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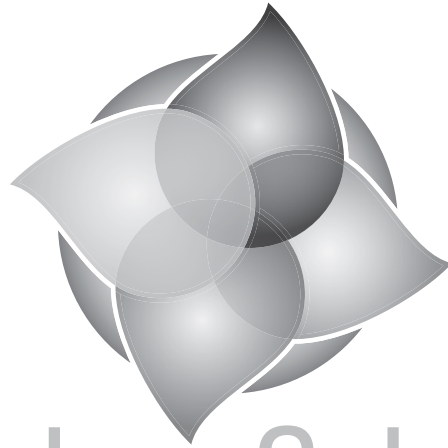
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Sixth Annual



Research + Scholarship
SYMPOSIUM

April 1, 2015

cedarville.edu/RSSymposium

PODIUM PRESENTATIONS

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Ian W McQuaid Aaron Countryman	Undergraduate Students	Engineering and Computer Science	Wearable Computing with Google Glass	Ian W McQuaid Aaron Countryman
	This presentation reports on the results of student research and development in the area of mobile computing for Android devices. Specifically, it discusses students' experience implementing mobile applications on Android smartphones and Google's wearable Glass device. Individual technologies addressed in the presentation are head-mounted computing and displays, voice recognition and control, wireless communication, augmented reality, telepresence, and user interface development. This project was developed in cooperation with the Air Force Research Labs at Wright-Patterson Air Force Base.			
Kyle Bradley	Undergraduate Student	Engineering and Computer Science	FEA Analysis of the Taper-Trunnion Interface in a Metal on Metal Hip Implant	Kyle Bradley
	Metal on metal total hip replacements are a common procedure in which the hip joint is replaced with a metal stem, a metal femoral head and a metal socket, usually made of titanium or cobalt chromium. The stem has a tapered region (trunnion) where the femoral head is impacted onto. This creates what is known as the taper-trunnion interface within a hip implant. However, these hip implants seem to be very susceptible to fretting corrosion, where the corrosive fluid environment of the body accelerates the process of wear between two contact surfaces. Previous research has suggested that the design parameters of the taper and the trunnion could have a significant effect on the amount of fretting corrosion that is occurring at this interface. The parameter that showed the most promise is angular mismatch, or the difference in angles between the taper and the trunnion. Utilizing finite element analysis, we tested five different degrees of angular mismatch using a simplified model of the interface. We then recorded the maximum contact stresses along with the measured micro-motion of the trunnion against the taper. Finally we report and compare the difference in fretting work done between the different angular mismatched specimens.			
Helena N Sullivan	Faculty	English, Literature, and Modern Languages	Resuscitating Paideia: Reading Literature for Wisdom	Helena N Sullivan
	Cedarville's English Department is launching a new journal called Resuscitating Paideia: Reading Literature for Wisdom. In this journal we will publish peer-reviewed articles that used biblically based wisdom as a lens through which to read particular texts. For this session, I would discuss the larger project of the journal — including normative readings of great books — and how this journal can benefit home educators who long to answer “Why are we reading this?” on behalf of specific texts. Dr. Leland Ryken, Dr. David Urban, and Dr. Lou Markos have written articles on Milton, Tolstoy, and Shakespeare for our first issue. This journal will be available online for free, and we're launching it in April.			
Juliann R Phillips	Undergraduate Student	English, Literature, and Modern Languages	Captivity of the Mind: A Postcolonial Analysis of “The Man Who Liked Dickens”	Juliann R Phillips
	Ever since the age of Columbus, the ideas of travel, adventure, and exploration have pervaded Western consciousness. In 1933, Evelyn Waugh, a social critic and satirist (Longman 2818), published a short story entitled “The Man Who Liked Dickens” that The Longman Anthology of British Literature describes as “a cautionary tale of what might happen to an ordinary, if wealthy, Englishman venturing ‘beyond the pale’ of European civilization in a disastrous journey to the Amazon” (2818). This chilling story centers around the misfortune of Henty, a rich and uneducated Englishman, who gets swept along on an expedition to the jungles of Brazil. Throughout the journey, several disasters occur, but the most troubling disaster appears at first to be advantageous for Henty. All of his companions either dead or having abandoned the adventure, Henty finds himself alone, lost, and near death in the Brazilian forest without any hope for aid. However, Mr McMaster, an English-speaking half native finds him and nurses him back to health, asking only that Henty read him his Dickens novels in return for the care he has given. Though Henty is at first unaware of his plight, he eventually discovers that Mr McMaster is keeping him captive and will never allow him to return to England. In this story, Henty's captivity provides a physical representation of the way in which Waugh inverts the effects of Eurocentric and Universalistic thinking that Postcolonial scholars generally recognize. Instead of those whose culture is being perceived through a Eurocentric or Universalistic lens experiencing “othering” and manipulation, Waugh places those consequences on those who hold the malignant mindsets.			
Matthew K Werneburg	Undergraduate Student	English, Literature, and Modern Languages	A Daughter's Struggle to Individuate in “Einstein's Daughter”	Matthew K Werneburg
	Claudia Smith Brinson's short story, “Einstein's Daughter,” is a coming of age tale about a young girl who must delicately navigate her relationship with her mother in order to gain independence. The protagonist, who narrates the story, remains unnamed and is defined mostly in reference to her mother's lineage. The narrator begins the story with the concept that one's biologically inherited character traits largely determine one's future. Alluding to Einstein's theory of relativity, the protagonist uses her extraordinary speed to travel back in time and explore the previous three generations of families on her mother's side. She uses her observations to plot the probabilities of her own future based on the characteristics and lives of her predecessors. The protagonist's struggle for autonomy demonstrates how mother-daughter relationships perpetuate patriarchal gender roles, which inherently marginalize women. Additionally, the protagonist's flight at the story's end suggests that women must reject biological essentialism and individuate from their mothers in order to create a sense of self that deviates from patriarchal norms.			
Jesse D Lawhead	Undergraduate Student	English, Literature, and Modern Languages	Patriarchy and The Protestants: A New Historical and Feminist Reading of Marilynne Robinson's Gilead	Jesse D Lawhead
	In her novel Gilead, Marilynne Robinson establishes a correlation between the presence of Protestantism and constricting gender roles women experience in the United States. Living in 1956 Gilead, Iowa, seventy-six-year-old Pastor John Ames begins writing to his seven-year-old son in a series of journal entries after he is diagnosed with a terminal case of angina pectoris. In these journal entries to his son, Ames records the histories of his reverend father, reverend grandfather, his own life, and present observations as the beauty of life continues to captivate him. Ultimately he hopes to “to tell [his son] things [he] might never have thought to tell [him]” had he been able to father his son longer. Notably, all of the previously mentioned relationships are between two males. John Ames, the narrator, examines his male ancestry as he writes to his male heir. The women of Gilead are wives or caretakers, and seem solely mentioned because of the males they are associated with. In the novel, Ames mentions his former wife, who dies in childbirth early in their marriage; his current wife, whose name is not given; Glory, the single daughter of a nearby family who takes care of her father and household; his mother; grandmother; and the wife of a man named Jack Boughton. Robinson marginalizes women in the text, making them of peripheral importance to the narrative, but of great importance to providing a window into the early 20th century's treatment of women.			

PODIUM PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Hannah E Rau	Undergraduate Student	English, Literature, and Modern Languages	English in the Amazon: Unhomeliness in Evelyn Waugh's "The Man Who Liked Dickens"	Hannah E Rau
In the short story "The Man who liked Dickens," Evelyn Waugh describes a cultural collision deep in the jungles of Brazil. The story's narrative centers around two men, one of whom is an Englishman taking what he believes to be a temporary exploratory expedition to Brazil. The other, Mr. McMaster, is a half-Brazilian, half-white landowner who loves the Dickens books he cannot read for himself. Henty, the Englishman, leaves home to escape his wife, who loves another man, and goes on an ill-fated mission to explore the unmapped regions of Brazil. Along the way, he loses his companions and ends up sick and alone in a jungle surrounded by natives with whom he cannot communicate. Mr. McMaster however, is an exception because he speaks English and is drawn to Henty because he too speaks English. He nurses Henty back to health and, as payment, asks him to read aloud every day from one of his Dickens novels. Through the character of McMaster, Waugh demonstrates how unhomeliness, resulting from cultural colonization and mimicry, can cause desperation and loneliness when the colonized are alienated from both the colonized and colonizing groups.				
Adam J Wagner	Undergraduate Student	English, Literature, and Modern Languages	A Queer Poet in a Queer Time: John Milton and Homosexuality	Adam J Wagner
Scholar David Hawkes refers to John Milton as a "Hero of Our Time." Milton's written works, including his poetry and political treatises, contain cultural and theological insight applicable not only to his 17th Century English culture, but 21st Century American culture as well. As homosexuality continues to enter the public sphere in Western society, many scholars are uncovering past insights about how sexuality has evolved. Milton's literary texts provide insight into his own sexual orientation and how people viewed human sexuality post-English Renaissance. Homosexuality is a broad topic, but Milton's works give insight into three main areas—homosexual sex, sexual orientation, and gay marriage. In his own Protestant Puritan life, Milton believed that the physical act of homosexual sex was sinful; during his life, the government stigmatized the act as a crime punishable by death. While some scholars argue that Milton had a homoerotic relationship with his close friend Charles Diodati, an analysis of their letters to each other and Milton's elegy to Diodati after his death prove counter. In early modern England, philosophers highly valued male love in Platonic terms, similar to the contemporary idea of a bromance; Milton and Diodati's relationship was not sexual or romantic. However, Milton's views about divorce and his political tracts leave room to include the legality of gay marriage. Milton believed that the government should not interfere with marriage, that gender roles should be egalitarian, and that the goal of marriage should be an intellectual union of two people to glorify God. Therefore, his arguments, set in a contemporary context, allow for the legalization of gay marriage. Milton had an extreme influence on poetry, literature, theology, politics, and thinking in his day, and his wisdom continues to envelop current ideology. It is the duty of twenty-first century scholars to learn from the past and apply it to the present in all social issues.				
