

April 18, 2019



Creativity

Discovery

Knowledge

Exploration

Problem Solving

SCHOLARSHIP

Welcome to the ninth annual All Scholars Day!

Today you will hear presentations from senior students as they teach you what they learned during their discipline-specific projects spanning a year or more in time. You will hear about students' experiences during internships, studying abroad, and conference attendances. You will hear musical performances, experience art work, and see results from independent scientific research. Enjoy, learn, and be inspired!

According to the Council on Undergraduate Research of the USA, undergraduate research is defined as "inquiry or investigation conducted by an undergraduate student that makes an original intellectual or creative contribution to the discipline". I would like to ask all MC students, faculty and staff to take a few moments to reflect on today's experiences and think about how YOU can help undergraduate research grow at Marietta College!

I want to thank Scholars and Mentors for the excellent work that you have done this year, and for sharing your experiences with us.

Happy All Scholars Day!



Dr. Kimberly Suzanne George Parsons
Director, Investigative Studies Program



"The important thing is to not stop questioning. Curiosity has its own reason for existing."

Albert Einstein



Honors and Investigative Studies Committee

Dr. David Brown (Biology)

Angela Burdiss (Library)

Prof. Grace Johnson (Business & Economics)

Dr. Linda Lockhart (Communication)

Dr. Michael Morgan (Political Science)

Dr. Kimberly Suzanne George Parsons (Chemistry and Biochemistry)

Dr. Harrison Potter (Mathematics)

Dr. Rakibul Sarker (Petroleum Engineering)

ALL SCHOLARS DAY — FOR ALL PIONEERS!

NOTE for the best poster!

- Faculty, staff and students can all vote for the poster they believe to be the best during the poster session from 10-11:30 AM. **Everyone who votes will receive a gift!**
- Prizes will be awarded to the top three posters, as voted on by faculty and staff, and student votes will determine the Student Choice winner.
 - **1st Place \$250**
 - **2nd Place \$150**
 - **3rd Place \$50**
 - **Student Choice Winner \$50**



Celebrate at the “All Scholars Lunch” on the Christy Mall!

- FREE!
- Lunch will be moved to DBRC in case of inclement weather



Attend multiple sessions.

- See the full schedule on pages 3 – 9.
- Read the abstract for any presentation on pages 11 – 17.
- Do not switch sessions during an oral presentation! (You may switch sessions between presentations.)
- Ask questions.
- Complete assignments for credit/extra credit in your courses.
- Think about how YOU can get involved in research and creative projects at MC!



PRESENTERS--pick up your gift!

- All gifts will be handed out at the poster session.

Oral Presenters

- Arrive at your presentation session at least ten minutes before it begins.
- Bring your presentation on a USB and name the file with YOUR NAME.
- Stay for the entire session to support your fellow presenters.

Poster Presenters

- Arrive at the DBRC by 9:45 AM to setup your poster.
- DO NOT attach your poster to a poster board of any kind before arriving.
- Make sure that you place your poster at the proper numbered location.
- Stay at your poster for the entire session.
- Be ready to present your poster in five minutes or less and answer questions.
- Remove your poster by 1:00 p.m.

PRESENTATIONS BY DISCIPLINE/TIME

Biology Capstones

8:00-10:00 a.m. ► Rickey/Bartlett 166

Moderator: Dr. Dave Brown



- ➔ Dowiak, C. *AERMOD Modeling Validation in the Ohio River Valley*
- ➔ Garrison, S. *The Effect of Iron and Gender on an Individual's Susceptibility to Parkinson's Disease*
- ➔ Martinez, C. *Investigation of the Potential Roles of Bisphenol-A and HOTAIR in Breast Cancer*
- ➔ Medykowski, M. *Determining the Origin of Fecal Coliform in Goose Run Creek*
- ➔ Smith, S. *Predictive Value of Blood and CSF Biomarkers and Genetics for Alzheimer's Disease*
- ➔ Spencer, S. *An Investigation on Whether Global Warming has an Impact on the Prevalence of Malaria*

Geology Capstones

8:00-10:00 a.m. ► Brown 103

Moderator: Dr. Tej Gautum and Dr. David Jeffery



- ➔ Apgar-Neeld, A. *Reconstruction, Taxonomy, and Taphonomic Analysis of a Theropod Sacral Vertebra from the Aaron Scott Quarry Ferron County, Utah*
- ➔ Metz, C. *Testing Local Drinking Water Quality*
- ➔ Pugh, J. *Study of faults exposed in the Burning Springs anticline mine*
- ➔ Sampson, J. *Outcrop Stress Orientation and Jointing*
- ➔ Sanders, G. *Jointing in the Burning Springs Anticline*
- ➔ Undersander, M. *Marietta Landslide Investigation: Channel Ln.*

Petroleum Engineering Capstones

8:00-10:00 a.m. ► Brown 210

Moderator: Prof. Dave Freeman



- ➔ Bates, N.; Henderson, P.; McCabe, D.; Kimmins, T.; Jackson, B. *Field Development Plan by Extradition Energy*
- ➔ Chapin, J.; Krieg, D.; Cuaresma, N.; Rymarz, R. *Chaser Shale Evaluation*
- ➔ Jennings, T.; Rolfes, A.; Glick, C.; Kiselica, K.; Helber, G. *A3S Oil Chaser Shale Development Program*
- ➔ Thomas, W.; Winchell, M.; Paxton, C.; Cantrell, B.; Ding, P. *Cosmic Gas and Energy*

Knowledge Exploration
Discovery

Music Therapy

8:00-9:00 a.m. ► *Hermann 205*

Moderator: Raquel Ravaglioli



- Eakle, L. *2019 GLR Music Therapy Conference*
- Johnson, S.; Shrader, M. *AMTA Conference and a Reflection on "A Mother's Love" Programming*

Political Science Capstones

8:30-10:00 a.m. ► *Thomas 312*

Moderator: Dr. Mark Schaefer



- McAfee, M. *Rural Recidivism*
- Dietry, B.; Vigue, E.; Mitchell, N.; Kitchen, K. *Moot Court (Sommerville v. Olympus State University)*

Math Capstones

9:00-10:00 a.m. ► *Rickey/Bartlett 285*

Moderator: John Tynan



- Laliberty, N. *Duration, Convexity, and Immunization Effects on Portfolio*
- Chen, X. *The Matrix-Tree Theorem and Its Application*

Physics Capstones

9:00-10:00 a.m. ► *Rickey/Selby 148*

Moderator: Dr. Cavendish McKay



- Erzen, D. *Sustainable Solutions: Enhancing the Photovoltaic Solar Energy Education Opportunities at Marietta College*
- Zhu, X. *Evaluating the effectiveness of a cleaning procedure of Au(111) surfaces using a residual gas analyzer*

Theatre

9:00-10:00 a.m. ► *Hermann 100*

Moderator: Prof. David Makuch



- Robinson, B. *Accessibility for Disabled Individuals in Theater*
- Scritchfield, M. *Split Scholar: An Analysis of the Acting and Tech Experiences*



10-11:30 a.m.
Poster Session
DBRC Courts 1 & 2

Biology Capstones

1:00-3:00 p.m. ► Rickey/Bartlett 166

Moderator: Dr. Dave Brown



- Bidwell, S. *Drosophila melanogaster* as a Model Organism for Parkinson's Disease
- Brown, E. *Effect of Valproic Acid on Methylation State of FMR1 Gene*
- Ensinger, K. *Investigation of the Role of Butyrate on Insulin Sensitivity*
- Nelson, G. *Breeding Zebrafish (Danio rerio) in a Laboratory Setting Using Traditional and Nontraditional Methods*
- Simmons, J. *The Teratogenic Effects of Formaldehyde on Xenopus Embryos*
- Timmons, A. *B-vitamin's Role Against Hyperglycemic Damage from Diabetic Mellitus*

DIY Manufacture Open House

1:00-3:00 p.m. ► Rickey 104

Moderator: Dr. Craig Howald



- Come visit the makerspace that students in DIY manufacture have been creating and using. See what is available and perhaps make something of your own.

PioBiz

1:00-3:00 p.m. ► Cooper Auditorium, Thomas

Moderator: Dr. Jacqueline Khorassani



- In Round 3 of PioBiz competition, two teams of students will compete for up to \$10,000 to start their own business. In addition to the competition judges, the members of the audience will also have a chance to vote for their favorite business.

