Katy Alkire (athletic training major)
Faculty Sponsor: Morgan C. Bagley, Department of Human Performance and Sport Business
3:30 p.m., Bracy Hall Room 02
Dazed and Confused: The Lasting Effects of Post-Concussion Syndrome
Imagine you are playing in a soccer game when you get hit in the face by the ball. You feel a little out of it, but think it is nothing. The athletic trainer realizes you are acting strange, and begins to evaluate you for a head injury. You are diagnosed with a simple concussion, and hope you are only going to be out a day or two. It has now been over a year and you are still suffering from the collision. Now stop being hypothetical, this is a serious injury called post- concussion syndrome. This project is a case study of an athlete, who has gone through this ordeal and how she and a medical team are working to relieve her symptoms, to help her lead a symptom free life.

Elizabeth Bauer, Brooke Tonero, John Piechuta, Rachel Brady (cognitive and behavioral neuroscience majors) and Abigail Yahraus (psychology major)
Faculty Sponsor: Kristine Turko, Department of Psychology
1:30 p.m., Bracy Hall Room 02
The Effects of Caffeine on Memory and Attention
The use of caffeine in college students is becoming more prevalent due to the increase in the variety of ways that caffeine is delivered (e.g., energy drinks). Students often consume caffeine with the idea that it will help them perform better on exams and assignments. These students want to be better focused and remember more, assuming there is a positive correlation between caffeine, memory and attention. Our research examines the relationship between these variables, with the intent of determining the dose(s) at which caffeine benefits and inhibits cognitive processing.

Mara Bowman (physician assistant studies)
Faculty Sponsor: Steven Croston, Department of Physician Assistant Studies
10:40 a.m., Tolerton and Hood Hall Room 100
Statins in the Treatment of Hyperlipidemia: Do Risks Outweigh Benefits?
Statins have become the standard medication used in the treatment of hyperlipidemia. However, there are still many people who have concerns about or are unable to tolerate them. I believe it is important for clinicians to fully understand the risks and benefits of these drugs in order to properly treat each individual patient effectively and appropriately. The present study will attempt to examine the various risks and benefits of statins through evidence-based analysis and evaluation of current literature to determine whether these risks potentially outweigh the benefits, especially when considering age and gender. Based on results found, physician assistants along with other clinicians will further be able to incorporate these findings into their practice; either continuing to heavily rely on statins or look to turn to other therapeutic options.

Nicholas Boyde (chemistry major)
Faculty Sponsor: Scott Mason, Department of Chemistry and Biochemistry
10:20 a.m., Engineering and Business Building Room 206

The Synthesis and Characterization of Pyrazolylsilane Ligand Complexes
Scorpionate ligands have progressed greatly since their first developed. These molecules are known as ligands because they bind strongly to other compounds. The ligand used in this study was a silicon based ligand known as pyrazolylsilane. Pyrazolylsilane was synthesized and used for novel synthesis, or binding to metals in a way that have never before been accomplished. This synthesis could lead to a series of new or varied properties in the molecule, resulting in changes in the chemical and physical structure. Once successful binding has been shown, pyrazolylsilane will characterized and tested for new material science applications, such as the possibility of uses in the semiconductor industry.

Hong Cao (communication major)
Faculty Sponsor: Govind Shanadi, Department of Communications
1:50 p.m., Engineering and Business Building Room 206
Agent Orange: the Heroes
Agent Orange was a defoliant used by the United States during the Vietnam War. The chemical was used to clear foliage in order to increase visibility. One of the side effects were the numerous health affects the chemical had on the civilian population. Although it has been around 40 years since the end of the war, the effects on those exposed to the chemical as children are still with us. This documentary profiles three Vietnamese victims who still suffer its effect.