Alexander MacPhail-Fausey	Undergraduate Student	English, Literature, and Modern Languages	Of Education: Milton and the Common Core State Standards	Alexander MacPhail-Fausey
This essay compares John Milton's views of educational reform during the 17th Century in England to the Common Core State Standards currently being developed in the United States. The essay argues that the Common Core is a postmodern reinvention of Milton's education reform presented in his tract, "Of Education." It outlines the education Milton received, and how that compared to the pedagogy Milton developed and implemented in his own school. Then, Milton's pedagogy is compared to the implementation of the Common Core State Standards, specifically focusing on the career and college preparation goals presented by the Common Core and difference in religious and moral emphasis.				
Tyler C Detrick Adam J Wagner Alexander MacPhail-Fausey	Undergraduate Students	English, Literature, and Modern Languages	Evangelicalism as Mental Slavery: A Miltonic Critique	Tyler C Detrick Adam J Wagner Alexander MacPhail-Fausey
In the 1960s, Billy Graham and Carl Henry heralded evangelical identity as the crusade that would bolster Christian witness in the modern age. Recent scholarship, however, has labeled the movement a dramatic disappointment. Historian D.G. Hart contends that mainstream Christianity has become so inclusive that the label "evangelical" has ceased to mean anything intelligible, and Mark Knoll echoes this critique by labeling evangelicalism a "scandal of the mind." Christianity's greatest hope for global gospel witness has proved a disappointment. One window into this failure may be found in the prose works of sixteenth century poet John Milton. Far from derived from modern concerns, the ecclesiastical and political turmoil of Milton's day closely resembles the issue of evangelical identity in the twenty-first century, and the poet's response to these controversies offers insight to Christianity's contemporary situation. Milton's critique of iconography, developed in his political tracts, reveals that mental slavery is the true scandal of the evangelical mind. While many scholars recognize the crisis of Christian identity in the twenty first century, Milton's theory suggests that evangelicalism's incompetence results from a failure to distinguish between the evangelical movement itself and the theological identity it signifies.				
Emma E Patterson	Undergraduate Student	Music and Worship	Oral Transmission: A Marriage of Music, Language, Tradition, and Culture	Emma E Patterson
There are a number of misunderstandings about ancient oral transmission that negatively affect the way musicians view music history but also the process of how music was and currently is conceived, recorded, and shared. A common misconception is that oral transmission of music is an ancient practice that occurred before written notation of music was developed. However, I seek to prove that there is a false dichotomy between oral transmission and written notation and I focus on the changing definition and importance of oral tradition. Firstly, I discuss the misconceptions of ancient oral transmission. Secondly, I examine the continuing development of research and definitions of oral transmission—which is changing our concept of ancient as well as contemporary oral traditions. Thirdly, I demonstrate how these traditions are still relevant in present, late modern times. Throughout this discussion I examine and engage with the pivotal specialists and research that has developed our view of oral tradition through time. To better understand these scholars' commentary as well as my own, it is important to note the combined concepts of oral and aural tradition. Oral culture refers to what is spoken and sung, and aural culture refers to what is heard and comprehended. Both are necessary for effective transmission to occur, and oral and aural methods are almost always simultaneously present in most societies. When aural culture is discussed here, it refers to the combination of both elements and is closely related to aural tradition. The most notable terms to differentiate are oral transmission and oral tradition. Typically oral transmission refers to the basic action of passing information, in this case music, through oral and aural means. Oral tradition, however, is the more general concept that synthesizes oral transmission, tradition, and culture. Despite misconceptions that music was primitive before composers started documenting it, oral transmission and tradition is actually an advanced method that is still incorporated in music today.				

PODIUM PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Lindsey E Pfeifer	Undergraduate Student	Music and Worship	Development and Dissemination: Deliberations on Spanish Music of the Renaissance	Lindsey E Pfeifer
	<p>Throughout history, every musical culture grew and developed under a specific set of influences, whether political, philosophical, or geographical. Varying sets of influences created likewise varying types of music. Spanish music, in particular, enjoyed an especially unique array of influences during the fifteenth century. My presentation explores these influences. How did the interaction of Spain's three major religions—Christianity, Islam, and Judaism—affect musical development? How did the newly unified government, ruled by Ferdinand II of Aragon and Isabella I of Castile, influence the musical culture? How did Spain's discovery and conquest of the New World facilitate the spread of Spanish music beyond its borders?</p> <p>These three factors made Spain distinct from other Western nations during the fifteenth century. In my presentation, I first describe the interaction of Christianity, Islam, and Judaism. This synergy created a rich, collaborative community of shared musical ideas, prompting the development of both sacred and secular genres. Next, I address the influence that Spain's unified government exerted on the musical culture. Historically, politics have played a substantial role in the development of music. Spain is distinctive in this respect because most other nations during this time were not unified under one ruler, whereas Spain was. This unique governmental structure in turn affected the musical culture. Lastly, I will explain how the spread of Spanish music and its interaction with native tribes in America impacted its development, both within and outside Spain's borders. Spain was particularly poised to both exert their influence and be influenced by the different people groups they encountered in the New World. These three factors would create a uniquely Spanish music culture.</p>			
Brittney Miesse	Undergraduate Student	Music and Worship	Vocal Techniques	Brittney Miesse
	<p>Across the various genres there are three prominent vocal techniques. In terms of vocal health and stamina, none of the techniques is distinctly superior. Specifically, this project will discuss the historical background and technical distinction between the Belt and Classical Vocal Techniques while exploring newer vocal practices like the controversial Estill technique. Having thorough knowledge of proper vocal technique can protect vocal folds from permanent damage and can restore folds that have experienced some already. After reviewing scholarly journal articles, books and interviewing professionals in both the classical and contemporary fields, this paper confirms that there is no perfect genre or even vocal technique; but rather, it depends on how you exercise the instrument that God has given you with wisdom and discretion. Vocal Coach Roger Beale states this: "If you go to sing a classical piece you do not use a belt technique or commercial style; likewise, if you go to sing a contemporary piece you don't sing in a classical style cuz you'll hurt yourself." There are ways to preserve your voice according to vocal coach Roger Beale and instructor Dr. Mark Spencer: allow yourself 8 hours of sleep, hydrate yourself, stay away from young children, wash your hands faithfully, don't be a teacher in a school and do not talk too much. According to the University of Iowa, teachers are 30 times more likely to experience vocal damage than any other job in the world. To conclude, it is not in the technique as originally thought where one achieves vocal health and stamina, as much as it is in the stylistic approach to using the voice wisely across the varying genres.</p>			
Carolyn S Gorog	Undergraduate Student	Music and Worship	Slashes, Dashes, Points, and Squares: The development of Musical Notation	Carolyn S Gorog
	<p>The development of musical notation has long been a popular topic of discussion among musicologists. All cultures in the world have music and different cultures had methods of notating music. The purpose of the research was to trace the development of music notation and to see if the modern methods of notation are superior to the older methods. The development of music notation in western music was closely tied to the church and the Gregorian chant. Early neumes resembled points and slashes, which developed into squares when the staff started to develop. The first staff was only four lines where our modern staff is five lines. Mensuration symbols developed when a need arose to measure and count time in music. These were precursors to our modern time signatures and clefs. The modern notation method is not better than the older methods, simply different, showing the age old saying "newer is not always better" to be true. As the oral developed into more of a written tradition, the way the notation was used changed. When neumes were first used they acted as a guide, and as time went on the notation used became closer to exact instructions, which is how our modern notation works. In each stage of notational development, the notation fulfilled the role it was called upon to play. In early neumatic notation, the neumes gave the amount of notes that needed to be sung, which with the oral tradition was all the information that was needed. The oral tradition and the written tradition now seem to be in competition with each other, like the Suzuki method and the traditional note methods. This was not always the case; the written tradition in the early tenth century supported the oral tradition. That does not make either method better than the other, only different. The research for this project was done through historical documentation; books on medieval and renaissance music theory and notation were used. Journal articles relating to this topic such as mensuration and music literacy were also used.</p>			
Kim M Tavierne	Undergraduate Student	Music and Worship	Conducting: How it came to be	Kim M Tavierne
	<p>When one thinks of a symphony orchestra he thinks of strings, brass, woodwinds and percussion. However, there is a very important component to that image that is missing, and that is the conductor. Conducting has evolved through the years from someone keeping a beat to an actual profession. My presentation will be diving into how conducting evolved from the very beginning. What is the history of conducting? Where did conducting come from? How did conducting evolve into a job? These are all questions that will be answered in this presentation.</p> <p>I will first address the primary question of the history of conducting. Conducting did not just come to be, it first came about in the form of time beating. Early Sumerian findings of time beating were in the form of cave and tomb paintings of a person appearing to be clapping in the midst of a song. Further into the presentation I will discuss how it evolved from cave painting time beating to a physical action used in the church called cheironomy. Cheironomy is the hand motions that a person would use to establish a beat and make sure that each singer was on pitch. There were many different hand signs ranging from strictly pitches to actual durations of notes. Each hand sign meant a different action that the singers were supposed to follow. The more advanced the hand motions became the more they resemble the conducting that is used today. Conducting today is a job that includes teaching music by not only keeping the musical group in time, but on pitch as well. Being a conductor today has two different sides. There are the professional conductors that are well known and their faces are all over billboards. Then there are the conductors that are the teachers in the classroom. Both kinds of conductors have the joys of sharing their love of music that was developed so long ago and has turned into a wonderful gift that can be given to the specific group or class. This presentation will conclude with an overview of the transition from time beating to how conducting is today.</p>			

PODIUM PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Elizabeth M Poore	Undergraduate Student	Music and Worship	Ruling the Market: How Venice Dominated the Early Music Printing World	Elizabeth M Poore