Accounting Capstones

1:00-3:30 p.m. ► Thomas 209

Moderator: Prof. Grace Johnson



- Amrine, D. *The Relationship Between Non-GAAP Financial Reporting and the Composition of an Enterprise's Board of Directors*
- Childers, L. *Behavioral Analysis of Tax Preparer Fraud*
- Flesher, A. *Depreciation Methods*
- Haessly, S. *Examination of Earnings Management Tendencies in Four Countries*
- Kapple, M. *Impacts of Economic Nexus on Business*
- Laliberty, N. *The Effects of Blockchain Accounting on the Accounting Profession*
- Moore, T. *How do Marietta College Accounting and Public Accounting Students Handle Ethical Situations?*
- Mulholland, B. *Economic, Cultural, and Political Influences on Audit Standards in Foreign Countries*
- Oliver, E. *The Impact of the Sarbanes-Oxley Act of 2002 on Whistleblower Reports to the SEC Since the Passing of the Law*
- Potter, H. *Nationalism and Globalism in Accounting: The Failure to Converge IFRS and US GAAP*
- True, S. *Revenue Recognition Simulation using AI*

Athletic Training Capstones

1:00-3:00 p.m. ► **Sports Medicine Classroom, DBRC**

Moderator: Prof. Chyrsten Gessel



- ➔ Birnbrich, E. *Effects of the Menstrual Cycle on Female Athlete Performance and Injury Incidence*
- ➔ Boso, S. *Perception of Athletic Trainer's Roles and Responsibilities by Non-healthcare Professionals*
- ➔ Dixon, K. *The effects of PNF Stretching and IASTM on Vertical Jump and Sprint Times*
- ➔ Johnson, J. *Comparing Soccer Players by Their Positions and Their Results on Various Agility and Balancing Tests*
- ➔ Macke, N. *The Difference in Accuracy Between Expert and Novice Athletic Trainers When Evaluating the Balance Error Scoring System*
- ➔ Ruhl, T. *Stimulated Pre-workout Effects on Power Output Through One Rep Max in College-aged Lifters*
- ➔ Short, T. *Correlation Between Psychological Attitude Towards Performance Enhancers and Outcomes of Physical Testing*

Petroleum Engineering Capstones

1:00-4:00 p.m. ► **Brown 210**

Moderator: Prof. Dave Freeman



- ➔ Bowes, C.; Dowell, C.; Roknich, H. *BDR Energy's Field Development Plan*
- ➔ Keck, C.; Presley, K.; Wu, J. *Senior Capstone Presentation*
- ➔ Pennock, M.; Tustin, S.; Bailey, T.; Harper, S. *Nick Bates Petroleum*
- ➔ T Quealy, M.; Riggelman, C.; Rosswog, J.; Otto, K. *Pigskin Petroleum Capstone Project*
- ➔ Skordos, S.; Monyak, J.; Rott, R.; D'Egidio, A. *THP Field Development Plan*

History Capstones

2:00-3:00 p.m. ► **Thomas 113**

Moderator: Dr. David Torbett



- ➔ Reynolds, L. *Mismanaged: American Hunting Practices of the 19th Century*
- ➔ Brown, E. *The Console Wars: Defining a New Age of Competition in the Video Game Industry*

Scholarship
Creativity
Problem Solving

Chemistry Capstones

2:00-4:30 p.m. ► Rickey/Selby 337

Moderator: Dr. Jim Jeitler



- ➔ DeLong, L. *A Study of the Inhibitory Effect of [CoIII(acacen)(L)2]+ on GLI Zinc Finger Transcription Factors*
- ➔ Hughes, H. *Fluorescent Biosensing of Ebola and Marburg Viruses*
- ➔ Patberg, S. *Study of Schiff Base Metal Complexes for Biomedical Research Applications*
- ➔ Romine, A. *Microfluidic Paper-based Analytical Device for The Detection of Vibrio cholerae*
- ➔ Schafhausen, E. *pH Determination of Irreversible Spiropyran Species*
- ➔ Stevens, H. *Molecular Design Using CH--O Hydrogen Bonding*
- ➔ Tom, R. *Analogous Features between Lactose Permease and Lactase*

Study Abroad

3:00-4:30 p.m. ► Thomas 320

Moderator: Dr. Christy Burke



- ➔ Arrowood, A. *Abroad in Peru*
- ➔ Ewing, R. *Cambridge Study Abroad: Experiential Education*
- ➔ Klopfenstein, A. *Study Abroad-Prague, Czech Republic*

Leadership Fellowship

3:00-4:00 p.m. ► McDonough Gallery

Moderator: Prof. Maribeth Saleem-Tanner



- ➔ Erzen, D. *Leadership with Energy Production and Climate Change, a Practical Approach*
- ➔ *(Exhibit will be available for viewing until 6:00 PM)*

Music Capstone

3:00-4:00 p.m. ► Band Rehearsal Hall

Moderator: Dr. Andy Francis



- ➔ Shao, K. *Capstone Composition*

Energy Business Alliance

4:00-5:00 p.m. ► Brown 210

Moderator: Dr. Ahmed Algarhy



- ➔ Kungle, J.; Hale, D.; Dimon, A.; Freund, Z.; Montano, J.; Sallee, A.; Taylor, O.; Gummere, M. *Energy Business Alliance Project Presentation*

Questionable, At Best: Senior Art & Design Capstone Exhibition

9:00 a.m.-7:00 p.m. ► Atrium Gallery, 3rd floor Hermann Moderator: Prof. Sara Rosenstock



- ➔ Berg, K. *Mama's Makery: a memoir to my mom*
- ➔ Horsley, M. *Silkie Coffee*
- ➔ Leitner-Wise, A. *PolyGram Magazine*
- ➔ Mudre, M. *PioLife*
- ➔ Yu, Z. *People I Met When I Was Twenty-something*
- ➔ Zhou, J. *Doggie Life*

Congratulations!



2019 ALL SCHOLARS DAY PRESENTERS



POSTER SESSION

10:00 – 11:30 a.m. ► DBRC

Vote for the best presentation!

Travel & Internships

- 01 Tomlin, K. *Marketing Communication Internship*
- 02 Dzurhoff, K.; Kubala, J.; Palm, B. *SEATA*
- 03 Klopfenstein, A. *ILA Conference Takeaways*
- 04 Dowiak, C. *Global Missions Health Conference*
- 05 Lang, K. *MBAA International Conference*
- 06 Eakle, L.; Pennington, N. *2018 AMTA National Conference*
- 07 Adkins, K.; Peters, T.; White, M.; Stanton, K.; Rake, C. *2019 OMEA Conference*
- 08 Prince, A. *Report on the Ohio Valley Shakespeare Conference*
- 09 Embrescia, J. *Internship*

Communication—Broadcast/Journalism

- 10 Embrescia, J. *How College Students Digest the News*

Chemistry

- 11 BouSamra, M. *Jeitler Research Group*
- 12 Crawford, J. *Fluorescence Quenching of Cyanoanthracene*
- 13 McNeer, S. *Effect of dinitroparaben on M624 Cell Viability*
- 14 Rasnake, C.; Traussi, S. *Synthesis of New Paraben Compounds*

Physician Assistant

- 15 Miller, K. *Melanoma on the Rise*

Business

- 16 Pennock, T. *Effect of Citizenship Behaviors on Students' Academic Performance and Stress in Response to Perceptions of Support*

Communication

- 17 Albright, A.; The Fifth Street Consulting Team. *Fifth Street Consulting 2018-2019 Projects: Marathon Petroleum Corporation & Pioneer Activities Council*
- 18 Carver, K. *Disclosing of Private Information of Survivors of Domestic Violence: Applying Communication Privacy Management Theory*
- 19 Carver, K. *Fighting Indifference: A Critical Analysis of the film, Patch Adams*
- 20 Billingsley C. *The Perks of Being a Wallflower: A Textual Analysis*
- 21 Cisler, C. *An Intersection of Standpoints: A Critical Analysis of The Immortal Life of Henrietta Lacks*
- 22 Corum, M. *To Disclose or Not to Disclose. Exploring the Rhetoric Within the Netflix Film "The American Meme"*
- 23 Heft, C. *She Died Alone: A Critical Analysis of Margaret Edson's Wit*
- 24 Majka, G. *A Wrench in the Family System: A Critical Analysis of The Fault in Our Stars*
- 25 Moore, A. *The Pink Effect: Examining the Toxic Commodification of the Pink Ribbon*
- 26 Nelson, R. *Ethical Suicide, Is There Such Thing?: Utilizing the Film, How to Die in Oregon, to Examine Physician Assisted Suicide*
- 27 Reed, E. *Tuskegee's Bad Blood: A Critical Analysis of the film Miss Evers' Boys*

Athletic Training

- 28 Birnbrich, E. *Effects of the Menstrual Cycle on Female Athlete Performance and Injury Incidence*
- 29 Boso, S. *Perception of Athletic Trainer's Roles and Responsibilities by Non-healthcare Professionals*
- 30 Dixon, K. *The Effects of PNF Stretching and IASTM on Vertical Jump and Sprint Times*
- 31 Johnson, J. *Comparing Soccer Players by Their Positions and Their Results on Various Agility and Balancing Tests*
- 32 Macke, N. *The Difference in Accuracy Between Expert and Novice Athletic Trainers When Evaluating the Balance Error Scoring System*
- 33 Ruhl, T. *Stimulated Pre-workout Effects on Power Output Through One Rep Max in College-aged Lifters*
- 34 Short, T. *Correlation Between Psychological Attitude Towards Performance Enhancers and Outcomes of Physical Testing*

Psychology

- 35 Ensinger, K.; Spencer, S.; Piper, D. *Gustatory Disgust and Influence of Gender on Moral Judgment*
- 36 Garrison, S.; Diehl, M.; Ford, B.; Henderson, G. *The Effect of Taste on Moral Judgment*
- 37 Holbrook, M.; Bartenschlag, A. *Perceptions of Male Victims of Domestic Violence by Socio-Economic Status*
- 38 Johnson, S.; Miller, E.; Steger, L. *The Effects of Taste and Disgust on Moral Judgement*
- 39 McBride, K.; Gortner, L.; Lape, D.; Timmons, A. *Effect of Taste on Relationship Quality Perception*



Choose the best poster!
Pick up an All Scholars Day gift when you vote!