Holly Cappelli (biochemistry major)
Faculty Sponsor: Nicole Johnson, Department of Philosophy and Religious Studies
10:40 a.m., Engineering and Business Building Room 206
God's Will vs. The Pill: Challenging Catholic Conceptions of Contraception
Catholic Church doctrine prohibits the use of contraception, yet many Catholics in America still use various forms; some studies indicate that a vast majority of sexually active Catholics have used or do use some form of contraceptive. This study facilitates a dialogue between Catholic theology and human physiology and raises the question of whether barrier or hormonal methods of contraception are truly incompatible with Catholic beliefs regarding procreation and the sanctity of life. Bringing together examination of the Second Vatican Council study commission reports, the papal encyclical *Humanae Vitae*, and knowledge about the female reproductive cycle, the study challenges the notion that the use of contraceptives defies the will of God.

Brett Cline, Stevie DiGiacomo and Cassandra Markel (psychology majors)
Faculty Sponsor: Tamara Daily, Department of Psychology and Neuroscience
10 a.m., Tolerton and Hood Room 100
Sibling Relationships in the College Years: Effect of Gender, Birth Order, and Age-Spacing on Sibling Closeness
One of the most important relationships in the lives of young adults is the sibling relationship. In the field of developmental psychology there is still much to be explored about young adulthood and males and females are argued to have different personality traits which may be influenced by birth order. The current study will explore the question: are gender, birth order,

and age spacing related to closeness with siblings during young adulthood? We surveyed a group of peers about their relationships with their siblings. We hypothesized that females, first born children, and siblings farther apart in age would report greater closeness with their siblings.

Kyle Dreger (computer science major)
Faculty Sponsor: John Kirchmeyer, Department of Computer Science and Information Systems
10:20 a.m., Tolerton and Hood Room 100
WePray, Internet-powered Praying Mobile Application
What if you could pray for someone's specific needs - halfway around the world? Welcome to Internet-powered praying. Today's best mobile applications are ones that connect people through all mediums. To further my knowledge in the areas of mobile development, database design, WebServices and final submission to the Apple App Store, I wanted to create an iPhone application centered around helping others pray. The application, WePray, will be driven by my own database and allow users to submit their prayers online. Once a prayer is submitted, people can start praying for you with my new "+pray" counter. Throughout WePray's development, I took a hard look at the realities of creating a web-driven application and the difficulties thousands of developers face as they compete for top spots in the App Store.

Melissa Dreger and Ashley Henriques (exercise science majors)
Faculty Sponsor: Ron Mendel, Department of Human Performance and Sport Business
1:30 p.m., Engineering and Business Building Room 203
Effects of Temporomandibular Joint Repositioning Using an Oral Appliance on Lactate Levels during Anaerobic Exercise in College Males
The well-known idiom “bite the bullet” has been around for centuries, and has often been used to describe instances where biting down on an object helped individuals overcome stress. With this idiom in mind, UnderArmour partnered with BiteTech Inc. to create a product tailored toward overcoming the stress endured during exercise. This product, known as Armourbite, is a wedge that is placed on the lower jaw to lessen the pressure caused by clenched teeth during times of stress. With this decreased pressure, the performance sapping hormones cortisol and lactate will not be as pronounced during exercise; therefore, allowing the athlete to perform longer and ultimately better. At the time of publication, not all data collection was complete.

Cassie L. Durdel, Cayla L. Ovalle, Jennifer M. Meyers and Krickett M. Penn (psychology majors)
Faculty Sponsor: Tamara Daily, Department of Psychology and Neuroscience
2:10 p.m., Bracy Hall Room 02
The Effect of Tattoo Status and Gender on Perceptions of Relationships
Many factors impact how people perceive others who have body modifications such as tattoos and piercings. Such perceptions can be important when it comes to securing a job, making friends or simply engaging in conversation with a stranger. Therefore, we investigated if perceptions of people with tattoos differ based on the type of social interaction and gender of the target. We surveyed a college population to see if our hypotheses were supported. We expected to find that the tattoo status of individuals, regardless of their gender, would affect

perceptions of others with tattoos. We predicted that participants with tattoos would be more comfortable associating with others with tattoos in a broader range of social interactions.