<p>This presentation attempts to prove that Venice was the main geographical center of music printing and publishing from the 1300s to the late 1500s using several economic, legal, and cultural factors. The primary research method was examining secondary sources on music printing, publishing, and European and Venetian history.</p> <p>From the 1300s to the late 1500s, Venetian commercial trade and activity, including book publishing, reached unheard of levels. Venice held a powerful position in the European economy and its merchants were able to leverage this to great advantage when the new technology of printing became available. The specialized business of music printing and publishing was dominated by Venetian companies, who produced more sheet music than the rest of Europe combined between 1530 and 1560. The economic success of Venice also created a legal framework that benefited the burgeoning music printing industry. The printing and publishing of music required considerable capital such as specialized type faces, but the government system and capitalist economy of Venice made it easier for entrepreneurs to finance music publishing enterprises. The Venetian government system also encouraged close personal or even family relationships between different printing and publishing companies. This created a culture in which competing companies frequently benefited from cooperation. This paper makes it clear that there were a variety of economic, legal, and cultural factors that helped to propel Venice to its preeminent position as the provider of printed music to Europe during the 1300s to the late 1500s. In the mid-Renaissance, when it came to printed music, Venice did indeed own the market.</p>				
David J Anderson III	Undergraduate Student	Music and Worship	Development of Renaissance Era Counterpoint: Senseless Stipulations or Scientific Study	David J Anderson III
<p>Music of today is composed using countless rules that have developed over the years. During the Middle ages, basic harmony was first used, but it was not until the Renaissance that harmony really flourished to become standard in most music. Counterpoint is, at its core, the study of harmony or quite literally point against point (note against note.) This paper delves into the conception of counterpoint and shows how it progressed to become a widely used technique that has unequivocally changed music to this day by exploring the different facets of counterpoint and studying the music theorists who pioneered and mastered counterpoint.</p> <p>Counterpoint is not limited to just note against note textures; rather, it encompasses three and four part harmonies as well. Each texture uses slightly different rules than the others and it slowly becomes progressively more complex as a melody becomes a duet, then a trio and finally a quartet with rich chordal structure.</p> <p>Counterpoint also uses different species. One can take an existing melody and break it down to the most basic specie with one whole note for each measure. Each specie starts subdividing these notes to allow more complex melodies with passing and neighbor tones, suspensions and more.</p> <p>Counterpoint was not fully developed at its conception. Rather, it grew and was molded by such composers as Franchino Gaffurio, who wrote the first music theory treatise, Gioseffo Zarlino, who wrote perhaps the most influential music theory treatise of the sixteenth and seventeenth century and Johann Joseph Fux, whose music theory book was studied by such composers as Bach, Mozart, Hayden and more.</p> <p>All of these developments allowed music to develop into an amazing assortment of polyphonic harmonies that interweave and compliment each other in incredibly intricate ways. These same rules have further developed and become standard for much modern day music. There is no doubt that counterpoint blossomed into a regimented school of thought that almost defines musical aesthetic beauty in today's culture.</p>				
Christa Johnson	Undergraduate Student	Music and Worship	J. S. Bach: The Good Lord of Influence	Christa Johnson
<p>Many musicians stand in awe of J. S. Bach's ability to create a masterpiece. In fact, few question his greatness as a musician, but the source of that greatness is a different discussion altogether. Was Bach's excellent musicianship a result of good DNA, or did other causes inspire his excellence? My paper aims to identify the external influences that shaped Bach into the musician that he was. What environmental factors influenced Bach? Did his education play a role in his composition style? How did his career positions affect his works? Did Bach unite his religious beliefs with his music?</p> <p>Many biographies of Bach indicate causes for his musical excellence other than his natural abilities. I expound on these items and discuss how each factor influenced Bach's compositions. First, I talk about Bach's educational background and give examples of how each of his scholastic experiences introduced him to different musical skills that he would later use to compose. Next, I highlight each of his major career positions and explain how each position inspired him to write different genres. Finally, I draw attention to Bach's religious beliefs and the influence that they had on his compositional style. These examples illustrate that Bach was a man who combined his natural musical abilities with his everyday circumstances and achieved many accomplishments as a result. From this research, I draw the conclusion that although Bach was a brilliant musician, he could not have achieved such immense success without the external factors such as his educational background, his career positions, and his religious beliefs.</p>				
Carolyn S Ticker	Undergraduate Student	Music and Worship	Music During the Reformation: Changing Times and Changing Minds	Carolyn S Ticker
<p>As music developed throughout the early centuries, its function changed according to the philosophies and principles governing the culture to which it belonged. This is readily apparent in the church, as one can trace the development of music in the worship service from the Medieval times to the Reformation and beyond. During the Protestant Reformation music's role in the church changed. My presentation seeks to discover how music was used in the different branches of Protestantism of the time and how its usage compared with other sects; specifically, I compared and contrasted what worship would have looked like in the churches of Luther, Calvin, Zwingli and the English monarchies. Building upon this, I then discussed how the reformer's views influenced the music of the surrounding secular culture and the schools, either hindering music's development in his respective country or allowing it to flourish and thrive. Next, I introduce how Luther in particular affected composers after him, specifically using examples from Bach's works and comparing both of these men's theological views. The presentation then concludes by asserting that music's role in worship changed drastically from earlier Medieval times, and the views of the leading reformers changed the way people in the surrounding culture viewed music, influencing both the educational system and many later composers of the Baroque period.</p>				
Sara K Chasse	Undergraduate Student	Music and Worship	The Magic in the Music of Disney	Sara K Chasse
<p>Walt Disney created a film industry that has captivated people of all ages for years, and the most important component of this industry is its nostalgic, thematic, and seemingly magical music. Disney music has made an impact in today's society since its beginning and I am going to explain why that is. I will explain this in three different ways. I will first discuss Walt Disney's vision for Disney music and how that has made it a success. Second, I will discuss how Disney music has stayed consistent over the years. Lastly, I will uncover research about how Disney music brings films to life.</p>				

PODIUM PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Jonathan E D Royce	Undergraduate Student	Music and Worship	A Conductor for the Ages	Jonathan E D Royce
	Herbert von Karajan played a key role in transforming the performance of music in Germany. I will show this by allowing the characteristics of Karajan as a conductor to show his impact upon Germany. I will also use his interest in film as well as Karajan's personal life that helped create a persona that will have a lasting impact on history not only in Germany but also in the world of music.			
Julia Brummel	Undergraduate Student	Music and Worship	The exploration of cultural and social ideologies behind the woman composers success in music composition.	Julia Brummel
	Music is an art that has been enjoyed since almost the beginning of time. This art has carried many traditions and ideologies with it that are still prevalent today. One such idea that began early on and is still an attitude that must be fought in today's musical culture, is that women are unable to be quality composers. For as long as music has been composed, men have dominated in writing and performing their own works. The lack of women composers throughout history is a subject that has interested many music historians. There are reasons behind this issue and many hypotheses about why there is such an uneven male to female ratio among composers. The purpose of this paper is to look into those ideas and explicate the different contributing factors to this issue. It concludes that throughout history, there have been significantly fewer female composers than male composers because of the cultural and social bounds that were put on women. The information presented in this paper is taken from various sources, including historical and social examples, other professors and historians who have studied the field of women in music and personal testimonies from well-known women composers. This paper will discuss why women did not pursue composition with more vigor, who and what was responsible for imposing biased ideas about women composers on society, and finally it will take a look at the impact that women have had on the music industry that would never have happened had they not entered the composing scene.			
Jennifer G Langton Ashtyn B Bush Samantha M Stacy Kelly J Schaffter Kaitlyn Howard	Undergraduate Students	Social Work	Social Media Advocacy	Jennifer G Langton Ashtyn B Bush Samantha M Stacy Kelly J Schaffter Kaitlyn Howard
	Our research project's purpose is to inform the local community on the ethics and effectiveness as well as the exploitive power of using social media to promote international and domestic causes. We will educate the public and professionals on the responsible use of social media in advocacy and the consequences of its misuse. We will achieve this goal by researching social media movements and their lasting effects in academic journals and major news outlets. We will then share these findings in a presentation, educating our audience and providing them with the knowledge necessary for responsible use. The presentation will compare, contrast and analyze four international campaigns conducted over social media, resulting in various outcomes. The campaigns are the ALS Ice Bucket Challenge, Kony 2012, the #FirstWorldProblems Hashtag Killer by Water is Life ,and #bringbackourgirls.			
Abby Sherman Bethany Ebben Emma Anderson Johnna Vanstrom	Undergraduate Students	Social Work	Suicide Tourism	Abby Sherman Bethany Ebben Emma Anderson Johnna Vanstrom
	The number of people traveling to other locations, including Switzerland, or different U.S. states, for the sole purpose of receiving assisted-suicide is increasing. This phenomenon is known as suicide tourism. Switzerland is a major destination for recipients globally, as noted by Saskia Gauthier, Julian Mausbach, Thomas Reisch, and Christine Bartsch (2014) in the article, Suicide tourism: a pilot study on the Swiss phenomenon. The influx of recipients travelling to Switzerland for the purpose of committing suicide is largely due to the country's lack of regulation in who might receive assisted-suicide. This issue is relevant in the United States, as Oregon, Washington, Montana, Vermont, and New Mexico currently allow physician-assisted suicide. This presentation will introduce suicide tourism through the examination of research, case studies, and statistics. We propose to explore the reasons behind the shift in societal attitudes toward assisted suicide and examine the issue from secular and Christian worldviews, as well as a social work perspective. This includes studying legal and ethical questions based on the value of suffering, the inherent worth of a person, and the risk presented to vulnerable populations. Additionally, we will introduce alternatives to suicide and opportunities for social action.			