PRESENTATION ABSTRACTS

Adkins, K.; Peters, T.; White, M.; Stanton, K.; Rake, C. 2019 OMEA Conference This presentation will review the experience of five music education students at 2019 OMEA conference. In it they will summarize the presentations they attended about conducting, trombone teaching methods and various professional performances. (POSTER; CONFERENCE)

Albright, A.; The Fifth Street Consulting Team. Fifth Street Consulting 2018-2019 Projects: Marathon Petroleum Corporation & Pioneer Activities Council Fifth Street Consulting (5SC), a student-led, faculty-advised consulting firm specializing in communication and media consulting, takes on semester-long consulting projects with real-world clients. In the Fall 2018 semester, 5SC partnered with Marathon Petroleum Corporation to build a talent recruitment campaign focused on attracting millennial applicants to business and communication professions at MPC. For the Spring 2019 semester, 5SC is working to enhance the internal and external communication of Pioneer Activities Council at Marietta College to maximize the organizations' impact on campus. Project results and plans will be reported. (POSTER)

Amrine, D. The Relationship Between Non-GAAP Financial Reporting and the Composition of an Enterprise's Board of Directors By analyzing a small sample of publicly traded companies, we look to find any correlation between each of the companies' use of non-GAAP financial measures and the composition of their respective Board of Directors. By selecting only those companies that have been issued an SEC comment letter regarding non-GAAP disclosures within the past year, we aim to get a sense of current trends in reporting. (ACCOUNTING CAPSTONE)

Apgar-Neeld, A. Reconstruction, Taxonomy, and Taphonomic Analysis of a Theropod Sacral Vertebra from the Aaron Scott Quarry Ferron County, Utah Taxonomy of a theropod sacral vertebrae and associated bones within the Aaron Scott Quarry (ASQ), located in Ferron County, UT, will be determined through analyzing comparative anatomy, with the additional use of common lab preparation techniques. The evaluation and documentation of taphonomic applications are addressed in research. (GEOLOGY CAPSTONE)

Arrowood, A. Abroad in Peru My presentation will include an overview of my time in Cusco, Peru during summer of 2018. I will be sharing stories that are based around cultural learning experiences and other lessons that I learned from session abroad. I will also share how studying abroad not only helped to broaden my horizons personally, but also helped me to further my education. I will explain how I used my skills from Marietta College and applied them to my experiences in Peru and vice versa. The difference in cultural aspects made a big impact on my outlook on life. This is something I am eager to share with the Marietta College community. (STUDY ABROAD)

Bates, N.; Henderson, P.; McCabe, D.; Kimmins, T.; Jackson, B. Field Development Plan by Extradition Energy A group of 5 students create a hypothetical company and then plan for development and production of a hypothetical field

called the Marietta field. This presentation covers the growth and development plan of the Marietta field based on previous drilling and completions projects in the field. Authors in this group made assumptions where there is lack of data that we based on not only classroom experience and research, but also on technical knowledge that was acquired from summer internships and class experiences. (PETROLEUM ENGINEERING)

Berg, K. Mama's Makery: a memoir to my mom A cookbook that commemorates my mom, who creates recipes that are hard to track down sometimes. Part cookbook, part family album, this book is a simple, creative representation of Mom. (ART & DESIGN CAPSTONE)

Bidwell, S. Drosophila melanogaster as a Model Organism for Parkinson's Disease Can the common fruit fly (*Drosophila melanogaster*) be used to develop novel Parkinson's Disease therapies? It may not seem like an ideal organism; in terms of genetics, ease of care, and neuronal degeneration, however, it is better suited than other model organisms. The fruit fly may not share many anatomical similarities with humans, but it allows researchers a better understanding of PD and its treatments. (BIOLOGY CAPSTONE)

Billingsley C. The Perks of Being a Wallflower: A Critical Analysis This study explores and applies health communication theories to the film *Perks of Being a Wallflower*. Today the media can be a prime source of entertainment and a resource in which individuals can learn about topics which may be taboo or uncomfortable to discuss. A pertinent issue is how the media may incorrectly portray this information which can lead to stereotypes and stigma. Depression, anxiety, and sexual abuse are all included in topics which may be difficult for youth to discuss and are themes in the film. The research conducted has applied the Family Systems Theory and Communication Privacy Management Theory applied as the conceptual framework to critically analyze and to critique the film (POSTER; HEALTH COMMUNICATION)

Birnbrich, E. Effects of the menstrual cycle on female athlete performance and injury incidence Menstruation causes hormonal shifts that can affect the female body's risk for injury. The purpose of this study was to determine the effects of the different phases of the menstrual cycle on specific functional outcome measures and injury incidence in female athletes. (ATHLETIC TRAINING CAPSTONE AND POSTER)

Boso, S. Perception of Athletic Trainer's Roles and Responsibilities from People Outside of The Healthcare Field Athletic trainers are healthcare professionals that work in many different settings although their name may only imply the athletic setting. The purpose of this study was to investigate the relationship between knowledge of athletic trainer's responsibilities in regards to generation, occupation, and socioeconomic status within the general population. (ATHLETIC TRAINING CAPSTONE AND POSTER)

BouSamra, M. Jeitler Research Group The Jeitler research group is interested in studying coordination complexes of first row transition metals (Mn, Fe, Co, Ni, Cu and Zn) for their magnetic and potential therapeutic properties.

Currently we are studying complexes of 2,6-pyridine dicarboxylic acid in order to determine the magnetic exchange properties. We are also preparing complexes of porphyrin mimics in order to eventually study their anti-cancer properties. (POSTER)

Bowes, C.; Dowell, C.; Roknich, H. BDR Energy's Field Development Plan BDR Energy's presentation will consist of the field development plan for the Marietta Field. This will include development plans for the acreage, the recovery we expect to see from the field, and the overall field economics. (PETROLEUM ENGINEERING CAPSTONE)

Brown, E. Effect of Valproic Acid on Methylation State of FMR1 Gene This project's purpose is to determine whether valproic acid (VPA) is a demethylating agent of the FMR1 gene. Fragile X is caused by hypermethylation of the FMR1 gene, inhibiting Fragile X Mental Retardation Protein (FMRP) production. SH-SY5Y cells were transfected with a DNA plasmid containing the mutated FMR1 gene and treated with VPA. Following treatment, Western Blot was conducted to assess whether FMRP production was reactivated in treated cells, indicating demethylation of the gene. (BIOLOGY CAPSTONE)

Brown, E. The Console Wars: Defining a New Age of Competition in the Video Game Industry The gaming industry is surrounded by a competitive culture. Today, communities of gamers from around the world can play together. With eSports and other forms of professional gaming becoming more mainstream, this world of competition continues to expand. This sort of competition, however, originates further into the past of gaming. In the 1990s, two titans of the gaming world engaged in a battle that would shape the industry. This battle, known as the Console Wars, was an evolution of the competitive nature of the arcade scene that developed years prior. Throughout the decade, both companies engaged in a series of aggressive marketing, strong software and gaming hardware, and achievements to change how the public viewed the industry. The Console Wars cemented the fact that the competitive nature of gaming was going strong, and by stretching it into an industry-wide battle, the medium was able to develop as a whole, also allowing it to become more mainstream in the public eye. (HISTORY CAPSTONE)

Carver, K. Disclosing of Private Information of Survivors of Domestic Violence: Applying Communication Privacy Management Theory The Department of Justice (2017) claimed that an American is sexually assaulted every 98 seconds. Communication privacy management theory is used as a guiding framework to analyze boundary coordination, boundary turbulence and personal privacy for each participant. The aim of this study is to understand how survivors of domestic violence disclose their private information in their experiences with domestic violence. Four participants were recruited from Eve Inc., the domestic violence shelter for women in Marietta, OH. Through a narrative content analysis themes emerged that are consistent with myths directed at women and domestic violence. Women tend to be selective in who they have disclosed to with

distinctive boundaries revolving their private experiences. (POSTER)

Carver, K. *Fighting Indifference: A Critical Analysis of the film, Patch Adams* The 1998 film, Patch Adams starring Robin Williams highlights the importance of the patient-physician relationship. How one man is inspired to become a doctor to change the communication between the patient and physicians to provide a positive, heartwarming atmosphere for those who are battling illness and disease. Patch, the main character, strives to do everything to help those in need not only through medicine but as well as physical, mental, and emotional care and support. The purpose of this paper is to analyze the guiding concept of patient-centered communication and the way Patch Adams applies this notion to the world of medicine that can be reflected in today's healthcare world. (POSTER; HEALTH COMMUNICATION)

Chapin, J.; Krieg, D.; Cuaresma, N.; Rymarz, R. *Chaser Shale Evaluation* The purpose of this presentation is to present our findings for our semester capstone project. The Petroleum Engineering Capstone consists of taking an unconventional field and running geological, drilling, completions, reservoir, production, and economic analysis. From the results of the analysis further development can be planned and engineered. (PETROLEUM ENGINEERING)

Chen, X. *The Matrix-Tree Theorem and Its Application* The Matrix-Tree Theorem is an important theorem in Graph Theory. Its main function is to decide the number of spanning trees in a graph, and hence, it is widely used in analyzing large networks such as cable, telephone lines, and connecting roads. This presentation will start with a brief introduction of some basic concepts of Graph Theory including path, spanning tree, and incidence matrix, followed by a complete proof of the Matrix-Tree Theorem, and end with some applications of the Theorem including counting the number of spanning trees in a complete bipartite graph. (MATH CAPSTONE)

Childers, L. *Behavioral Analysis of Tax Preparer Fraud* This document contains information about tax fraud by tax preparers and understanding why preparers engage in fraudulent activity. The types of fraud, locations, motives and psychology of the behavior of these preparers, and the ethics of the preparer and environment they work in will all be analyzed in this research. The material from this document will come from credible sources including the IRS and will identify why ethics and behavior determine tax preparer fraud. (ACCOUNTING CAPSTONE)

Cisler, C. *An Intersection of Standpoints: A Critical Analysis of The Immortal Life of Henrietta Lacks* Race and gender issues stand the test of time as they are constant and unyielding. A crucial growth in awareness has helped ease the trauma inflicted on non-dominant groups, but we are still far from equality as a civilization. The film, The Immortal Life of Henrietta Lacks provided us an experience to learn from in relation to ethics, social grouping and how these affect the experiences held in one's life. Guided by Co-cultural communication theory and Intersectionality, these findings will help show a clear connection between the experiences had dependent on one's gender, race and class. (POSTER; HEALTH COMMUNICATION)

Corum, M. *To Disclose or Not To Disclose. Exploring the rhetoric within the Netflix film*

