wanted the viewer to be able to see drawings of dinosaurs he or she may never have heard of and learn a little bit about them through my drawings.

AM Poster Presentation – Cope Music Hall and Crandall Art Gallery
Joshua Pickens, Liz Hord (psychology majors), Erin Drotleff (biology major) and Jessica Irvin (business administration major)
Faculty Sponsor: Sarah Torok, Department of Psychology
AH Service Learning Project on Self Esteem, Identity Formation, and Peer Relationships with Middle School Girls
Our group of Mount Union students worked closely with the Alliance Middle school boys and girls. We asked them questions about bullying and other life situations that they would experience. We listened and recorded their responses. We hoped to discover firsthand if gender played a role in these situations and how each gender responded to them differently. Additionally we played team building exercises with them and paid close attention to their interactions with us and each other. Our results are forthcoming with the completion of the project.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Katie Pusateri (media studies major)
Faculty Sponsor: Jamie Capuzza, Department of Communication
How Public Relations Professionals Use Social Media
An important trend in contemporary public relations is the use of social media. For this study, in-depth interviews were conducted with public relations professionals to identify the many ways public relations professionals use social media to promote their company and clients. Findings will indicate how social media are used, the benefits of such use and what lessons the professionals have learned from using social media.
PM Poster Presentations – Bracy Hall

Brittany Rivers (psychology major)
Nominated by The Honors Program
Faculty Sponsor: Kristine Turko, Department of Psychology
Does Music Affect Altruism?
Previous research has shown that when people are in a good mood they are more likely to help and that uplifting music helps put people in happy moods. So if people listen to uplifting music then they should be more likely to help. By using this logic, I created an experiment where students were asked to read fictional stories of people in trouble then take a survey on how far they were willing to help these people. While doing this, participants listened to background noise of uplifting music, sympathetic music, or silence to test which noise would generate more altruism.
PM Poster Presentations – Bracy Hall
Brooke Danielle Rizzo (communication major)
Faculty Sponsor: Jamie Capuzza, Department of Communication

*Media Convergence: Preparing the Next Generation of Journalists*

This study examines and evaluates how journalism educators should prepare students to cope with media convergence. An online survey was conducted among both news professionals and college journalism professors. The study provided evidence and found strong support for training generalists and teaching new technology while continually emphasizing critical thinking skills. The study concludes and validates the legitimacy of media convergence and addresses the continued struggle colleges and universities face with whether and how they must change to prepare students for the new world of media convergence.

PM Poster Presentations – Bracy Hall

Lisa Robbins (biology major)
Faculty Sponsor: Brandon Sheafor, Department of Biology

*Antimicrobial Peptides of Hellbenders against Chytridiomycosis*

The fungal disease chytridiomycosis is a contributing factor in global amphibian decline. Antimicrobial peptides are secreted from the skin of amphibians and may be an important defense against this disease. Chytridiomycosis has been found in Ohio; however, the effect of the fungus on local populations is still unclear. Hellbenders (Cryptobranchus alleganiensis) have noticeably declined in the past decade, which may be a result of chytridiomycosis. To determine if hellbenders are susceptible to this fungus, skin peptides were collected from sixteen animals in the summer of 2009 in order to analyze peptide effectiveness at inhibiting fungal growth.

PM Poster Presentations – Bracy Hall

Todd Ruggles, Robert Towne and Anh Ngo (accounting majors)
Faculty Sponsor: John Strefeler, Department of Economics, Accounting, and Business Administration

*I Institute of Management Accountants 2010 National Student Case Competition*

The team was presented with a hypothetical business from Strategic Finance Magazine and was asked to prepare several recommendations for the business. The business, Keenans Pub, was an Irish Public House and had a relatively young owner who was seeking new ways to make it profitable. An analysis of financial statements showed that the pub needed to make some changes, and further tables and schedules indicated possible areas of improvement. From here, the team decided that Keenans Pub needed to make adjustments in their hours of operation, develop a concise menu, and add some forms of entertainment.