Rebecca Neff Liz Widman Leslie Lopez Brittany Cowart Rebecca Aviles	Undergraduate Students	Social Work	The right to a safe and healthy birth	Rebecca Neff Liz Widman Leslie Lopez Brittany Cowart Rebecca Aviles
	<p>The right to a safe and healthy birth is included in the declaration of human rights — the intrinsic allowances that humans are obligated to be protected by on a global scale. These rights, however, for some pregnant women have been submersed by lack of transportation, education and skilled birth attendants. Financial constraints and difficulty in obtaining adequate healthcare are also issues of concern.</p> <p>A review of literature pertaining to three different countries, the United States, China and India, will be examined in light of safe and healthy birthing techniques for women worldwide. These countries were chosen due to their diverse injustice issues as it pertains to birthing rights. Education and advocacy efforts in relation to reproductive rights on a global scale will be discussed.</p> <p>Review of the literature not only reveals grave injustices for women and children but it also illuminates ways in which individuals can get involved to help promote the right to a safe and healthy birth. Several movements will be highlighted in order to provide the audience with practical advocacy, education, and relief effort implementations.</p>			

POSTER PRESENTATIONS

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Victoria Ames Grant Hooper Aubrey Juris Cole Knox Jack Lightbody Alexa Manthei Jacob Olejarczyk Benjamin Swenor Amiah Warder Emily Weindorf Taylor Vander Plas	Undergraduate Students	Science and Mathematics	Evidence for Secretion of a Netrin-Like Protein by <i>Tetrahymena thermophila</i>	Victoria Ames Grant Hooper Aubrey Juris Cole Knox Jack Lightbody Alexa Manthei Jacob Olejarczyk Benjamin Swenor Amiah Warder Emily Weindorf Taylor Vander Plas
<p>Netrin-1 is a pleiotropic signaling molecule with targets in many mammalian cell types. Though first characterized as a chemotactic signal involved in neuronal guidance during development, netrin-1 has since been found to have a regulatory role in angiogenesis, and is also used as a biomarker in certain cancers.</p> <p><i>Tetrahymena thermophila</i> are free-living protists that rely on chemotactic signals to find food, as well as to escape predators. Chemoattractants cause the cells to swim faster in the forward direction, while chemorepellents cause ciliary reversal, resulting in movement of the cell away from the noxious stimulus. We have previously found that netrin-1 is a chemorepellent in <i>T. thermophila</i>. More recently, we have detected netrin-1 by ELISA in both whole cell extract and secreted protein samples obtained from <i>T. thermophila</i>. In addition, we have immunolocalized netrin-1 staining to the cytosol of <i>T. thermophila</i> using an anti-netrin-1 antibody. We are currently running Western blots to determine the molecular weight of this protein and compare it to its vertebrate counterparts. Further experimentation is needed to determine the physiological role of this protein in <i>T. thermophila</i>.</p>				
Lin Pan	Faculty	Science and Mathematics	A Photo-detachment Study of Binding Energies of La-	Lin Pan
<p>Among the three candidates for negative ion laser cooling, La- is the most promising due to the strong transitions between its bound states. A direct energy calculation at the valence level [1] had been applied to La-. However, a comparison with the most recent experimental study [2] has shown there exists a range of disagreement of 17 ~ 90 meV in the energy values relative to the ground state. This research is a computational effort to determine the energies using a different method. By reproducing the photo-detachment cross section of La- and then lining it up with the experimental plot, the amount of shifts needed for the excited states and the ground states can be determined. In doing so, the main sources to the above-mentioned discrepancies can be identified, e.g. the differing amount of missing correlation energy in the ground state and the excited states. This presentation will be a summary of the progress that has been made toward the goal.</p> <p>[1] S. M. O'Malley and D. R. Beck, Phys. Rev. A 79, 023622 (2009). [2] C. W. Walter, et al, Phys. Rev. Lett. 113, 063001 (2014).</p>				
Heather G Kuruvilla	Faculty	Science and Mathematics	Interstitial Cystitis: the Estrogen Connection	Heather G Kuruvilla
<p>Interstitial cystitis (IC), or painful bladder syndrome, is an autoimmune condition with an unknown etiology. Common symptoms include urinary urgency, frequency, and bladder and urethral pain and burning. This condition, like many autoimmune disorders, disproportionately affects females; therefore, female sex hormones are hypothesized to play a role in the disorder. My hypothesis is that estrogen, both endogenous and synthetic, affects the severity of IC symptoms. Through surveying the available literature on interstitial cystitis, I have found that IC symptoms often correlate with low estrogen. My hope is that by understanding more about how hormones affect IC, we can come up with better treatment plans for IC sufferers.</p>				
Daniel A Benson Joshua A Sitler Alexander P Treide David Woodfield Denise Simpson Robert L Paris	Undergraduate Students and Faculty	Science and Mathematics	Evaluating Antioxidant Activity of Selected Plant Species grown in Cedarville, Ohio	Daniel A Benson Joshua A Sitler Alexander P Treide David Woodfield Denise Simpson Robert L Paris
<p>Over the past several decades, there has been an increase in the number of synthetic drug molecules developed and utilized to treat various conditions. Although these synthetic drugs have proven useful, there has been growing public concern regarding the potentially negative long-term effects of synthetic agents on the body. As a result, there has been an increased interest in identifying and utilizing plant extracts and purified compounds since they are perceived to be a more natural alternative to synthetic drugs. The goal of this study was to evaluate the specific antioxidant properties of alsike clover <i>Trifolium hybridum</i> when produced under differing growing conditions. The alsike clover was collected from the campus of Cedarville University, Cedarville, Ohio for testing. Alsike clover was removed from the field in January 2013, and transplanted indoors under grow lights for 14 days. These plants were then subjected to three separate 60-day treatments: control treatment - watering to field capacity with no fertilizer; positive treatment - watering to field capacity with fertilizer; and negative treatment - half of the water given to the field capacity treatment with no fertilizer. The rationale for choosing these different treatments was to evaluate the effects of specific growing conditions on bioactive secondary metabolite production in alsike clover. The biological evaluation was accomplished by conducting diphenylpicrylhydrazyl (DPPH) free-radical scavenging and Folin Ciocalteu assays to assess the concentration of polyphenolic compounds. Results from these experiments indicate that the biological and chemical profiles of alsike clover can be influenced by the environmental conditions under which the plants are grown.</p>				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Daniel B Kohl Grace Revenaugh Zachary L Curtis Jacob A Slinkman Victoria P Rollins Katherine D Havard Peter T Hykes	Undergraduate Students	Science and Mathematics	miR-146a upregulation of phagocytosis in human macrophage Sjögren's syndrome model	Daniel B Kohl Grace Revenaugh Zachary L Curtis Jacob A Slinkman Victoria P Rollins Katherine D Havard Peter T Hykes
<p>Sjögren's syndrome (SjS) is an autoimmune disease that attacks exocrine glands such as salivary and lacrimal glands resulting in severe dryness of the mouth and eyes. Previous studies discovered increased microRNA-146a (miR-146a) expression in peripheral blood mononuclear cells in SjS patients compared to healthy controls. Like all microRNAs, miR-146a negatively regulates specific genes through binding mRNA, leading to degradation or translational inhibition. Further investigation into the role of increased miR-146a expression in SjS revealed links to several immune functions including cytokine production, cellular migration and phagocytosis. The objective of this study was to further examine the relationship between miR-146a expression and the rate of phagocytosis in human macrophages. We hypothesized that increased expression of miR146a leads to upregulation of phagocytic activity. The study was conducted by transfecting human monocyte THP-1 cells with synthetic miR-146a. qRT-PCR was used to detect successful transfection of miR-146a into the cells. Phorbol myristate acetate (PMA) treatment differentiated monocytes into mature macrophages. Phagocytic activity was determined using a phagocytosis assay in which mock-transfected (control) and miR-146a-transfected cells were incubated with fluorescently labeled E. coli for five hours. A fluorescent plate reader was used to measure fluorescence intensity after five hours of incubation. Our results showed miR-146a expression at a level 13,000-fold higher in transfected cells compared to mock cells, indicating successful transfection of the synthetic miR-146a into cells. Phagocytic activity of the miR-146a transfected cells increased by 50.9% (n=3, p<0.0001) compared to mock-transfected cells, supporting our hypothesis. Further research may reveal the mechanism by which miR-146a upregulates phagocytosis. More studies are required to investigate the link between monocyte phagocytosis and SjS pathogenesis.</p>				
Laura Klodnicki	Undergraduate Student	Science and Mathematics	Physician Assisted Suicide: Promoting Death with Dignity or Empowering Exploitation?	Laura Klodnicki
<p>United States health care is intentionally moving in a direction which emphasizes patient autonomy. This mentality has caused some patients to seek control over their own death when faced with a terminal illness. Claiming the right to "death with dignity," patients exercise the method of physician assisted suicide in order to avoid the inevitable suffering that comes along with certain disease progressions. Is such medical practice ethical? Should a patient have the choice to end her own life rather than experience the devastating pain that comes with a terminal illness? Could physician assisted suicide evolve to encompass putting to an end more than physical pain, such as psychological suffering, or physical or mental disabilities?</p> <p>In this presentation, I will demonstrate how physician assisted suicide is a fateful pattern that should be resisted for several reasons. With an evaluation of Kantian ethics, I will suggest that health care professionals should not promote physician assisted suicide in clinical practice nor encourage terminally ill patients to choose this option when facing end of life circumstances. I will discuss how physician assisted suicide violates Kant's first and second categorical imperatives and affirm why we should adhere to this assertion when considering ethical matters; to do so, I will explore the significance of virtue ethics and show how these principles are relevant when considering ethical dilemmas. In addition, I will present the concepts of autonomy and duty from a Kantian perspective and relate these to physician assisted suicide. Further, I will suggest potential implications of allowing "death with dignity" considering the slippery slope argument while using a case study to support the validity of this claim. Finally, I will emphasize how physician assisted suicide is likely to exploit vulnerable populations and make a final claim as to why this practice should be considered unethical.</p>				