"The American Meme" Communication Privacy Management Theory is a communication theory that focuses on how and why people decide to disclose personal information. While this varies from person to person, there are generalizations to be made. However, this can change when it comes to celebrities. When celebrities reveal information, they reveal themselves to the entire world, which can change the perceptions of the people. "The American Meme" talks about celebrities and their influence they have on the general public, especially when it comes to mental health. (POSTER; HEALTH COMMUNICATION)

Crawford, J. *Fluorescence Quenching of Cyanoanthracene* There are a number of ways to explain the fluorescence quenching of a given molecule. Among them are electron transfer, proton transfer, and energy transfer. Molecules absorb radiation to create the higher energy excited state. When they release this energy as light it is called fluorescence. Quenchers, in turn, react with the excited state and allow the molecule to return to ground state faster. This fluorescing and quenching process can be monitored by using tools such as ultraviolet-visible absorption and fluorescence spectroscopy, lasers, cyclic voltammetry, and molecular modeling. By focusing on the energy required for moving between the ground and excited states, how much electrochemical energy is needed for electron transfer, and how quenchers react, it is possible to see which of the three types of quenching captures and translates energy most efficiently. These types of reactions are useful for when light needs to be changed to electrical energy. In this study the quenching of cyanoanthracene with naphthalene is investigated. (POSTER)

DeLong, L. *A Study of the Inhibitory Effect of [Coll(acacen)(L)2]+ on GLI Zinc Finger Transcription Factors* The presentation will be a proposal of synthesizing [Coll(acacen)(L)2]+ complexes, which will be used to study the inhibition of the GLI family zinc finger transcription factors. Using cobalt Schiff base synthesis, various linkers with oligonucleotides could be attached in the equatorial plane of the complexes to target specific zinc fingers. Also, the proposal will include information regarding the use of western blot analysis to study the inhibitory effects of the [Coll(acacen)(L)2]+ on the GLI zinc finger transcription factors. (CHEMISTRY CAPSTONE)

Dietry, B.; Vigue, E.; Mitchell, N.; Kitchen, K. *Moot Court (Sommerville v. Olympus State University)* This project consists of a group of students that attended moot court tournaments during the fall of 2018 using the fictitious case Andrea Sommerville v. Olympus State University. In this presentation students will present arguments, used in these competitions, as well as a short presentation discussing the class and moot court experience. (POLITICAL SCIENCE)

Dixon, K. *The effects of PNF stretching and IASTM on vertical jump and sprint times* Instrument Assisted Soft Tissue Mobilization is a new pre-exercise treatment routine. There is a lack of research that compares IASTM to other treatments and athletic performance. The study's purpose was to compare the effects of IASTM to PNF stretching on vertical jump and sprint times. No significant data was found. (ATHLETIC TRAINING CAPSTONE AND POSTER)

Dowiak, C. *AERMOD Modeling Validation in the Ohio River Valley* AERMOD is a steady state

plume model that predicts the distribution of air particles. In previous studies, annual AERMOD models have not been able to accurately predict plumes in river valleys when compared against physical validators, most notably lichens. This study seeks to explain those differences in the Ohio River Valley by looking at monthly variations in wind and how data collected from lichens correlates with monthly AERMOD predictions. (BIOLOGY CAPSTONE)

Dowiak, C. *Global Missions Health Conference* The Global Missions Health Conference brought together thousands of health professionals, medical students, undergraduates, doctors, missionaries, and nurses for 6 plenary sessions and 8 seminar sessions. Popular topics included community development, disabilities, HIV/AIDS, orphans and vulnerable children, human trafficking, and the refugee crisis. This presentation will highlight one of the seminar sessions attended. (POSTER; CONFERENCE)

Dzuroff, K.; Kubala, J.; Palm, B. *SEATA* This is a presentation of what we were able to learn during our time at SEATA, Southeast Athletic Training Association's annual conference. We were able to practice many different clinical skills, meet new networks, and be able to attend lectures from professionals in the field to increase our knowledge of Athletic Training. (POSTER; CONFERENCE)

Eakle, L. *2019 GLR Music Therapy Conference* In this presentation, a music therapy students who attended the 2019 Greater Lakes Regional Conference will report on her experience. With a focus on music therapy and mental health, she will explain some of the techniques she learned about at the conference and relate them to her future plans in music therapy, including a potential cross-disciplinary approach with counseling. Other subjects covered included music therapy for patients in inpatient mental health institutions, career planning for music therapists, and semi-local internships for music therapy students. (MUSIC THERAPY)

Eakle, L.; Pennington, N. *2018 AMTA National Conference* In November of 2018, several Marietta College students attended the American Music Therapy Association National Conference in Dallas, Texas. In this presentation, three of these students will give an overview of their experience and what they learned from the sessions they attended, tying their experiences together to highlight the positive impact to the Marietta College Music Therapy program as well as its students. Topics covered include how to make the most of your capstone internship, preschoolers learning emotional regulation through music therapy, and the inclusion of self care in music therapy interventions. (POSTER; CONFERENCE)

Embrescia, J. *How College Students Digest the News* For my final capstone project, I conducted research, administered a survey, and interviewed current students. The project helped reach a better understanding of how college students digest news media and what influences their decision on where they get their news from. This allows for a better understanding of the future landscape of journalism. As subscriptions to print newspapers continues to decline, it is clear that a new form of news media is taking over. Younger generations typically read the news and watch news clips on social media applications such as Facebook or Twitter. (POSTER; COMMUNICATION)

Embrescia, J. Internship Working in The Parkersburg News and Sentinel Writing newsroom I have helped with creating content for a book and other publications. I've written bios on prominent people who have graduated from Marietta High School, descriptions of interesting locations within the Mid-Ohio Valley, as well as news articles. (POSTER; INTERNSHIP)

Ensinger, K.; Spencer, S.; Piper, D. Gustatory Disgust and Influence of Gender on Moral Judgment This study will investigate how different tastes influence moral judgment. In addition, we will investigate the role that gender plays in moral judgment. There has been extensive research into gender and taste, as well as taste and moral judgment Wang L., & Chen Q. (2018), Mukherjee S., Kramer, T., & Kulow K. (2017). Our primary hypothesis is that bitter tastes will invoke a harsher judgment of the moral dilemmas we will present, while sweeter tastes will invoke a lighter judgment of the same moral dilemmas. Our secondary hypothesis is that females will have a greater sensitivity to these taste stimuli, and will have more pronounced responses in moral judgment. The current study is a replication of Eskine et al. (2011). The independent variable will consist of participants receiving one of three taste conditions, which results in a change in the dependent variable of an evaluation of a moral dilemma. We operationalized moral judgment using the subjects' evaluation of ethical dilemmas. Data collection is ongoing. (POSTER; PSYCHOLOGY)

Ensinger, K. Investigation of the Role of Butyrate on Insulin Sensitivity This Biology literature research capstone project will investigate the role of butyrate production by the gut microbiota on Type II diabetes (T2D). Changes in gut microbial composition occur in individuals with chronic diseases. Modulating the gut microbiota of T2D patients could be a possible treatment method. It is hypothesized that increasing the amount of butyrate-producing bacteria in the gut microbiota of type II diabetics could improve insulin sensitivity which was supported by my research. (BIOLOGY CAPSTONE)

Erzen, D. Leadership with Energy Production and Climate Change, a practical approach This interactive multimedia exhibit illustrates the process of experiential learning while investigating the factors inhibiting Appalachian green energy production, and exploring where those factors intersect with current leadership opportunities surrounding climate change. Attendees will tour through various elements comprising this experience, including analyzing current literature, meeting with members of the community, and producing an alternative break trip manual. (LEADERSHIP)

Erzen, D. Sustainable Solutions: Enhancing the Photovoltaic Solar Energy Education Opportunities at Marietta College This project's purpose was to improve the current solar energy laboratory experiences available at Marietta College. After the existing Energy Resources Laboratory (ENGY 102) was examined, student feedback was collected and current literature was consulted to develop enhancements allowing for further scientific inquiry, including the addition of background context, the implementation of LoggerPro, and the construction of an angle measuring instrument. Generally, students appeared to be receptive to these modifications and met desired learning objectives. (PHYSICS CAPSTONE)

Ewing, R. Cambridge Study Abroad: Experiential Education Rachel Ewing, a student at Marietta College, completed a five-week study abroad, focus on Law, at Cambridge University in England. At the University she took two courses, one in Comparative Public Law of the US and UK and one in Legal History of the UK. This was a beneficial experience not only due to the ability to study in another country but also for the opportunity to experience the rigor and material of Law school while still an undergraduate student. Additionally, during her time abroad Ewing was able to travel to numerous different locations including London, Edinburgh, and Paris. One significant educational opportunity she had during these travels was a private tour of and dinner in the chambers of Parliament, directed by MP Andrew Percy. This experience, as well as her study abroad as a whole, allowed for a better understanding of the British legal and governmental systems, as well as a better understanding of how to take lessons learned while at Marietta College and apply them to interactions outside of the college. This opportunity was provided numerous other benefits which Rachel will detail in her presentation, and she will explain the process for finding this study abroad opportunity and how she prepared to study abroad. (STUDY ABROAD)

Flesher, A. Depreciation Methods I have researched depreciation methods used on plant property and equipment in eight companies in each of three industries, manufacturing, extraction, and retail. I have hypothesized that the straight-line method of depreciating is the most commonly used method of depreciation. I will be comparing the depreciation methods used by the United States companies I had chosen. I will compare industry to industry and all of the companies against my initial hypothesis. I will then research why my results came about and how they hold up to similar reports. (ACCOUNTING CAPSTONE)