Nancy Faulhaber, (psychology and art major) Katie Crider, Lisa Brown, Matt Beck and Sarah Trecarichi (psychology major)
Faculty Sponsor: Kristine Turko, Department of Psychology and Neuroscience
4:10 p.m., Engineering and Business Building Room 203
The Effects of Mood on Text Message Interpretation: Texting and Communication
SMS text messaging has become a prevalent means of communication in modern society. The current study examines whether or not text messages are properly expressing the intent and emotion of the content. With the addition of manipulating the "interpreters" mood, we studied the effects that mood has on text interpretation. The specific purpose of the present study is to understand how individuals in a positive, negative and neutral mood interpret SMS text messages. It is expected that individuals in a more positive mood will interpret text messages in a more positive way and individuals in a more negative mood will interpret text messages more negatively. We also expect to find a difference between the way that males and females interpret messages; hypothesizing that the effects of mood induction will be greater for females. With SMS text messaging taking over a large portion of our daily communication, it is important to understand how effective it is.

Tyler Gorham, Cali Granger (biology major), Celia Kovalak (psychology major), Zachary Melvin, Mary Mahoney (environmental science majors), Elizabeth Karapandzich (communication major) and Lauren Frost (middle childhood education major)
Faculty Sponsor: Charles McClaugherty, Department of Biology
10:40 a.m., Bracy Hall Room 04
Wasted: A Study of Food Waste at the University of Mount Union
We investigated the amount of food waste produced in the Kresge Dining Commons in order to make recommendations for food waste management at the University of Mount Union. Using a complete audit over a five day period, we found that over 500 pounds of food were wasted per day. We evaluated various methods in order to minimize and manage food waste in a cafeteria setting. Based on our predicted volume of food wasted, we recommend education, in conjunction with a pulper and/or an in-vessel composter would best suit the University of Mount Union.

Sarah Hayes and Cassey Martin (theatre majors)
Faculty Sponsor: Douglas Hendel, Department of Theatre
1:30 p.m., Engineering and Business Building Room 206
Snow White the Musical: An exploration in producing children's theatre
Is children's theatre really all that different from theatre for adults? Do children gain anything from participating in theatre? The answer to both of these questions is yes. Through a children's production of Snow White the Musical, Sarah Hayes and Cassey Martin discovered that producing a show for an audience of children, performed by child actors created a lot more "drama" than anyone could have anticipated. With a tight budget and a lack of volunteers there were struggles, but in the end, the students learned a lot about theatre, and we did too. We

discovered that theatre education is important to the growth and development of children. It teaches foundational skills like reading and speech as well as social skills and group dynamics. This is inherently unlike theatre for adults which is primarily used as an emotional outlet (entertainment) and a forum for social commentary.

Tyler E. Hickerson and Blake W. Rhein, Jr. (finance major)
Faculty Sponsor: Patricia Matthews, Department of Economics, Accounting and Business Administration
3:50 p.m., Bracy Hall 04
Top Down Economic Analysis of Hewlett Packard and Apple
Interested in learning about how to invest in your future? Come to our presentation which focuses on five key areas that are used to make proper investment decisions. Our emphasis will be on the technology industry and specifically Apple and Hewlett Packard. Technology has become increasingly important in everyone's life. See for yourselves why now is the time to invest in this industry as well as learning about what drives this field. This short presentation will benefit you for the rest of your life.