Samuel Rice	Undergraduate Student	Science and Mathematics	2014–15 Assessment of Lake Depth in Cedar Lake	Samuel Rice
<p>In the fall of 2012, the Cedarville University Environmental Geology class conducted an exercise which produced a bathymetry map of Cedar Lake. The methods of data collection were crude, yet the end result was a map that depicted a reasonable lake-bottom configuration. Two years later during the fall of 2014 a second set of data was collected using the same methods that were utilized in 2012. Changes in lake volume and differences in contour configuration from 2012 to 2014 were determined using the Surfer 8 software package. For any lake, significant changes in volume can be an indicator that there has been a steady influx of sediment which is accumulating on the lake bottom. According to the data collected in 2014 at Cedar Lake, as compared to that from 2012, there was a small drop in lake volume which is possibly due to some sediment accumulation. Considering that there was no known earth disturbance near the lake or in the source-water area which could have contributed to a sediment influx, the likelihood of lake-volume reduction due to infilling is considered small. Ideally this lake-depth assessment would be repeated every two years for a minimum of ten years to observe potential long term sediment influx. Rate of infilling is a condition that needs to be understood in order to address both the short and long term health of the lake. The economic consequences may be minor or significant depending on the findings.</p>				
Taylor A Fulton	Undergraduate Student	Science and Mathematics	An Agonizing Choice: Autonomy vs. Beneficence in the Case of Cassandra C.	Taylor A Fulton

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
			<p>In today's world of progressive medicine, patient autonomy has seemingly surpassed all other values as the standard of ethical practice. Although physicians inform patients to the best of their ability, most patients have the right to accept or refuse almost any prescribed treatment, regardless of the physician's judgment of the situation.</p> <p>Although this trend can sometimes prove beneficial, it raises many ethical questions, and it complicates a physician's responsibilities. Primarily, the trend toward complete patient autonomy may conflict with the physician's commitment to beneficence in practice.</p> <p>The situation minutely shifts when underage patients are involved. The recent emphasis on patient autonomy has caused some minors to assert their perceived rights in ways many physicians consider life threatening. If a physician believes a minor patient will truly be harmed if he refuses treatment, the physician may go against the patient's will and force the patient to pursue treatment.</p> <p>This paper discusses the rights of minors to make cancer treatment decisions for themselves. As a point of reference, I discuss the case of Cassandra C., a minor who was diagnosed with Hodgkin's lymphoma but elected not to pursue treatment. Cassandra was forced by the court to undergo treatment, against the wishes of both Cassandra and her mother. After several weeks of forced treatment, Cassandra went into remission.</p> <p>Within this paper, I discuss the differences between adolescent and adult brains, analyzing how more advanced neural development can impact a person's decision-making capacities.</p> <p>I also evaluate the concept of beneficence, especially as laid out in the Hippocratic Oath. In this evaluation, I appraise how a minor patient's desire for autonomy might interact with a physician's responsibility to provide for the patient's well-being.</p> <p>I argue that although mature minors have a right to give input on what treatment they would prefer, doctors ultimately have a duty to ensure beneficence of treatment, especially for patients who are under the legal age of consent.</p>	
Kelly J Schaffter	Undergraduate Student	Science and Mathematics	The Sterilization of Individuals with Developmental Disabilities: Protection or Loss of Personhood?	Kelly J Schaffter
			<p>The civil rights of individuals with development disabilities have been a great challenge to protect throughout the United States' history. The United States has not held the protection of this population's civil rights with proper priority. The country's actions towards the population of individuals with development disabilities carried into the 20th century, when individuals with mental disabilities were involuntarily sterilized in the name of eugenics. Currently, the goal of the sterilization of this population is for their protection, yet forced sterilization continues to be a questionable practice in regards to ethics. In this paper, I will claim that the forced sterilization of individuals with developmental disabilities is unethical on the basis of the intrinsic worth and dignity of all people. Forced sterilization of individuals with developmental disabilities objectifies the individual and denies their dignity. It infringes on their autonomy and leads to an erosion of human rights, such as those protected in the United States Declaration of Independence. This paper outlines the history of the sterilization of individuals with developmental disabilities and the effect it has had in relation to the eugenics movement as it swept through the United States into current day. Opposing views are given a voice. The paper concludes with the effects which taking away a person's most basic civil rights has on any society. Part of Bioethics Colloquium.</p>	
Kaitlyn E Sturm	Undergraduate Student	Science and Mathematics	Relationship of Surrounding Geology to Well Recovery Properties for Selected Cedarville University Water Supply Wells	Kaitlyn E Sturm
			<p>This study was conducted to ascertain the relationship between geology and the recovery rate of three selected Cedarville University water supply wells. An analysis of the rate of recovery of the wells in the well field will allow for a better understanding of the well's overall performance. It will add to the existing data base of well information for Cedarville University. The three selected wells were individually pumped down and then water level measurements were taken in order to determine the rate of recovery. The collected data was analyzed and compared to the drillers' well logs and tests that were conducted at the time the wells were drilled. Analysis of the data was conducted with the use of an illustrator program in conjunction with the information from the drillers' logs and the recovery data collected. I have created a visual representation of the connection between the recovery and the geology. Three illustrations have been created using this method, providing a correlation assessment for all three wells. The drillers' logs were provided by the university. In addition, other published geologic information for the area were utilized and provided further information as to the relationship of the surrounding geology and the recovery rate.</p> <p>Further analysis of the collected data is still in progress.</p>	
Matthew S Cheney	Undergraduate Student	Science and Mathematics	Comparison and Resolution of Differences in Stream Velocity Values at NWIS Sites in the Upper Little Miami River Basin, Ohio	Matthew S Cheney
			<p>Flow measurement in a small to moderate size stream for the purpose of determining a flow velocity to calculate discharge at a particular site can be done using very simple to very sophisticated techniques and equipment. However, the simpler techniques leave a lot to be desired in terms of accuracy because the materials used have never been standardized. The simplest method of determining velocity involves measuring how long it takes a floating object to move a certain distance downstream. A standardized floating object that yields reproducible flow velocities in order to calculate discharges that accurately match the discharge numbers derived from USGS gaging sites would be a noteworthy advancement for both educational and practical purposes. This project attempted to find that ideal floating object by comparing calculated discharges on Massie's Creek and Little Miami River in southwestern Ohio to the derived discharges from USGS stream gaging sites on those two streams. In order to help find the best location for placing the floats in the stream a hand-held flow meter was utilized to characterize how the stream is flowing at depth along an upstream line perpendicular to the banks near the gaging stations. This pinpoints the location of where to float the objects. Cross-sectional areas of both locations play a key role in determining discharge. Cross-sectional areas of the gaging sites at Massie's Creek and Little Miami River were provided by the USGS. The likelihood of finding the perfect floating object is slim. By incorporating the provided cross-sectional areas, discharge data, and gage heights from the USGS sites, a correction factor can be applied to the floating object velocities in order to match the USGS velocity data. The "best" object is the one that is not affected by surface or subsurface environmental conditions (entrained leaves, wind, etc.) and provides consistent results as determined by multiple trial runs. This study found such an object.</p> <p>Due to weather conditions this past winter, field work and data analysis are still in progress, but will be completed prior to the Research Symposium on April 1st.</p>	

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Jacob Countryman	Undergraduate Student	Science and Mathematics	Human Dignity and Persisting Substance	Jacob Countryman
	<p>Peter Singer believes that only humans have value when they become self-conscious. This assertion implies that infants, as beings unable to be self-conscious, are acceptable for scientific experimentation. All humans, however, have intrinsic value in every stage of development. Embryos, fetuses, infants, and adults belong to one kind. This kind is rational. Since it is human nature to be rational, humans have greater value than other organisms. When a new person is formed at conception, a new primary substance is made and this substance persists throughout the entire life of the new human. Humans are not made of temporal parts; a human is the same person, yesterday, today and throughout his entire life. In my argument, I will challenge Peter Singers' belief that humans only have value when they obtain self-consciousness by contending that humans have intrinsic value because they have the same persisting substance from conception until death.</p>			
Tyler K Dix	Undergraduate Student	Science and Mathematics	Buildup and Infill Rates of Sediment Behind Cedarcliff Falls Dam	Tyler K Dix
	<p>Cedarcliff Falls Dam is a small man-made masonry dam that was constructed in the mid to late 1800s. The dam restrains a pool of water that is a half-mile long, and is located in southwestern Ohio near Cedarville. This project aims to discover the rate that buildup and infill are occurring and have occurred since 1869. The field work had two main pieces. First, was the measurement of water depth through the length of the pool to create a contour map. Second, the analyzing of sediment type throughout the pool. This was accomplished by use of a boat, stadia rod, handheld GPS unit, and a Ponar grab sampler. The contour map and volume of water in the pool were calculated using the Surfer 8 software, and sediment type (silt/sand/gravel) was done by "feel" with the stadia rod and by use of the Ponar grab sampler tool. Historical information was not adequate for determining sedimentation timing and influx with hydrologic events. Potential sediment sources include agricultural and construction derived materials, and normal-natural and flood-natural materials. The pool has an undulating type of sediment distribution, with the deepest recorded being twenty-three feet and the shallowest being five feet. The pool also has an irregular distribution of sediment types as well (silt/sand/gravel). The upstream lithology is dolomite, but this is coupled with overlying glacial drift. The irregular distribution of sediment types seem to be associated with type of creek bank at any particular location. This could be due to flood activity and different bank types throughout the length of the pool. Depth variation within the pool at different locations appears to be associated with the width of the channel, with depth being inversely correlated to width. The implications of this study may affect action to be taken in the areas of biological health of the stream, need to dredge out sediment, stability and integrity of Cedarcliff Falls Dam and subsequent flooding due to a breach in the dam.</p> <p>This data collection and analysis for this study are still in progress. These results may be strengthened or weakened based upon further investigation.</p>			