Garrison, S. The Effect of Iron and Gender on an Individuals Susceptibility to Parkinson's Disease The purpose of this research is to determine the relationship between gender, iron levels, and hormone levels within the body to explain a person's predisposition for developing Parkinson's disease. Free iron within the brain is a risk in reactive oxygen species forming and leading to neurodegeneration, and estrogen is thought to be a protective mechanism. The research hypothesis is that due to greater iron accumulation and less hormonal protective and regulatory mechanisms, males are more susceptible to the development of Parkinson's disease than females. (BIOLOGY CAPSTONE)

Garrison, S.; Diehl, M.; Ford, B.; Henderson, G. The Effect of Taste on Moral Judgment Embodied cognition is the effect of a physical stimulus on thoughts and perceptions. The purpose of this study is to determine the effect of tastes on moral judgment through replication of Eskine, Kaciniak, and Prinz (2011). The results showed participants in the bitter taste condition had higher levels of moral disgust. They researched how political views affect ratings of moral disgust. This study will be extending that research to explore the effect of religiosity on moral judgment based on previous research on this topic (Glover, 1997; Clark & Dawson, 1996; Sapp & Jones, 1986). Each participant will fill out a survey determining the presence and strength of religious affiliation and then will be randomly assigned to each taste condition: bitter (Swedish bitters), sweet (Berry Punch), and control (water). Then, participants will

be given 2 teaspoons of the beverage at the beginning of the presentation of the moral vignettes and one will be given at a halfway point during the task. Participants will be given 6 ethical dilemmas for which they will rate the morality of each in order to measure moral judgment. The hypothesis for this research study is: participants that are presented with a bitter taste will show higher levels of moral disgust. Our secondary hypothesis is: the greater the religious affiliation the participant reports, they will exhibit greater moral disgust. Data collection is ongoing. We predict this research study will provide a greater understanding of embodied cognition. (POSTER; PSYCHOLOGY)

Haessly, S. Examination of Earnings Management Tendencies in Four Countries This paper focuses on the examination of earnings management (EM) in the United States, Brazil, South Africa, and Japan. I will examine the history/background of EM by defining it and explaining how it was used in the past and how it is used in the present day. Then, I will explore each of my countries cultures and compare that to their EM. My methods include: print sources, articles and cases from research databases (academic search complete, business source complete, nexus uni), and credible websites. (ACCOUNTING CAPSTONE)

Heft, C. She Died Alone: A Critical Analysis of Margaret Edson's Wit I will be presenting a poster board based off the movie, Wit, by Margaret Edson and analyzing the real-life issues the movie portrays. These issues include, doctor-patient communication, lack of social support, lack of social needs and gender discrimination. The movie is about a female undergoing experimental chemotherapy to treat her stage 4 ovarian cancer. Through her treatment, she is left alone, confused, scared, and undermined by white, male doctors who treat her as a piece of research and not a human being. Unfortunately, this is occurring in real life through health facilities and needs awareness, discussion and change brought to it. (POSTER; HEALTH COMMUNICATION)

Holbrook, M.; Bartenschlag, A. Perceptions of Male Victims of Domestic Violence by Socio-Economic Status Problem/Purpose. Domestic violence (DV) incidents with a male victim are viewed as less serious and less likely to need intervention compared to those with a female victim (Seelau and Seelau, 20015). Female respondents are significantly more likely to side with the female in a DV situation (whether the female is the victim of perpetrator) (Feather, 1996). Additionally, the public falsely believes a main cause of DV to be poverty (Worden and Carlson, 2005). Also, student respondents with a familial history of DV blamed situational factors over personality traits of both the victim and offender (Bryant and Spencer, 2003). This study sought to establish the relationship between individuals' perceptions of a DV incident with a male victim and the assumed socio-economic status (SES) of the couple. Additionally, this study sought to identify the perceptions participants have about male victims and female perpetrators, and the differences in responses by participants based on both respondent gender and personal history of DV and/or intimate partner violence (IPV). Procedure. Participants answered questions on their personal experience with DV and IPV. Participants were randomly assigned to one of three vignettes, including a police report of a DV incident and information on the SES of the couple. The vignettes differed only in the SES of the couple (low, average, high). Participants answered questions on their perceptions of the event and both

individuals. Participants then completed the Revised Conflicts Tactics Scale (Straus, Hamby, Boney-McCoy & Sugarman, 1996) to assess personal history with IPV. Participants were then screened to determine if they would complete the Adult Recall Version of the Revised Conflicts Tactics Scale (Straus, 1999) to determine history with parental DV before the debriefing statement. Results (Expected Results). This study seeks to determine a main effect of participant sex on views of a DV incident with a male victim. We plan to use an ANCOVA to determine the relationship between participants' responses to male victims of domestic violence and the SES of the couple, with participant sex as a covariate, and past exposure to DV or IPV as a second covariate. Conclusions/Implications. We predict that participants will consistently side more with their sex counterpart in the situation, and participants with a history of violence will attribute the cause of the violence to situational factors rather than those associated with the personality of the victim or offender. (POSTER; PSYCHOLOGY)

Horsley, M. *Silkie Coffee* Silkie Coffee is a coffee brand that helps donate toward saving animals that are mistreated in farms as well as promoting local farming and humanely treated animals. The concept and logo of Silkie Coffee came from Bantam Silkie chickens that I use to raise when I was younger. The colors and design are inspired by Andy Warhol. (ART & DESIGN CAPSTONE)

Hughes, H. *Fluorescent Biosensing of Ebola and Marburg Viruses* As many viruses share similarities, it can be difficult to make a clinical diagnosis. For some viruses, that have no effective drug or vaccine, an early diagnosis is crucial for the recovery of the patient and the isolation of the virus. Some scientists are developing fluorescent biosensors to aid in the diagnosis. This proposal aims to develop a fluorescent biosensing system with a Cu-based metal-organic framework to detect the Ebola and Marburg viruses simultaneously. (CHEMISTRY CAPSTONE)

Jennings, T.; Rolfes, A.; Glick, C.; Kiselica, K.; Helber, G. *A3S Oil Chaser Shale Development Program* The presentation will include the development of the Chaser Shale in terms of geology, drilling, completions, and production of the assigned field. Along with the presentation is the expected recovery and economics through a unique approach designed to maximize the production for this unconventional field play. The presentation will go through the development plan of this field, incorporating the design to optimize this asset and display the skills and lessons learned throughout four years of the petroleum engineering curriculum. (PETROLEUM ENGINEERING)

Johnson, J. *Comparing soccer players by their positions and their results on various agility and balancing tests* In 14 Marietta Men's and Women's soccer players that play different positions, their results were compared on the vertical jump, 40-meter dash, Y-Balance, Agility T-test, and Three-Hop for distance. Vertical (F=1.278), 40-meter dash (F=1.375), CompositeRDL (F=.042), CompositeRDR (F=.282), Agility T-test (F=.956), Three-HopR (F=.620), Three-HopL (F=.313). The results were not significant. (ATHLETIC TRAINING CAPSTONE AND POSTER)

Johnson, S.; Miller, E.; Steger, L. *The Effects of Taste and Disgust on Moral Judgement* We plan to look at the effects of a physical stimulus (taste) on embodied cognition, which is the theory that

external stimuli affect the state of one's body. A relationship between bitter taste and harsher immorality judgement has been found (Eskine, Kacinik, & Prinz, 2011). We are manipulating taste by administering three different beverages (sweet, bitter, and neutral), and are measuring moral judgement by participants' ratings of moral vignettes. We hypothesize that participants who consume bitter tasting beverages will have harsher morality ratings when compared to the sweet tasting beverages due to the link between disgust and moral judgement. McNeel (1994) found through longitudinal and cross-sectional studies that small liberal arts schools show more importance in developing a high sense of moral judgement. McNeel (1994) also found that college seniors tend to have higher morality ratings than freshmen when given DIT (Defining Issues Test). Given this information, we believe that upperclassmen will have harsher morality ratings when compared to underclassmen. We will randomly assign a sample of students from Marietta College to different taste conditions. After consuming the beverage, participants will be shown six moral images and asked to rate them on their level of morality. Participants will complete a demographic questionnaire. We predict that there will be harsher morality ratings because of the bitter beverage, and that upperclassmen will also give harsher morality ratings. (POSTER; PSYCHOLOGY)

Johnson, S.; Shrader, M. *AMTA Conference and a Reflection on "A Mother's Love" Programming* We will be discussing what music therapy is and will be explaining our findings from the session, "Mothers in Recovery: A New Model for A Growing Need" from the American Music Therapy Association Conference held last November. This session entailed the overlap of infant music therapy and addiction recovery for mothers while looking at the needs of the population and providing these mothers a place to receive treatment. This session looked at a new model of music therapy and treatment options for this population in the facility, "A Mothers Love". We will be discussing our findings and our thoughts about the session while also engaging in experiential music therapy interventions. (MUSIC THERAPY)

Kappler, M. *Impacts of Economic Nexus on Business* Wayfair vs. South Dakota took the accounting world by storm in June of 2018 when the Supreme Court ruled in favor of South Dakota. The decision basically made it so companies do not have to have a physical presence in a location to be required to pay income taxes to a state. This decision could cause some problems for small companies by making them question whether or not the sales in a specific state are worth the payment of a states income tax. (ACCOUNTING CAPSTONE)

Keck, C.; Presley, K.; Wu, J. *Senior Capstone Presentation* Petroleum Engineering Senior Capstone (PETROLEUM ENGINEERING CAPSTONE)

Klopfenstein, A. *ILA Conference Takeaways* I will present what I learned while attending the International Leadership Association's annual conference which was funded in part by the Travel Grant. (POSTER; CONFERENCE)

Klopfenstein, A. *Study Abroad-Prague, Czech Republic* I studied abroad in Prague, Czech Republic in the Spring 2019 semester. I will discuss

my cultural learning, lessons learned, and academic overview of my time abroad. (STUDY ABROAD)