Joshua Jones (biochemistry major)
Faculty Sponsor: Scott Mason, Department of Chemistry and Biochemistry
3:30 p.m., Bracy Hall Room 04
Synthesis of Novel Pyrazolyl Borate Ligands
The study of pyrazolyl borate molecules is an area of growing interest due to their possible applications in water treatment and medicine. A commonly used name for the pyrazolyl borate family is the scorpionate ligands. What do the pyrazolyl borates and a scorpion have in common? The answer is form. A traditional scorpionate ligand is a molecule which can bind to a metal with three different sites. The first two sites sit at the front of the molecule and act as "pincers" which grab the metal while the third binding site acts as a "stinger" and attacks the metal from the top. The use of the three binding sites allows the scorpionate ligand to form a very tight bond to various metal atoms; however, tighter bonds can be made.

Laura Jo Kibby (chemistry major)
Faculty Sponsor: Scott Mason, Department of Chemistry and Biochemistry
3:50 p.m., Bracy Hall Room 02
Effects of Web-Based Tutoring on Student Learning and Participation in General Chemistry
Have you ever used a tutor on campus? As discovered by this study, technology can become an important role in the tutoring experience provided by the University of Mount Union. This study investigated the effects of online tutoring on students of the general chemistry classes, CH 110, in fall of 2011. This study examined which tutoring style allowed students to accomplish the following: receive better grades, study for exams easier, to easily communicate with peers as well as the tutor and to alleviate "chemistry phobia." The results of this study can apply to any student, tutor or professor in order to make tutoring a more effective experience.

Tyler Kleeberger (communication major)
Faculty Sponsor: Len Cooper, Department of Communication

3:30 p.m., Engineering and Business Building Room 206
Discovering a New Way to Peace Within our Relationships
What if we all really could get along? How would we do it? What does that kind of relationship look like? A relationship like that is rooted in having a proper view of the world around us. It requires letting go of our egocentric and selfish tendencies and in order to find the common bond that exists throughout all of humanity. Instead of everyone looking out for their own interests, suddenly your interests simply merge with the people around you through empathy and encounter. Instead of separating ourselves from each other, we enter into genuine relationships that involve the good of everybody. This is the kind of relationship I hope we can all begin to discover; and it just might have something to do with peace.

Erin Krafka (cognitive and behavioral neuroscience major)
Faculty Sponsor: Michael Knepp, Department of Psychology and Neuroscience
10:40 a.m., Bracy Hall Room 02
Birth Control Reverses Follicle and Luteal Phase Attraction Ratings to Male Body Odors in College Women
This study compared differences in attractiveness between women on and off birth control during different phases of the menstrual cycle. Previous studies have shown that oral contraceptives alter the attraction between members of the opposite sex. Females rated photos of males and their corresponding odors during both phases of their menstrual cycle. It was hypothesized that females not on birth control would change their ratings in different phases of the menstrual cycle and that females on birth control would have similar ratings during both phases. A significant interaction was found in which females not on birth control increased their ratings for the shirts as they transferred from the luteal phase into the follicle phase, whereas females on birth control had the opposite effect ($F(1,42)=6.908$, $p<.02$). A trend was found that females on birth control increased their ratings for the photos between the two phases of the menstrual cycle ($F(1,49)=3.361$, $p<.10$).

Kayla Lengel (Japanese and history major)
Faculty Sponsor: Hamako Furuhata-Turner, Department of Foreign Languages and Cultures
10:20 a.m., Engineering and Business Building Room 203
From Japanese to English: Culture in Translation
Vocabulary unique to a country can stem from the culture observed there. So, while translating from Japanese to English, it is important to understand the culture in order to appreciate the context of the passages. A prime example of cultural understanding would be knowing the differences language-wise between a student speaking with a student, and a student speaking with a teacher. The differences are far greater than one unfamiliar with the culture could comprehend. Context appreciation makes it easier to translate accurately, and can prevent a loss of original meaning. In the course of translating a Japanese comic book, the researcher obtained first-hand experience with cultural appreciation and the benefits it provided for translation.