Dylan J McKevitt	Undergraduate Student	Science and Mathematics	Glacial Till Prospecting in Southwest Ohio: Implications for Improved Sampling	Dylan J McKevitt
	<p>Glacial till (drift) prospecting has served a major role in corporate mineral exploration, especially for gold and diamond during the past 30 years. It involves analyzing heavy indicator minerals from bulk sampling of various glacial deposits in order to track up ice flow direction to the potential orebody (such as a kimberlite pipe or Cu-Ni deposit), a technique commonly used in Canada but not in the U.S. Heavy minerals including diamond, gold, and native copper have been found in Ohio glacial till; the provenance of these heavy minerals is the Precambrian bedrock north of Ohio. This study utilized standard procedures in sample collection and analysis (sieving, concentration by gold-panning, heavy liquid separation with lithium metatungstate, magnetic separation and microscopy) with seven samples from a kame of the Late Wisconsinan glaciation in northeastern Greene County, southwest Ohio. Coarse to very coarse sand (2–0.5 mm) and fine to medium sand (0.5–0.125 mm) fractions from each bulk sample were analyzed for heavy minerals and felsic (quartz and feldspars) concentration. The goal was to determine variability in heavy minerals and felsic component concentrations across samples and between grain-size fractions, in order to suggest improved sampling and analysis techniques.</p> <p>Note: Analysis is ongoing, but almost finished. The findings will be included in the final abstract.</p>			
Jorian Krob	Undergraduate Student	Science and Mathematics	Determining Provenance of Glacial Material in Southwestern Ohio	Jorian Krob
	<p>During the last glacial maximum, ice moved south from Canada to cover much of the northern United States. This included the northern and western portions of Ohio. As the ice migrated it picked up Canadian bedrock which it transported and then left in Ohio when the ice retreated. The goal of this project was to determine the provenance (the source of origin) of the glacial material that is located in Greene, Clark, and Champaign Counties in Ohio. To determine where in southern Canada the material in these counties came from, this project included literature review into the glacial history of both Ohio and southeastern Canada and review on the stratigraphy of southeastern Canada. Pebble, cobble, and boulder sized fragments were evaluated from two surface mines, one kame (glacial deposit), and several glacial erratics in the three counties. Combining the stratigraphy of southeastern Canada found through the literature review and the sample analysis results, a map showing the source of the glacial material, direction of ice flow, and material destination has been created in ArcGIS.</p> <p>*Sample analysis is not done yet, and a revised abstract will be completed by the end of the week.*</p>			
Connor J Gilmour Mark Gathany Angela McCain Jenelle C Krob	Undergraduate Students and Faculty	Science and Mathematics	Monitoring Fish Diversity in Massie's Creek, Ohio	Connor J Gilmour Mark Gathany Angela McCain Jenelle C Krob
	<p>Streams are susceptible to numerous threats to their water quality and biodiversity. In our region of southwest Ohio a major driver of these impacts is associated with current and past agricultural practices. These changes include straightening, embanking, dredging, and removal of large rocks and woody debris, increased erosion, and non-point source pollution. These structural and chemical impacts are known to significantly affect biodiversity in these streams. This means a greater understanding of stream ecology is of utter importance to places such as Greene County, Ohio due to the prevalence of agricultural practices in the landscape. In 2010 a 2.2 mile stream restoration project was completed by Greene County on the north fork of Massie's Creek. Biological surveys and stream monitoring began in 2011 and extended on a regular basis through Fall 2014. In our study, conducted in the fall of 2014, we expanded the scope to evaluate fish biodiversity at previously studied sites as well as four additional sites within the watershed. Our objective was to collect data in order to draw comparisons between 2014 and previous years' data including a study conducted in 1955 on Massie's Creek.</p> <p>We sampled in six different locations, once in all six sites and twice in two specific sites. We used a mix of restored, unrestored, and unaltered stretches of stream as our sample locations. To determine diversity we used two different diversity indices: Shannon (H) and Simpson's (D). Our Shannon value for the common unrestored site was 1.46 and our Simpson's value was 0.33. Our Shannon value for the common restored site was 1.22 and our Simpson's value was 0.36. Combining the data from the previous years with the 2014 data we found dominance to have decreased after restoration (which means there was more diversity).</p>			

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Abbie E Patzke Laura Klodnicki Denida Chapman Megan Lowry	Undergraduate Students	Social Work	Shattered Silence: Unmuting the Voices of Syrian Refugees	Abbie E Patzke Laura Klodnicki Denida Chapman Megan Lowry
The Syrian conflict has affected over 12 million people in the past five years resulting in one of the most devastating forced migrations in global history. Through literature reviews and further research, this presentation will define the context that fostered the refugee crisis, as well as outline the current conditions experienced by refugees remaining in and outside of Syria. After exposing the cause of this catastrophe as well as highlighting present injustices, presenters will examine the impact of this event on refugees and explore future implications of the crisis. Finally, insight will be provided as to how individuals can become involved with advocating for justice and supporting refugees as they resettle in new communities.				
Lauren N Mullahy Esther R Fluhart Jessie A Comeau Katherine A Ward Hannah J Chitty	Undergraduate Students	Social Work	The Impact of Developmental and Humanitarian Aid in the Nation of Haiti.	Lauren N Mullahy Esther R Fluhart Jessie A Comeau Katherine A Ward Hannah J Chitty
Short term aid has numerous benefits and limitations in contrast with sustainable development. For this project sustainable development is defined as: utilizing the resources in communities and encouraging indigenous leadership to promote well being for future generations. The impact of short term relief is determined by various factors. The focus of this research will be the impact of humanitarian emergency assistance and developmental assistance in the nation of Haiti. The research findings obtained through literature review educates the local community on how to effectively assist developing communities both domestically and abroad to become self-sustaining.				
Ruth Markham Andrew Voss Kelli Anderson Cassie Peterson Douglas Anderson	Undergraduate Students and Faculty	Psychology	Pharmacy Students' Reflections as they near Graduation	Ruth Markham Andrew Voss Kelli Anderson Cassie Peterson Douglas Anderson
This study was conducted as a follow-up to a prior qualitative study completed the first year that Cedarville University accepted freshmen college students into its new Doctorate of Pharmacy program. At that time, the students were asked about their motivations for choosing the Pharmacy degree, especially in light of the brand-new nature of the program. The current qualitative study is asking similar and follow-up questions to the same group of students to see how their perceptions might have changed during the course of the program. The questions address continued motivation, personal emphasis on ministry vs. the science aspect of the degree, as well as other aspects related to the stresses of the program. Students generally indicated that they were pleased with their career choice, and most indicated that they had become more ministry minded throughout the program, in spite of the rigorous scientific demands of the classroom and lab. Many of them did comment on the frustration of being the "guinea pigs", as in the first year to complete every aspect of the program. However, that frustration was not enough to detract from their desire to complete their degree and work in their chosen field.				
Seth Hamman Ruth Markham Andrew Chaplik Gabrielle Metzler	Undergraduate Students and Faculty	Psychology	Improving Cybersecurity Education	Seth Hamman Ruth Markham Andrew Chaplik Gabrielle Metzler
This study was conducted as part of a more complex experimental research study on cybersecurity education. That larger study is considering ways to improve the effectiveness of cybersecurity education in the classroom, using game theory as an attempt to increase adversarial thinking. The current study uses a qualitative approach to answer the question: how do our students currently think about the different issues around the concept of cybersecurity? 30 students from one class were interviewed individually, and asked questions about their understanding of these concepts. In addition, questions were asked in an attempt to determine a mindset, or temperament, which might be conducive to this issue. Analysis of transcripts indicated that students did not perceive themselves as risk-takers, or likely to work outside expected parameters. However, they did indicate that morally it would be ok to "break firewalls" if there was compelling need, such as individuals were not receiving their rights – to access the internet, or be aware of information that they should be aware of. Interestingly, these students in general were uncomfortable answering open ended questions, and preferred to know the parameters of the questions themselves before answering. It will be interesting to see how the intervention/instructional component of the larger experiment affects the students' perceptions of their skills and decision making in the realm of cybersecurity.				
Kara Nonnemacher Leah Furrow	Undergraduate Students	Psychology	Premarital sex in college students: Factors that influence their attitudes and practices	Kara Nonnemacher Leah Furrow
Sex education continues to be a controversial topic in the United States. This study examines the relationship between sex education styles and actual sexual practices of students from several Midwest universities (n=1042). More specifically, this study looks at the difference in effectiveness between parent and teacher sex education, the effectiveness of safe sex education, and the sexual behavior perceptions of those who practice abstinence. Results showed that parents had a greater influence over their children than school-based sex education, that safe sex education promotes protected sex, and that the perceived acceptance of non-intercourse sexual behavior correlates negatively with abstinence education.				