AM Poster Presentation – Cope Music Hall and Crandall Art Gallery
Anastasia Smith (biochemistry major)
Faculty Sponsor: Scott Mason, Department of Chemistry
*Synthesis of Novel Inorganic Compounds: Pappenhagen Project*
Under the direction of Dr. Scott Mason, research was conducted on the formation of novel inorganic compounds. The project began with synthesis of potassium hydrotris(3,5-dimethyl-1-pyrazole)borate, [hydrotris(3,5-dimethyl)borato]dichloroindium, and dibasic sodium N-methyliminodiacetic acid. The methods used to produce these compounds were similar to those in previously published research. Various combinations of these and other reagents were then reacted to determine if new products would be formed. Novel compounds that were synthesized included [hydrotris(3,5-dimethyl)borato]indium(MIDA), [hydrotris(3,5-dimethyl)borato]bismuth(MIDA), (MIDA)indium chloride, and (MIDA)bismuth chloride. The products from these reactions were then tested using melting point analysis and both NMR and IR spectroscopy to determine their identities.
PM Poster Presentations – Bracy Hall

Tia Smith (French and art major)
Faculty Sponsor: Joel Collins, Department of Art
*A Series of Lighthouse Drawings*
The Senior Cumulating Experience project I am going to present is a series of drawings focusing on Lighthouses with changing viewpoints to make the viewer experience something different with each viewpoint. My initial intent is for the viewer to sense a feeling of being small, intimidated by the height or mood of the room. The medium that I will be using throughout this Senior Cumulating Experience project will be a variety of charcoal.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Kali Starkey (history major)
Faculty Sponsor: Theresa Davis, Department of History
*Turn on, Tune in, and Drop out: An In-depth Look at the Haight-Ashbury*
My research shows that the Haight-Ashbury counter-culture of the 1960s influenced the way that future generations thought and acted, especially in regard to the place of the United States in the world. Using both primary and secondary sources I discovered that the counter-culture of the 1960s taught the American youth to question moral and ethical standards; to stand up for what one believes in even if it is not the societal norm; to be care-free; and it taught the world to love.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Samantha Stillwagon (biochemistry major)
Faculty Sponsor: Debra Boyd-Kimball, Department of Chemistry
*The Effects of Diet and Exercise on Oxidative Stress in the Rodent Model*
Alzheimer’s disease is one of the nation’s most common neurodegenerative diseases. One of its proposed causes is oxidative stress, which is caused by free radicals and can lead to cell damage and death. In this study, the effects of a high fat diet and moderate exercise on oxidative stress were tested independently and in conjunction with each other in a rodent. Results of the study measuring the level of oxidative stress in the liver will be presented.
PM Poster Presentations – Bracy Hall
Heather Stump (early childhood education major)
Faculty Sponsor: Shawn DiNarda Watters, Department of Education
*Room for Civic Education in Elementary Education*
This presentation demonstrates the importance of creating standards for civic education in elementary school classrooms. These standards would require teachers to include service-learning and political activism in the curriculum. Through interviews, article research, and a study, I prove that students, as young as kindergarten, are capable of learning from their experiences, both service and political. The results lead me to believe that children are capable of understanding the point of a service learning project that has been integrated into the curriculum. Developing civic education as part of the classroom has the potential to impact the futures of today’s children.
PM Poster Presentations – Bracy Hall

Samantha Tecca (biology major)
Faculty Sponsor: Lin Wu, Department of Biology
*The Diversity of Soil Invertebrates on Forest Buchannon Trail*
The diversity of soil invertebrates hasn’t been studied on Forest Buchannon trail at the Nature Center, and soil invertebrates are an important part of any ecosystem given their ecological interactions. The purpose of this research was to find out how diverse three separate locations were and the condition of the soil at each location. Organisms were collect from three sites on two different days using the Berlese funnel method and the Shannon-Weiner index was calculated. Soil samples were taken to determine soil moisture and temperature. The most diversity was found later in the fall and close to a water source, whereas the least amount occurred near human activity.
PM Poster Presentations – Bracy Hall