Justen Little and Michael Ison (mathematics major)
Faculty Sponsor: Sherri Brugh, Department of Mathematics

10 a.m., Engineering and Business Building Room 203
The Perfect Treasure Map
Calling all Pirates! Have you ever forgotten where you buried your treasure? Tired of using a metal detector? The latest breakthrough in geometrical software may be able to help you keep tabs on your buried treasure. Don't believe us? We have proof! We will use the software program GeoGebra to illustrate how to find a buried treasure when one of the landmarks on the treasure map is missing. We will explain two different methods, one using properties of triangles, and the other using properties of reflections and rotations, that will show that the treasure is always in the same spot, no matter where the missing landmark is placed.

Leann May (media computing major)
Faculty Sponsor: Louise Moses, Department of Computer Science & Information Systems
3:30 p.m., Engineering and Business Building Room 203
Five Hole Wholesale - Custom Web Design
The Media Computing SCE involves creating an interactive website and a collection of advertising materials for a mock company, “Five Hole Wholesale.” The goal of the project is to take a never before used program, Adobe Flash Catalyst, and create the company’s website from the ground up. Catalyst, in the process, will be evaluated in comparison to previously used programs in the major in terms of functionality, ease of use and quality of the end product. The findings through this research will be used to compile a report discussing the advantages and disadvantages to the program. Independent learning and research are essential aspects of the project, with the aim to enhance and grow skills held prior to starting the assignment. Skills from other disciplines such as marketing, art, and communication will be incorporated as well.

Jennifer Mills (English: literature major)
Faculty Sponsor: David Thiele, Department of English
1:50 p.m., Engineering and Business Building Room 203
The Effects of Rape and Revenge on Lavinia in Titus Andronicus and its Adaptations
Human sacrifice. Murder. Gang rape. Mutilation. Adultery. Ritualistic butchery. Cannibalism. William Shakespeare’s earliest tragedy, Titus Andronicus, portrays each of these grotesque subjects and how they affect the female character Lavinia. Specifically, in its representations of Lavinia’s rape and mutilation which portend revenge, Titus Andronicus, in its original Shakespearean literature and the modern adaptations of Jane Howell and Julie Taymor, represents Lavinia as challenging and complicating conventional notions of femininity. This is accomplished through costuming, theatricality, and acting or directorial choices. While Shakespeare, Howell, and Taymor may not agree with each other in all aspects regarding this character, they all suggest that women’s gender roles are not always clear cut or subjugated by patriarchy, specifically in regards to the enactment of revenge.

Nicholas Mock, Amanda Mervine (English: writing majors) and Jesse Phillips (English: writing and religious studies major)
Faculty Sponsor: Gwen Schwartz, Department of English
1:30 p.m. Bracy Hall Room 04
One size does not fit all: An issue of space and size in college classrooms

Does one size fit all? Are the facts all that matter? Apparently, in the basement of Chapman Hall, one desk size—small—is supposed to work for every student. But it doesn't. This presentation will illuminate research conducted on student desk sizes, the growth of human girth, and the problem current students have fitting into old, tablet arm wooden desk chairs. We will focus on Chapman Hall desks and classroom size, but we will also show that the issue isn't limited to old college buildings. Businesses across America are facing similar problems and some are coming up with interesting but costly solutions. We will shed light on a growing national problem and, at the same time, we will describe the genre of writing creative nonfiction.

Michael Sean Pierce (criminal justice: applied and history major)
Faculty Sponsor: Theresa Davis, Department of History
1:50 p.m., Bracy Hall Room 04
The Will behind the Sword
Will Behind the Sword is a project that attempts to explain why and how the Saxons, a Germanic tribe from Northern Europe, invaded and settled the island of Britain. The project will describe the culture of the Saxons, the events of the time that may have prompted the Saxons to move north. Details from the actual invasion will also be discussed as well. To support this information primary documents ranging from written accounts and archaeological finds will be utilized to try and grasp the Saxon culture and their actions. While this project will explain theories no one definitive answer may explain the Saxon invasion of Britain that eventually led to a unified Anglo-Saxon England.