Ruth Markham Monica Arslain Aubrey Gillette	Undergraduate Students and Faculty	Psychology	Freshman PKs at a Christian College: A Qualitative Study	Ruth Markham Monica Arslain Aubrey Gillette
Children of pastors are commonly stereotyped in one of two different ways: either they are seen as the model child, or as the prodigal. The model child is perceived as sheltered and naïve, with high expectations placed on them. In contrast the rebel is perhaps the more common stereotype, where children of pastors are seen as having negative feelings toward their father's position, and living their life in reaction to their parents' faith. The purpose of this study was to determine if either of these stereotypes, or other unifying factors, were present and continuing into their college years. We interviewed 23 college students at Cedarville University whose fathers were full-time pastors of evangelical churches. While in some aspects these students are much like their non-PK peers, themes of being stereotyped, viewing their fathers as spiritual authority figures, and finding identity in their father's calling emerged.				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
K C Pugh	Undergraduate Student	Psychology	Birth Order and Humor Styles	K C Pugh
<p>Humor can be used in a multitude of ways. Previously, Rod Martin has developed four distinct categories of individual humor style, which describes the way in which an individual uses humor on an everyday basis. The four styles are affiliative, self-enhancing, aggressive, and self-deprecating. The question is what factors may be related to one's humor style. It has been found that humor styles are correlated with one's personality score on Five Factor Personality test. It has also been found that one's order of birth is related to one's personality. Therefore, it is reasonable to propose that one's birth order may have a correlation with one's style of humor. In the current research project, we aimed to investigate whether birth order is correlated to certain styles of humor. We predicted that the eldest child would show higher levels of self-enhancing humor, the middle child would show higher levels of affiliative humor, and the youngest child would show higher levels of self-deprecating humor.</p> <p>We are currently collecting data on student's birth order and style of humor. Once the data has been collected and analyzed, statistical analysis will determine whether or not we should accept or reject the hypothesis. The data collection is still on going. We plan to present the preliminary results during the symposium.</p>				
Valerie A Sohn	Undergraduate Student	Psychology	Extroverted Personality as a Predictor of Informal Leadership	Valerie A Sohn
<p>Informal leadership and personality will be examined in the context of small group-project groups in a university general education course. The personality trait extroversion will be examined for its relationship to informal leadership, and the degree of extroversion will be considered for its connection to quality of leadership. Participants will be 178 college students, 104 (58%) male and 74 (42%) female, randomly divided into groups of 5-6 people for a group project in a large general education course at Cedarville University. Participants' degrees of extroversion will be determined using a Five Factor personality test, and informal leaders will be identified and their leadership qualities assessed through a questionnaire written by the experimenter. It is predicted that informal leaders will be more likely to be extroverted and that an increase in extroversion will correlate with an increase in the quality of leadership characteristics. The implications of this study are the possibilities of predicting informal leaders and leadership quality based on the personalities of group members.</p>				
Shannah C Gardiner Jenna Berkstresser	Undergraduate Students	Psychology	The Use of the HIT Questionnaire in a Rehabilitation Center for Juvenile Delinquents	Shannah C Gardiner Jenna Berkstresser
<p>It has been found that juvenile delinquents usually possess inaccurate explanations or thoughts about their experiences, which are called cognitive distortions. The prior findings also suggested that juvenile delinquents' antisocial behaviors are associated with their cognitive distortions. Therefore, many juvenile centers utilized cognitive treatment programs and tried to reduce juvenile delinquents' cognitive distortions. Thus, it is useful to measure the changes of juvenile delinquents' cognitive distortions in a rehabilitation center to design treatment plans and evaluate its effectiveness.</p> <p>The present study aimed to measure the changes of cognitive distortions in a group of 43 adolescent juvenile delinquents at a secure, long-term, juvenile Rehabilitation Center in a Midwestern state. The juveniles were given the How I Think (HIT) questionnaire to measure their cognitive distortions at the beginning of and at the end of their treatment. Their daily institutional misconducts were also recorded during their residency in the center. The pre- and post-test scores were compared and the analysis result indicated that the post-test scores were significantly lower than the pre-test scores revealing the effectiveness of the treatment of the Rehabilitation Center in lowering cognitive distortions. Secondly, the relationship between the cognitive distortion pretest scores and the number of these juvenile delinquents' institutional misconducts were examined. A significant positive correlation was found between these two variables. Thirdly, a regression analysis was conducted and the HIT subscales of angry/irritable and lying pre-test score were significant factors in predicting the number of misconducts at the Rehabilitation Center. Lastly, the relationships between specific cognitive distortions (i.e. self-centeredness, blaming others, minimizing/mislabeling, and assuming the worst) and specific misconduct categories will be examined. We plan to report the results during the symposium.</p>				
Lynley G Turkelson Kari E Barnhill	Undergraduate Students	Psychology	"That's So OCD!": A Qualitative Study Revealing Common Misconceptions About Christianity and OCD	Lynley G Turkelson Kari E Barnhill
<p>Although obsessive-compulsive disorder (OCD) is a relatively well-known psychological disorder, what many do not know is that 10%-33% of OCD cases are actually scrupulosity (Miller & Hedges, 2008). Scrupulosity (SC) is a subtype of OCD with obsessions and compulsions focused on religious and moral themes. Scrupulous individuals experience intrusive thoughts related to breaking religious or moral codes and compulsions manifest as religious observance that far exceeds normal religious requirement (i.e. excessive prayer, repeated confessing, etc.) (Dehlin et al., 2013; Huppert, Siev, & Kushner, 2007). Because SC manifests so differently from "typical" OCD, the individual, as well as members of the faith community, may not recognize their so-called spiritual struggles are actually OCD. Consequentially, scrupulous individuals are more likely to consult members of clergy to relieve their obsessional distress. This can be problematic since clergy are often unaware of how their position and authority may reinforce scrupulous symptoms by providing temporary reassurance that neutralizes obsessions (Huppert et al., 2007; Pirutinsky, Rosmarin, & Pargament, 2009). Thus, this interview-based study explores the unique challenges and subjective experiences of Christian college students with SC-OCD. We sought to dispel common misconceptions about what it means to have OCD and to better understand how SC differs from healthy spirituality. We interviewed 13 individuals with diagnosed OCD (Males = 3, Females = 10). The results indicate three main themes among participants: persistent impeded spiritual functioning, significant suffering and hopelessness, and worsening symptoms as the result of inappropriate advice from Christians unfamiliar with SC-OCD.</p>				
Haley Meral	Undergraduate Student	Kinesiology and Allied Health	Incidence of Injuries in Collegiate Cross Country	Haley Meral
<p>Running is becoming increasingly popular not only recreationally, but also competitively. With the increase in the number of people who are running comes an increase in the number of people who are injured. The purpose of this study was to determine if increasing mileage would result in a greater prevalence in injuries among collegiate cross country runners. Participants for this study included cross-country runners in the Great Midwest Athletic Conference. The hypothesis for this study had two parts: the greatest increase in mileage would be seen between the senior year of high school and the freshmen year of college; and the greatest increase in injuries would be seen during this time as well. The study was conducted through an online survey in which participants were asked questions pertaining to their running history as well as injury history. All data was collected and stored online; quantitative data was evaluated using SPSS software and qualitative data was evaluated for themes. A one-way ANOVA test revealed statistically significant differences between the number of years running and whether or not they participated in weight training during high school (p .003). No increase in injury prevalence was associated with increased mileage in this study. The goal of this study was to be able to better educate runners on the risk factors associated with distance running and to add to the pool of research on running related injuries.</p>				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Kurt Gruenberg	Undergraduate Student	Kinesiology and Allied Health	The Effect of Psychological Readiness on Return to Play Among Collegiate Athletes	Kurt Gruenberg
<p>Psychological readiness has been studied extensively over the past 20 years. It is becoming increasingly important to understand completely how athletes psychologically deal with a physical injury. Current research has identified specific intrinsic and extrinsic factors that have shown to present negative effects on athletes. They have also identified specific psychological factors that play a major role in the rehabilitation process. However, current research has not studied the entire psychological experience of athletes and their determining factors. They also have not used surveys that allow for both qualitative and quantitative data to be collected. Therefore, the purpose of this study was to see what psychological extrinsic and intrinsic factors combined do to the return to play of collegiate athletes. To identify the correlation between psychological readiness and return to play, surveys were distributed to NCAA universities within the state of Ohio. Athletic trainers then distributed the survey to all athletes who had missed sport related activities due to their injury. Quantitative results showed no statistical difference, but there were common themes found within the qualitative data. The qualitative results showed similar results to current research. Results showed that athletes tend to do more than what their athletic trainers allowed them, coaches pressured athletes to return sooner than they could, and overall athletes had a good rehabilitation experience. Despite the amount of limitations in this study, the qualitative data will help further athletic trainers knowledge about how athletes react to athletic injuries.</p>				
Alexander K Heaton	Undergraduate Student	Kinesiology and Allied Health	Ohio Athletic Trainers' Reaction to New Ohio Concussion Legislation	Alexander K Heaton