Kungle, J.; Krieg, D.; Chapin J. *Energy Business Alliance Project Presentation* EBA students will present their work from the past year, explain what they learned, and talk about its significance to their careers. The presentation will include a brief discussion of the comprehensive overview completed in the fall semester, then move into our simulated spring project. This includes field development and economics as well as some basic drilling procedures and well design. (ENERGY BUSINESS ALLIANCE)

Laliberty, N. *Duration, Convexity, and Immunization Effects on Portfolio* We will look at how to calculate Duration, Convexity, and Immunization and how doing so affects your portfolio. There are other factors that go into building your portfolio but we are only interested in interest rate calculations of these three factors. This is particularly important to people with a mathematical/actuarial background because you will understand more clearly how to calculate these. I will start by briefly introducing the three factors we will be calculating. (MATH CAPSTONE)

Laliberty, N. *The Effects of Blockchain Accounting on the Accounting Profession* In this project, I will introduce the topic of cryptocurrency. I will introduce this topic and explain how this lead to blockchain. Blockchain is an up and coming technology that will have a large effect on the accounting profession. It will have an especially large effect on the audit procedures and I will discuss this in depth as well as the other effects of blockchain. (ACCOUNTING CAPSTONE)

Lang, K. *MBAA International Conference* I am going to be attending the MBAA international conference in Chicago, IL on March 27th-30th. While there I hope to expand my knowledge and professional skills by listening and sitting in sessions where professionals speak and give their presentations. I hope to return with a knowledge about what I might look forward to in my future career and a new understanding of what business professionals have done to become successful. My poster is going to have photos of the conference and a background of what it was and what I learned. I hope to expand my knowledge of what I learned to future students and my future employers as I am wanting to work as a marketer in the business field. This conference is going to educate me and prepare me for this presentation. I will be presenting what I learned, what was insightful, and if I am any steps closer to figuring out what I want to do in the future. (POSTER; CONFERENCE)

Leitner-Wise, A. *PolyGram Magazine* PolyGram Magazine is a print magazine that was written about the top 10 Indie albums released in 2018, and designed in order to reflect the writing. This project is an exploration into how much the content of an article can inform the design of a publication. Focusing on themes of contrast and untraditional design solutions, the design of this magazine attempts to push the envelope while remaining visually engaging and aesthetically pleasing. (ART & DESIGN CAPSTONE)

Macke, N. *The difference in reliability between expert and novice athletic trainers when evaluating the balance error scoring system* CONTEXT: Concussions encompass a large focus

of clinical research regarding sports injuries with athletic trainers being common evaluators. OBJECTIVE: Investigate the difference in accuracy and reliability between expert and novice athletic trainers. (ATHLETIC TRAINING CAPSTONE AND POSTER)

Majka, G. A. *Wrench in the Family System: A Critical Analysis of The Fault in Our Stars* This paper explores family systems theory and stigma as they are represented in the movie, *The Fault in Our Stars*. *The Fault in Our Stars* is a movie full of happy emotions as well as sad emotions. Today stigma is huge in all aspects, but cancer stigma is around us everywhere (Corrigan 2014). Along with stigma, there is also family systems theory present in *The Fault in Our Stars*. Family systems theory is another way of saying that you have support from a system that is also a close relationship in your life. Whether that relationship is family, significant other, close friends etc. those relationships are impactful on your health. Emotional support can benefit the recovery of an ill person and often times be a huge motivator to get well (Storch et al., 2018). This paper will critically analyze *The Fault in Our Stars* and offer suggestions on how to reduce stigma associated with illness within a family system. (POSTER; HEALTH COMMUNICATION)

Martinez, C. *Investigation of the Potential Roles of Bisphenol-A and HOTAIR in Breast Cancer* Bisphenol-a (BPA) is an environmental estrogen that is commonly found in plastics and cans. Exposure to this chemical has been linked to the development of breast cancer, with the upregulation of the HOTAIR gene as a possible mode of action. It is thought that BPA alters HOTAIR expression, which could lead to the development of breast cancer. This presentation will investigate three different experiments that reveal the association between these factors. (BIOLOGY CAPSTONE)

McAfee, M. *Rural Recidivism* A detailed study of the factors that influence the increasing rate of recidivism in urban and rural areas of Ohio, from 2009-2017. (POLITICAL SCIENCE CAPSTONE)

McBride, K.; Gortner, L.; Lape, D.; Timmons, A. *Effect of taste on relationship quality perception* Research shows that a sweet taste experience improves the perception of the evaluation of a hypothetical romantic relationship, but did not change perceptions of real-life romantic relationships (Ren, Tan, Arriaga, & Chan, 2014). We are attempting to replicate that study. The independent variable is taste (sweet taste will be fruit punch and the control is neutral taste which will be water). A second independent variable is the type of romantic relationship a participant is evaluating - their real-life relationship or a hypothetical (imagined) one. The dependent variable is the quality of the relationship as measured by the Perceived Relationship Quality Components (PRQC). We will be using an ordinal measurement scale, using a seven-point scale the participants will rank their romantic perceptions. We predict that participants in the sweet taste group will have a higher rating of romantic relationship qualities in a hypothetical relationship but no effect on a real relationship, compared to the control group. Data will be obtained by giving participants the taste stimuli, then measuring relationship quality according to the PRQC. We are using a 2 (taste) x 2 (relationship type) between-subjects design. Data collection is ongoing. (POSTER; PSYCHOLOGY)

McNeer, S. *Effect of dinitroparaben on M624 cell viability* M624 (human melanoma) cells were treated with four concentrations of dinitroparaben, a type of organic compound previously shown to cause cell death. The dinitroparaben was tested in different solvent systems to determine a suitable solvent for treating the cells. Cell viability was quantified using clonogenic assays, and the average and standard deviation of each paraben concentration was calculated. The results showed that increased concentration of the dinitroparaben resulted in decreased cell viability. (POSTER)

Medykowski, M. *Determining the Origin of Fecal Coliform in Goose Run Creek* This project addresses fecal contamination in Goose Run Creek. Fecal coliform is bacteria from the colon and poses risk because of the possibility of pathogens accompanying it. This was done sampling creek water, plating 3M Petrifilm Coliform Count Plates to determine relative concentration of *Escherichia coli* and ultimately the entrance point of the fecal contamination. This is hypothesized to be due to septic systems not draining into the city sewage lines. (BIOLOGY CAPSTONE)

Metz, C. *Testing Local Drinking Water Quality* The objective of this research is to study drinking water quality in Waterford and Tri-County Water Supplies Systems by means of collecting water samples and testing them under parameters recommended by Ohio EPA for areas of oil and gas production. Some of the parameters set by Ohio EPA are used, which include pH, conductivity, total dissolved solids, sulfate, iron, calcium hardness, sodium, potassium, magnesium, calcium, and manganese. From the test results, a majority of the parameters comply with data from Ohio EPA. However, parameters such as manganese and potassium have higher concentrations, while magnesium has lower concentrations than the data from Ohio EPA. (GEOLOGY CAPSTONE)

Miller, K. *Melanoma on the Rise* This presentation highlights the risk of developing melanoma skin cancer. It will help viewers detect potentially harmful moles and learn to better protect themselves. (POSTER; PHYSICIAN ASSISTANT)

Moore, A. *The Pink Effect: Examining the Toxic Commodification of the Pink Ribbon* The movie *Pink Ribbons Inc.*, is a documentary that talks about the effects the pink ribbon has on people with breast cancer, as well as large corporate companies, and small communities. The month of October is when the pink ribbon is displayed everywhere for breast cancer awareness. However, is it actually helping to find a cure? Using the pink ribbon for breast cancer has raised many concerns regarding ethics, as well as pure anger. This paper will examine the background of the pink ribbon, analyze what breast cancer is, explore the specific campaigns that promote awareness, and investigate the ethical stand points of the pink ribbon. The paper will utilize rationale dialectics theory to examine how breast cancer can be effectively spread without over emphasizing the pink ribbon. (POSTER; HEALTH COMMUNICATION)

Moore, T. *How do Marietta College accounting and public accounting students handle ethical situations?* This research project is exploring the ethical sensitivity levels of the accounting and public accounting students here at Marietta College. This project illustrates the history of ethics within the accounting field, the results from a survey of the students, and then an analysis of the results

and the importance of accountants being ethical. (ACCOUNTING CAPSTONE)

Mudre, M. *PioLife* *PioLife* is a Marietta College Magazine created by Maria Mudre. This magazine was created to show incoming Marietta College students what its like adjusting to college life at Marietta College. This magazine provides advice and intel about campus to committed students by current students. The creation *PioLife* included detailed survey's polls and interviews of current college students to gage an overall consensus of what the most important points were to highlight for incoming students. (ART & DESIGN CAPSTONE)

Mulholland, B. *Economic, Cultural, and Political Influences on Audit Standards in Foreign Countries* This paper researches the impact economic, political, and cultural influences have on audit standards in foreign countries compared to the United States. The foreign countries that are being observed are Russia, Brazil, China, and India. After researching the influences for each of the countries, it can be seen that the influences do play a role on the audit standards in the countries. (ACCOUNTING CAPSTONE)

Nelson, G. *Breeding Zebrafish (Danio rerio) in a laboratory setting using traditional and nontraditional methods* Zebrafish are a commonly-used model organism for many scientific studies—like ecotoxicology studies—due to their tolerance of stress. While many articles state that zebrafish are easy to breed, some claim the opposite. This study tests methods to consistently breed zebrafish. The main experiments were run with two different apparatuses and adding 17,20β-DHP to stimulate egg production. A higher concentration of 17,20β-DHP and the traditional marble method are likely the best method for consistent breeding. (BIOLOGY CAPSTONE)