David Jordan Pirtle, Justin Michael Rice and David Giancola (exercise science major)
Faculty Sponsor: Ron Mendel, Department of Human Performance and Sport Business
1:50 p.m., Bracy Hall Room 02
Effectiveness of Compression Garments on Wrestlers' Recovery Time
Have you ever completed a grueling workout and thought there was no way you were even going to be able to get out of bed the next day? What if there was a way to increase the body's natural recovery processes in order to not only get out of bed the next morning, but also be able to complete a second workout the following day. This study explored the effectiveness of compression garments on increasing recovery time in the lower extremities. It was hypothesized that through the application of compression on the body, recovery processes would be increased allowing the subjects to digress back to equilibrium faster. This study was targeted towards high performance athletes in need of performing at high levels repeatedly on a day-to-day basis. By athletes being able to achieve a faster recovery rate, the capacity for repeated increases in performance is endless.

Erin Richardson (athletic training major)
Faculty Sponsor: Alex Rhinehart, Department of Human Performance and Sport Business
2:10 p.m., Engineering and Business Building Room 206
Talocrural Fracture-Dislocation With Associated Weber C Fracture and Posterior Tibialis Entrapment: A Case Report for Rapid Return To Play

Ankle injuries are extremely common in competitive athletics. These injuries can often result in season or career ending surgeries. This case study illustrates the efficacy of using early movement to decrease recovery time and hasten return to play in an ankle fracture-dislocation with an associated muscle entrapment. This is an unique case of early mobilization and rapid return to play following an unusual surgical repair. Recently, in the athletic population, there has been a shift to more accelerated rehabilitation protocols, and this case study presents a protocol that may be beneficial in decreasing time missed without compromising the health and long-term prognosis of an athlete.

Amy L. Ring (psychology major) and Brittany Rivers (psychology and Japanese major)
Faculty Sponsor: Kristine Turko, Department of Psychology and Neuroscience
1:50 p.m., Tolerton and Hood Room 100
Stress, Anxiety and Cognitive Performance
Our research examined the effect of anxiety on participants' ability to perform simple tasks. Our participants were given three simple tests; 10 basic math questions, 10 Stroop color tasks, and 10 matching shape questions. Anxiety was induced by presenting noise while participants completed the tasks. Three noise levels were compared: constant noise, random noise, and our control (no noise). We predicted that the constant noise group would have a higher reported increase in stress and lower cognitive ability, and that our control group would have the lowest stress and highest accurate scores on the tasks. Our predictions were not supported. Our data suggests that the presentation of noise does not affect cognitive performance. Performance and anxiety levels were statistically comparable across all three conditions.

Brittany Rivers (psychology and Japanese major)
Faculty Sponsor: William Coleman, Department of Communication
1:50 p.m., Tolerton and Hood Room 100
Infanticide in China: The Repercussions of a Gender-Bias Generation
The trend of killing off female children is nothing new to history but with an increase in medical and technological advances, this trend has caused the gender gap within rural China to skyrocket in recent decades. In a society where sons are praised and families are only able to have one child, girls are at an extremely high risk of being killed off. With the success of China's decrease in population, many of the world's leaders seem to ignore the methods of forced abortion, infanticide and forced sterilization and instead praise China for its "effective" method of population control. Looking at multiple approaches such as; economic, religious, historical and cultural; research articles, books and historical documents were analyzed to determine the dangerous implications of this gender biasness.

Jessica Schobert (Japanese and criminal justice major) and Kassandra Turner (Japanese major)
Faculty Sponsor: Hamako Furuhata-Turner, Department of Foreign Languages and Cultures
3:30 p.m., Tolerton and Hood Room 100
Translating and Understanding Graphic Novels
In theory, translation is simple: a document that begins in one language is changed to another. In practice, however, there are many processes involved in translation and many things to consider. This presentation will look at the translation projects of two students in the Japanese

department of Mount Union, each of whom translated a previously un-translated graphic novel from the original Japanese into English. Specifically this presentation will explore some of the major challenges of translation between these two languages, including grammar and structural differences, gender differences and level of politeness in speech.