Benjamin Thompson (physics major) and Bethann Fitch (German major)
Faculty Sponsor: Steven Cederbloom, Department of Physics
*Stellar Evolution in Post-Asymptotic Red Giant Stars*
Young Post-Asymptotic Red Giant stars are relatively rare and little is known about how they evolve into planetary nebulae. We used the VLA, an array of radio telescopes in New Mexico, to observe Maser light being emitted from IRAS 18043-2116. This wavelength of light is caused by water molecules emitting microwaves by a process similar to lasers. By studying its Doppler shift, we can determine how gas in the star is moving and, so, how the star is evolving.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery
Alan Twaddle, Bethany Mayer (biology majors) and Cory Bostick (biochemistry major)
Faculty Sponsor: Kim Risley, Department of Biology
Dirty Money: Bacteria on an ATM
An ATM touch screen was swabbed to obtain bacteria. The hypotheses proposed that bacteria obtained from the ATM touch screen would either be human pathogens or environmental, non-pathogenic. Tests were conducted on two bacterial cultures to obtain a footprint used to identify the microorganisms. Profiles of both the bacteria were made, and DNA analyses were conducted to verify the findings. Based on the results, the alternative hypothesis was accepted, suggesting that the bacteria were most likely environmental, non-pathogenic bacteria. The DNA evidence suggested one of the bacteria was of the Bacillus genus, the other was not identified via molecular analysis.
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Emily Wagner, Deirdre Dick and Brielle Sautter (chemistry majors)
Faculty Sponsor: Jeff Draves, Department of Chemistry
What is in the Mount Union Lakes?
The purpose of this experiment was to determine the concentrations of various compounds in order to conclude if run-off from landscaping techniques led to harmful effects on the campus lakes. Water sampling was conducted at ten sites around the lakes and standard methods were completed in order to determine what compounds were present and at what levels. It is important to recognize that considering the amount of student traffic, construction, and landscaping modifications, the composition has not been greatly impacted. The concentrations in the lakes are currently at accepted values but may be affected in the future.
PM Poster Presentations – Bracy Hall

Raymond West and Laura Pollander (biochemistry majors)
Faculty Sponsor: Jeff Draves, Department of Chemistry
Analyte Analysis of Soil Surrounding the Mount Union College Pond
The analysis of the Mount Union College pond soil was performed to explore the iron and ammonium content as well as the pH trends in relation to landscaping practices and runoff. These analysis techniques were performed according to the Laboratory Manual for the Examination of Waste, Water, and Soil. The results that were obtained showed trends in pH level, consistent levels of Iron around the perimeter of the pond, and high amounts of Ammonium.
PM Poster Presentations – Bracy Hall
Kevin Watkins (biology major)  
Faculty Sponsor: Kim Risley, Department of Biology  
**HSV-1 UL15: Site-directed Mutagenesis on a Putative NLS Necessary for DNA Cleavage and Encapsulation in Viral Replication**  
The human herpes viruses require a combination of host machinery and viral proteins for infection; some of these proteins must localize to the nucleus of the host cell, meaning they require a nuclear localization sequence (NLS). Previous research has found that a potential NLS may be contained in the UL15 protein. In order to test this, the sequence would have to be altered, placed in a circular DNA construct, given to bacteria for replication of this sequence, and inserted into eukaryotic cells for visualization. While insertion into eukaryotic cells was not accomplished, the parameters for the previous methods were found.  
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery

Christina Zwilling (English: writing major)  
Faculty Sponsor: Frank Tascone, Department of English  
**Surfacing and “Chinese Lanterns;” Breaking Apart Language**  
I researched two areas of creative writing, fiction and poetry, to find out what makes a piece of writing resonate in the mind of a reader. I looked into the way language is used and presented as a way of distinguishing between excellent writing and that of the mediocre. I researched scholarly articles and did my own investigation into the works I find particularly powerful to draw out what about the writing makes it different. I found that there are certain aspects of the writing process that make a piece effective, and I integrated this into my own work.  
AM Poster Presentation – Cope Music Hall and Crandall Art Gallery