Nelson, R. *Ethical Suicide, Is There Such Thing?: Utilizing the film, How to Die in Oregon, to Examine Physician Assisted Suicide* This research will look at the importance of physician's assisted suicide. "It will kill me and make me happy," said Roger Sagner, the 343rd user of physician's assisted suicide. Why would there be such a powerful movement pushing for the legalization of an action that withholds so much habitual skepticism? On average, one person dies from suicide every 16.2 minutes, and although that seems completely immoral, those people that choose to be put out of their misery feel that this practice is as ethical as any. The Social Influences Model, influenced by Bandura's Social Learning theory, shows how society influences behavior, which relates to this controversial topic. In the movie "How to Die in Oregon", they use videos to illustrate the necessity for this practice of physician-assisted suicide. In this project, I will combine Euthanasia, "How to Die in Oregon", and the Social Influences Model to discover the reasoning behind opposing views on this topic. In today's culture, we don't usually associate death with happiness, but this movie gives a strong representation of how this practice can be positive for those in need. (POSTER; HEALTH COMMUNICATION)

Oliver, E. *The Impact of the Sarbanes-Oxley Act of 2002 on Whistleblower Reports to the SEC Since the Passing of the Law* The Sarbanes-Oxley Act of 2002 was passed due to "Enron," the massive American energy company, committing fraudulent financial activity. Enron's fraud was exposed because of a whistleblower. A whistleblower is a person who discloses information

to the public or some higher authority about any wrongdoing (ex: fraud). This presentation is going to discuss the changes amongst whistleblower reports made to the Securities and Exchange Commission before and after the Sarbanes-Oxley Act of 2002 was passed. (ACCOUNTING CAPSTONE)

Patberg, S. Study of Schiff Base Metal Complexes for Biomedical Research Applications Schiff Base Metal complexes have recently become of medical importance recently. With new synthetic mechanisms, the creation of these complexes has become a new and exciting research area. Previously, the synthetic reaction of 1,3-diaminopropane and 3-ethoxysalicylaldehyde has been studied in the Jeilfer Research Group. Using various forms of these compounds and changing the metal centers, a wide variety of medical applications. Specifically, the integration of Nickel and Zinc to this mixture could be of interest. (CHEMISTRY CAPSTONE)

Pennock, M.; Tustin, S.; Bailey, T.; Harper, S. Nick Bates Petroleum (PETROLEUM ENGINEERING)

Pennock, T. Effect of Citizenship Behaviors on Students' Academic Performance and Stress in Response to Perceptions of Support This study examines the relations between students' perception of support from the organization and their performance as measured by GPA as well as their level of stress. This study hypothesizes that stronger perceptions of support will relate positively to performance and negatively to stress. Additionally, helping and citizenship behaviors will be examined in an interactive role. It is hypothesized that high reported levels of OCB will strengthen the relation between POS and performance as well as weaken the POS relation with stress (POSTER; MANAGEMENT)

Potter, H. Nationalism and Globalism in Accounting: The Failure to Converge IFRS and US GAAP Accounting standards vary from one country to another. This is one source of friction in the globalization of business. Many countries have adopted International Financial Reporting Standards (IFRS) but the United States of America retains its own domestic Generally Accepted Accounting Principles (GAAP). This failure to converge accounting standards is analyzed through a political lens as a conflict between globalism and nationalism. (ACCOUNTING CAPSTONE)

Prince, A. Report on the Ohio Valley Shakespeare Conference In October of last year, I attended the Ohio Valley Shakespeare Conference where I had the opportunity to explore an academic conference while I was a part of a Shakespeare class. My presentation will cover what the academic conference experience was like, how that impacted my understanding of academic papers, and share the plans being created as Marietta prepares to host the conference in the Summer of this year, using information I learned at the previous conference as a guide. (POSTER; CONFERENCE)

Pugh, J. Study of faults exposed in the Burning Springs anticline mine The purpose of this research is to determine the relationship between the oblique-slip faults exposed in the Burning Springs Mine, located in Ritchie County, WV, to the Burning Springs anticlinal structure, in order to determine timing, stress state orientations, related

to Laurentia and Gondwana collision. The research includes fieldwork in the mine and research into what is known about the Burning Springs structure, most likely a fault-bend fold associated with a thrust fault. This will be done by the means of measuring orientations and characteristics of faults in subsurface mine exposures and mapping and documenting these in relation to the Burning Springs anticlinal structure. Measurements of attitudes of beds exposed on the surface will be used to help construct a cross-sectional map of the subsurface fault and fold system. Findings might help understand the formation of the N-S trending Burning Springs anticline. (GEOLOGY CAPSTONE)

Quealy, M.; Riggelman, C.; Rosswog, J.; Otto, K. Pigskin Petroleum Capstone Project As a team we have worked on a comprehensive petroleum engineering project. Each team member took a lead role in different aspects of the project. Caleb was the drilling and lead engineer, Jake was the geologist, Kris was the reservoir engineer, and Michael was the production engineer. The main areas of focus were reservoir characterization, well planning, drilling, production, and economics. On a weekly basis a teammate would present our work to the class leading up to our final presentation. (PETROLEUM ENGINEERING CAPSTONE)

Rasnake, C.; Traussi, S. Synthesis of New Paraben Compounds Parabens are anti-microbial preservatives found in cosmetics, toiletries, and pharmaceuticals. Studies have shown that these compounds may be toxic to mammalian cells by acting as hormone agonists or antagonists or cellular enzyme inhibitors. This poster will describe our efforts to synthesize and purify unnatural parabens with controllable physical and chemical properties. In collaboration with The Parsons Group, toxicity and phototoxicity studies of these compounds are ongoing. (POSTER)

Reed, E. Tuskegee's Bad Blood: A Critical Analysis of the film Miss Evers' Boys Syphilis is a sexually transmitted disease that causes an infection once it reaches broken skin. This disease affects people worldwide and, if caught early enough, it can be treated with antibiotics. In 1932 a large number of African-American men in rural Alabama were tested for syphilis and the majority of them had the disease, at this point in time there were no known cures for syphilis but two doctors and nurse Eunice Evers were dedicated to helping these men through their disease and were told the men would be first in line if a cure was found. These doctors and nurses referred to syphilis as "bad blood" when speaking to their patients. This paper will use the culture-centered approach and communication ethics to critically examine the film, *Miss Evers' Boys*, as it relates to the Tuskegee Syphilis study. (POSTER; HEALTH COMMUNICATION)

Reynolds, L. Mismanaged: American Hunting Practices of the 19th Century In the 21st century, hunting is a primary agent of wildlife conservation. This has not always been the case. 19th century American hunting practices often aimed at maximal harvests and thus resulted in tremendous damage to wildlife populations. The history of the American Bison is an excellent case study for this phenomena. In it one finds not only the practices which destroyed wildlife but also the responsibility of modern sportsmen to carry on those practices which now preserve it. (HISTORY CAPSTONE)

Robinson, S. Accessibility for Disabled Individuals in Theater Researches the adequacy in accessibility for disabled patrons and performers in the theatrical performing arts. Uses examples of inequality, case studies, and statistics to see if there is disabled access and representation in theater. Research shows that although small strides are being made, pleas for representation and acknowledgement are being ignored. (THEATRE)

Romine, A. Microfluidic Paper-based Analytical Device for The Detection of Vibrio cholerae Microfluidic paper-based analytical devices were first introduced as a point of care diagnostic test. Their application was to be for third world countries where health care and resources are limited. The proposed device would test for bacterial antibodies in a way that doesn't require sample prep, complex reagent handling or trained medical personnel. (CHEMISTRY CAPSTONE)

Ruhl, T. Stimulated pre-workout effects on power output through one rep max in college-aged lifters The objective of this study was to determine if pre-workout will increase strength output through a one-rep max in bench press and squat. This is important in the field to help determine if pre-workout is safe and effective. Significance was found for bench-press and back-squat. (ATHLETIC TRAINING CAPSTONE and POSTER)

Sampson, J. Outcrop Stress Orientation and Jointing The objective of this research is to study stress orientation of sandstone outcrops in the Black Hand sandstone formation and other local rock outcrops by means of measuring and analyzing joint orientations. This study will help to understand whether joint pattern in this locality correspond to the stress orientation. To accomplish this task, natural bridge locations in Rockbridge, OH and Irish Run near Matamoras, OH were visited along with a road cut off of Route 50 in West Virginia and an outcrop in Hocking Hills State Park. Once the data is collected and analyzed, interpretations as to how they were formed will be made. (GEOLOGY CAPSTONE)

Sanders, G. Jointing in the Burning Springs Anticline The purpose of this capstone is to study joint sets within a three-dimensional framework in and around the Burning Springs limestone mine. The mine is located off Route 50 in Waverly, West Virginia. Joint sets will be analyzed by taking strike and dip measurements off the support pillars within the mine. They will then be evaluated to determine what caused the deformation and if there are different sets of jointing within the mine. The strikes and dips that are taken from the mine will then be put into a stereonet program to help visualize the directions of the fractures and determine why the Burning Springs Anticline is one of two structures that trend in a different direction than the rest of the region. Once the data and stereonets have been completed and analyzed, it will then be determined what and how many events caused the Burning Springs Anticline to trend in a different direction than the rest of the region. (GEOLOGY CAPSTONE)

Schafhausen, E. pH determination of irreversible spiropyran species The preparation of functional spiropyran derivatives for use in a pH study. pH optimization by UV-Vis titration. pH optimized to convert 1oH (open protonated form of spiropyran) to 1c (deprotonated closed form of spiropyran). Specific aim is to propose a study that allows for spiropyrans to be used as irreversible

photochromic switches in 3-D optical memory devices. (CHEMISTRY CAPSTONE)

Scratchfield, M. *Split Scholar: An Analysis of the Acting and Tech Experiences* Since the Capstone project was created to present the concentrated amalgamation of a student's experiences at Marietta College, my presentation will reflect just that. I have done extensive field work in both props design and creation in a production, as well as acting in another. My experiences and findings during both processes will be the focus of my project. (THEATRE CAPSTONE)