Gregory Smith (English: literature major)
Faculty Sponsor: David Thiele, Department of English
3:50 p.m., Tolerton and Hood Hall Room 100
Framing Responsible Readership: The Reader's Role as a Character in "Heart of Darkness" and "Life of Pi."
Have you ever gotten confused when reading a story within another story? Which character belongs where? What is being communicated from one story to another? And where do you as a reader fit into all of these stories? In examination of Joseph Conrad's "Heart of Darkness," and Yann Martel's "Life of Pi," the reader is thrown into this mix as character being told a story, and being expected to pass that story on. Recognizing your role as a character within these frame narratives will shape the frames that you have for every other book you read.

Ben Swope (mathematics major)
Faculty Sponsor: Anne Triplett, Department of Mathematics
2:10 p.m., Tolerton and Hood Hall Room 100
The Time Reckoner: How to Mentally Calculate the Day of the Week for any Given Date
Have you ever wondered on which day of the week your birthday occurred in the past or will occur in the future? Have you ever wondered on which day of the week September 7th, 1752 occurred? Would you like to know on which day New Year's Day 2018 will fall? I can help you out! My project will show you how to determine the days on which dates in the past or the future occurred or will occur. You will not need to consult a calendar, but you will only need a mathematical calculation to find your answers.

Marcus A. Williams (finance major) and Daniel J. Tomola (accounting and finance major)
Faculty Sponsor: Patricia Matthews, Department of Economics, Accounting and Business Administration
10 a.m., Bracy Hall Room 02
Top Down Approach of Investing in the Retail Industry
Have you ever wondered how the state of the U.S. economy and the health of the retail industry affects your local department stores? Attend this session to learn how each of these are related and how they impact the success of individual retail companies. Using a top-down analysis of the retail industry we will discuss the current state of the U.S. economy and its impact on the retail industry as well as the individual retail establishments, Kohl's, J.C.Penney and Macy's. The analysis will be based on examining statistical, financial and technical information and will answer the questions, Is now the time to enter the market? Is the retail industry a good place to invest? Which of the three company's appears to be the strongest and why? And technically speaking, is the timing right to make an investment in any of these companies?

Kelly Wiseman (biology major)
Faculty Sponsor: Lin Wu, Department of Biology
4:10 p.m., Tolerton and Hood Hall Room 100
Actual and Assumed Oxygen Saturations Levels in an Ohio Level III NICU
Not all mothers have the opportunity to support their babies for 40 weeks. Today, infants can survive at 24 weeks, but that doesn't mean that the road is easy. It is crucial that they receive the right amount of oxygen to support their growth and development. In the past, hospitals gave infants high, unrestricted levels of oxygen - leading to disease and blindness. During this past summer, I evaluated the respiratory support of infants in Akron Children's Hospital's Neonatal Intensive Care Unit. I monitored patients' respiratory rates and oxygen levels daily. My study provided the neonatal physicians with data showing that the infants were not in the optimal range of hemoglobin saturation.

Alex Wolfe (mathematics major)
Faculty Sponsor: Anne Triplett, Department of Mathematics
3:50 p.m., Engineering and Business Building Room 203
Calculating Beauty: Mathematics in Art and Nature
They say that beauty is in the eye of the beholder, but is it possible that some things are inherently more beautiful, or at least more visually pleasing than others? Some may say yes. Mathematical concepts like the Golden Ratio, also referred to as the "divine proportion" or "golden section," and the closely related Fibonacci sequence have been utilized by artists like Leonardo da Vinci, musicians like Mozart and even Mother Nature herself to create "beautiful" works of art, at least in the mathematical sense of the word. The research presented here looks at some of these fascinating works and determines if beauty can, in a sense, be calculated.