Shao, K. *Capstone Composition* This project is a three-movement marimba solo piece composed by myself. I reviewed some percussion literature pieces, combined my music theory knowledge and my own experiences of percussion performances to compose this piece. The duration of this piece is 10 minutes, and it follows slow-fast-slow motion between each movement. I used C# major as the main key, and there are several modulations within the third movement. All of the three movements have their main motive, and each motive is different but linked together. (MUSIC CAPSTONE)

Short, T. *Correlation between psychological attitude towards performance enhancers and outcomes of physical testing* CONTEXT: Gatorade Energy Chews (GEC) claim to increase the athlete's performance by preparing the muscles for activity and replenishing fuel during competition. OBJECTIVE: Determine if pre-performance consumption of GEC has a significant effect on performance and if there is a correlation between perception of GEC effects and performance when taking GEC. DESIGN: Correlational, single blinded repeated measure. SETTING: Division III college. PARTICIPANTS: Fall athletes, 18 years old, 15 total, 9 males, 6 females. INTERVENTION: Participants met for baseline, placebo, and control testing. At baseline, placebo, and control the participant completed three physical tests. Vertical jump using a Vertec vertical jump measuring stick (Jump USA, Sunnyvale, CA) with the highest jump of three recorded. 200-meter sprint around an indoor track. Finally, a repeated modified agility test involving vertical and horizontal movements and change of direction. (ATHLETIC TRAINING CAPSTONE AND POSTER)

Simmons, J. *The Teratogenic Effects of Formaldehyde on Xenopus Embryos* Formaldehyde is a known teratogen that is dumped into waterways in amounts as high as 7.1 mg/L. *Xenopus laevis* embryos were collected into 4 testing groups a control, 0.174, 1.38, and 7.1 mg/L of formaldehyde. They were exposed for a week by aqueous route starting at fertilization, and the testing solutions were changed every 24 hours. During the first week of development the embryos exhibited delayed hatching, delayed development, and hypopigmentation. (BIOLOGY CAPSTONE)

Skordos, S.; Monyak, J.; Rott, R. *D'Egidio, A. THP Field Development Plan* (PETROLEUM ENGINEERING CAPSTONE)

Spencer, S. *An Investigation on Whether Global Warming has an Impact on the Prevalence of Malaria* This study is a literature-based research project on the impact of climate change on the global distribution and prevalence of malaria. The hypothesis is that malaria will have a greater global distribution due to the changes that are occurring due to global warming. Multiple studies have examined the correlation between global warming

and malaria. These studies have found that malaria and its vector are highly sensitive to changes in temperature. The future ranges of endemic malaria will also be predicted. (BIOLOGY CAPSTONE)

Smith, S. *Predictive Value of Blood and CSF Biomarkers and Genetics For Alzheimer's Disease* Alzheimer's Disease, the most common neurodegenerative disease, is currently affecting 57 million people worldwide. With no known cure, it is important to discover the most accurate early detection technique. This research will compare the predictive value of amyloid beta and tau protein levels in the blood and cerebrospinal fluid to the main genetic determinant. The hypothesis of this study is that blood testing for biomarkers will provide the greatest predictive accuracy for Alzheimer's Disease. (BIOLOGY CAPSTONE)

Stevens, H. *Molecular Design Using CH-O Hydrogen Bonding* Hydrogen bonds play a critical role in everything from protein folding to DNA base pair recognition to simply holding water molecules together. Traditionally, hydrogen bonds were considered to occur only when hydrogen was attached to very electronegative atoms. Recently, some chemists have expanded the definition to include hydrogens attached to carbon. While still somewhat controversial, this proposal aims to design a molecular system in which CH-O hydrogen bonding is the predominant attraction. (CHEMISTRY CAPSTONE)

Thomas, W.; Winchell, M.; Paxton, C.; Cantrell, B.; Ding, P. *Cosmic Gas and Energy* We will be evaluating the Chaser shale for economic viability for large scale exploration. We will be discussing this field in terms of field development and economics. We will be looking at all aspects of the well plan to determine the most appropriate way to proceed with pad layout, well spacing and completion planning. (PETROLEUM ENGINEERING)

Timmons, A. *B-vitamin's Role against hyperglycemic damage from diabetic Mellitus* Do B vitamins attenuate damage from diabetic neuropathy? Are B vitamins able to protect the nervous system from damage? A variety of scientific models, ranging from case studies to animal testing and clinical trials all suggest that B vitamins may provide neuroprotective effects against diabetic peripheral neuropathy. B vitamins, however, have not been shown to treat central nervous system damage, degeneration, or preexisting damage to the general nervous system. (BIOLOGY CAPSTONE)

Tom, R. *Analogous Features between Lactose Permease and Lactase* A proposal to study the role of analogous features in eukaryotic lactase that have been found to be important in lactose permease of bacteria. (CHEMISTRY CAPSTONE)

Tomlin, K. *Marketing Communication Internship* • Create concepts into print, online and other collateral materials • Develop content for promotional materials including newsletters, website, social media stories, media releases, and other materials as needed • Enhance social media presence which includes developing content and providing scheduled Facebook posts and updates Internship responsibilities include: Draft, distribute and pitch news releases, media alerts and other stories • Design flyers, graphics and other marketing material as needed • Reach out to community organizations and general public to acquire information when needed • Collaborate with

staff on new ideas, directions and venues for marketing and communications • Assist with special events • Assist with copyediting for the various promotional items defined above • Assist with development of creative concepts and marketing strategies for promoting the work of the Marietta Community Foundation. (POSTER)

True, S. *Revenue Recognition Simulation using AI* Artificial Intelligence is changing the way most companies conduct business. AI applications increase efficiency, reduce human error, and reduce the need for employees to work on repetitive mundane tasks. This simulation seeks to use the Python programming language to create an expert system application to automate revenue recognition accounting related to Accounting Standards Codification Topic 606. This ASC topic defines how to recognize revenue related to different types of customer contracts. (ACCOUNTING CAPSTONE)

Undersander, M. *Marietta Landslide Investigation: Channel Ln.* The objective of this study is to investigate a landslide that occurred at the intersection of Channel Ln. and Becker Ln. in the spring of 2018 and determine the possible causes of the landslide. This will be done by mapping the landslide and sampling the soil samples and conducting the laboratory tests. Tests include Atterberg limits and direct shear. The findings of this study will include the soil type composing the landslide affected area, properties of the soil, and how the soil and other environmental factors contributed to the cause of the landslide. These findings could create awareness for other similar conditions where landslide have not occurred yet, possibly leading to the use of preventative methods. (GEOLOGY CAPSTONE)

Yu, Z. *People I Met When I Was Twenty-something* This is a book that features a collection of photographs of people I met in Marietta, Ohio and the stories we share. I was inspired by a book named *Humans of New York* by Brandon Stanton for his courage to photograph and interview many strangers on the road. I'm a shy person, so my goal for this project was to challenge myself by stepping out of my comfort zone. (ART & DESIGN CAPSTONE)

Zhou, J. *Doggie Life* I really enjoy to owned my two dogs in the U.S. and they already become my family. I want to present them on the canvas and share the dog's emotion with everybody. I used oil painting and try to create the image as real as possible. I want to restore the life moment for my dogs. It shows very well. (ART & DESIGN CAPSTONE)

Zhu, X. *Evaluating the effectiveness of a cleaning procedure of Au(111) surfaces using a residual gas analyzer* In order to perform atomic scale measurements on surfaces, for example with scanning tunneling and atomic force microscopes, it is important to have atomically clean surfaces. We investigate using a residual gas analyzer for determining the effectiveness of cleaning procedures. In particular, we used cycles of argon ion sputtering and annealing with a resistive heater to clean the surface of Au(111) samples. Differences in the measured partial pressures of different masses within the chamber during the sputtering and annealing procedures reveal changes in the sample cleanliness. (PHYSICS CAPSTONE)



THANK YOU
Lunch provided by
Office of Academic Affairs
Poster Competition Prizes provided by
Student Government Assoc.

All Scholars Day 2019 Presentation Schedule

 8:00-10:00 AM
Biology Capstone

Bartlett 166

 1:00-3:00 PM
Biology Capstone

Bartlett 166

 8:00-10:00 AM
Geology Capstone

Brown 103

 1:00-3:00 PM
DIY Manufacture Open House

Rickey 104

 8:00-10:00 AM
Petroleum Engineering Capstone

Brown 210

 1:00-3:00 PM
PioBiz

Thomas Cooper Auditorium

 8:00-9:00 AM
Music Therapy

Hermann 205

 1:00-3:30 PM
Accounting Capstone

Thomas 209

 8:30-10:00 AM
Political Science

Thomas 312

 1:00-3:30 PM
Athletic Training Capstone

Sports Med. Room
DBRC

 9:00-10:00 AM
Math Capstone

Bartlett 285

 1:00-4:00 PM
Petroleum Engineering Capstone

Brown 210

 9:00-10:00 AM
Physics Capstone

Selby 148

 2:00-3:00 PM
History Capstone

Thomas 113

 9:00-10:00 AM
Theatre

Hermann 100

 2:00-4:30 PM
Chemistry Capstone

Selby 337

 3:00-4:30 PM
Study Abroad

Thomas 320

 3:00-4:00 PM
Leadership Fellowship

McDonough Gallery

 3:30-4:00 PM
Music Capstone

Band Rehearsal Hall

 4:00-5:00 PM
Energy Business Alliance

Brown 210

 9:00 AM - 7 PM
Senior Art & Design
Capstone Exhibition

Atrium Gallery



10:00-11:30 AM

**POSTER SESSION
DBRC Courts 1 & 2**



11:30 AM -1:00 PM

Lunch on the Mall



Marietta College