<p>This research examines the effects that concussion legislation has had on how Certified Athletic Trainers practice medicine in the state of Ohio. In the spring of 2009, the state of Washington passed a bill that would change how concussions are handled in youth sports. According to the legislation, all athletes who display any signs and symptoms of a concussion are to be removed immediately from play and are not able to return to play until cleared by a licensed professional health care provider. Since then, concussion legislation of some form has been passed in every state, with Ohio passing its own law in the spring of 2013. However, the Ohio High School Athletic Association (OHSAA) made a unique amendment to it by giving sporting officials the power to remove an athlete they deem is "concussed" without having to confirm a diagnosis with a licensed professional health care provider such as the Certified Athletic Trainers (ATCs) who are normally present during sporting competitions. The purpose of this study was to determine how Athletic Trainers who work in high schools in the state of Ohio feel about this law and its various stipulations. A 20-question survey was sent to Athletic Trainers who work in a high school setting in the state of Ohio asking for their opinion and views on various components of law. Of the 302 ATCs who received the survey, 49 (16%) submitted it completed. Results of the survey yielded a mix of positive and negative emotions related to various aspects of the legislation, and though there was some disagreement, responding ATCs agreed with the main purpose of the legislation, which was to raise awareness of concussions and prevent mishandling of cases involving concussed athletes. What it came down to was whether ATCs feel that their knowledge and expertise in recognizing and treating concussions is not being utilized to its fullest potential.</p>				
Jessica Pearson Michael Weller	Undergraduate Students and Faculty	Kinesiology and Allied Health	Certified Athletic Trainers' Perceived Comfort Level with Shoulder Reductions	Jessica Pearson Michael Weller
<p>Joint dislocations are a common injury in the athletic world. The shoulder is the most commonly dislocated joint. It is important for health care professionals to be aware of this injury and be able to treat it. Athletic trainers play a vital role in the immediate care of injured athletes. The purpose of this study was to investigate the perceived comfort level of athletic trainers with reducing a shoulder dislocation. The results showed that there was a significant difference between ATC's perceived comfort level in the 5-10 and 20+ years of experience groups when reducing posterior dislocations ($p=.016$). Another significant difference was shown between the ATC's in a collegiate and clinic setting ($p=.019$). This study shows that Athletic Trainers are performing shoulder reductions and that they feel confident doing so.</p>				
Kaylee J Newman	Undergraduate Student	Kinesiology and Allied Health	Excluding Gluten in a Healthy Collegiate Runner	Kaylee J Newman
<p>Gluten is a protein found in wheat, soy, and other grains. It cannot correctly be metabolized in those with celiac disease; therefore, it remains in the intestines and ferments, causing symptoms associated with this disease; most profoundly noted, destruction of intestinal cilia. Gluten-free dieting is the only treatment known to relieve symptoms of patients with celiac disease. The general public and many athletes have learned parts of this diagnosis and related the gluten-free diet to decreasing symptoms of the gastrointestinal tract. The diet itself has become widely accepted and used in those without celiac disease. This study aims to assess the perceived and actual effects of a gluten-free diet, particularly in NCAA cross-country runners, as this is a group that is prevalent in using the gluten-free diet to enhance both gastrointestinal functioning and athletic performance. This study will include a pre-test post-test design with an intervention diet adherence to a gluten-free diet and a control diet. Quantitative and qualitative measures will be assessed to show both perceived and actual effects of the diets. This study will benefit the realm of sports specifically in that it will bridge the gap between gluten-free research and athletic performance. These results will enable the athletic training field to consult with athletes on the benefits and set backs of their diet and educate them on how to maintain their body to the best of their ability.</p>				
Aaron Wass	Undergraduate Student	Kinesiology and Allied Health	Burnout Rates in Undergraduate Athletic Training Students Compared to the Burnout Rate of Certified Athletic Trainers: A Comparative Study	Aaron Wass
<p>Burnout was first described in 1974. Since then, the condition has been researched and studied numerous times. The healthcare field has experienced this condition at a very high rate and Athletic Training, as a profession, has been affected. Burnout has become prevalent in the healthcare field due to highly stressful situations, heavy workload, and emotionally draining work environments. The profession of Athletic Training has been significantly affected by this condition and many Athletic Trainers (AT) experience burnout over the course of a calendar year. Seemingly every AT has been affected by burnout personally, known a colleague who has struggled with burnout, or even succumbed to burnout and changed professions. This far reaching condition may be affecting undergraduate students in Athletic Training Education Programs (ATEP), but little is known about the degree to which students are affected due to lack of research on this segment of the population. Therefore, the purpose of this study was to assess the level of burnout in undergraduate AT students (ATS) compared to the level of burnout in Certified Athletic Trainers (ATC). ATS and ATCs were surveyed using a Maslach Burnout Inventory (MBI) and basic demographic items to assess level of burnout and to compare the two groups to determine possible correlation. The results of this study show that undergraduate athletic training students are affected at the same rate as the Certified Athletic Trainers who have experience in the field, years of life experience, stronger coping mechanisms, stronger social support, and/or organization support. This study determined that ATS and ATC have a comparable level of burnout.</p>				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Andrew J McBride Emily D Williams Kristen P Sabo	Undergraduate Students	Nursing	Effects of Smoking vs. Nicotine Replacement Therapy during Pregnancy on Childhood Health Outcomes: An Integrative Literature Review	Andrew J McBride Emily D Williams Kristen P Sabo
<p>PICOT: In pregnant women does the use of nicotine replacement therapy compared to smoking during pregnancy reduce the risk of future childhood health concerns?</p> <p>Methods: A search was conducted on healthcare literature databases (Alt HealthWatch, AMED, CINAHL, and Medline). The initial search yielded 940 results related to the topic. Initial review narrowed the search to 25 articles. Articles were excluded if published before 2008. After reviewing the full articles and evaluating effectiveness of the studies, 12 studies met the criteria. These 12 articles focused on the effects of smoking and childhood outcomes, NRT, and success of NRT.</p> <p>Findings: The articles concluded that NRT may aid in positive health outcomes since it excludes the risk factors associated with carbon monoxide and other carcinogens found in cigarettes. The NRT still delivers significant levels of nicotine exposure to the fetus and leads to pregnancy complications ending in low birth weight and preterm birth.</p> <p>Recommendations: Further studies should be conducted on the effects of nicotine and NRT especially on birth outcomes and future childhood health concerns.</p>				
Danae Hershberger Luke D Febrizio Miranda A Sternsher	Undergraduate Students	Nursing	The Effectiveness of the Use of Probiotics in the Prevention of Necrotizing Enterocolitis	Danae Hershberger Luke D Febrizio Miranda A Sternsher
<p>PICO Question: In very low birth weight infants (VLBW), does the use of prophylactic probiotics decrease the incidence of necrotizing enterocolitis?</p> <p>Method:</p> <p>Databases searched include PubMed, Cochrane, Medline, ScienceDirect, UpToDate, and CINAHL databases, resulting in 10 relevant articles (four meta-analyses, two systematic reviews, three randomized controlled trials, and one cohort study).</p> <p>Results:</p> <p>The review of literature concluded that overall there is a decrease in the incidence of NEC when VLBW infants are given prophylactic probiotics.</p> <p>Recommendations:</p> <p>In conclusion, probiotics have shown efficacy in preventing NEC with no confirmed reports of adverse effects to VLBW infants. The final recommendation would be to implement the use of probiotics for VLBW infants. The conclusions strongly suggest a change in practice, and hospital NICUs would greatly benefit from the use of probiotics.</p>				
Muriel P Shannon Micaela S. J. Iversen Natalie L Neidig	Undergraduate Students	Nursing	Effects of noise reduction and care clustering on quality of sleep in critical care patients	Muriel P Shannon Micaela S. J. Iversen Natalie L Neidig
<p>Introduction: Sleep deprivation has detrimental effects on critical patients' health. A lack of sleep can affect multiple body systems. There are nursing interventions that can reduce sleep deprivation. However, there is inconclusive evidence on how to properly assess sleep deprivation and implement sleep promoting nursing interventions in clinical practice.</p> <p>Purpose: The purpose of this literature review is to examine the effects of noise reduction and nursing care clustering on improving the quality of patient sleep in the critical care setting.</p> <p>Methods: This literature review was conducted using 10 sources published within the last 5 years. Inclusion criteria consisted of articles about the effects of noise, quality of sleep, and implementation of nurse care clustering on various critical care populations. The 6 databases used for this research were UpToDate, CINAHL, PubMed, PsycInfo, Proquest, and CCForum. This research concentrated on examining articles containing nursing interventions for noise reduction and care clustering related to quality of sleep.</p> <p>Results: Noise has a negative effect on sleep by causing more arousals/awakenings, which greatly impacts the restorative function of the process. Noise is not the only sleep disturbing factor, but it has been shown to be significant. Some noise sources cannot be eliminated due to safety reasons, but interventions exist to help counteract the effects of noise. Nursing care interventions are as disruptive to sleep as noise. 13.9% of nursing interruptions could be safely omitted, and nurses should cluster care to promote sleep. Interventions to prevent sleep disruption can be practical in routine nursing, but nurses are less likely to implement them at night because prioritizing care clustering can require more time and effort.</p> <p>Discussion: Sleep deprivation causes major health concerns in critical care patients. Noise and nursing care interventions have been found to cause equal disruptions in sleep. Noise reduction and care clustering have been observed to reduce sleep deprivation. Further evidence is needed on how to effectively and practically implement these nursing interventions into daily nursing practice.</p>				
Ivey M McRory Angel Kester Addie T Martin Marybeth Williams	Undergraduate Students	Nursing	The Effects of Vocational Support Programs on Individuals with Autism Spectrum Disorders	Ivey M McRory Angel Kester Addie T Martin Marybeth Williams
<p>Purpose: The purpose of this review is to examine the effects of vocational support programs versus the absence of vocational support programs on employment rates, social skills, and quality of life of transition-aged youth diagnosed with autism spectrum disorders and related diagnoses.</p> <p>Methods: The CINAHL, Cochrane Collection Plus, Medline, PubMed, and UpToDate databases were searched for articles pertaining to our purpose statement. Four reviewers analyzed the articles for results and extracted data regarding sample characteristics, treatment characteristics, assessment tools, and outcomes.</p> <p>Results: Nine studies were included, all of which related to the effects of vocational support programs on individuals with ASD and related diagnoses.</p> <p>Conclusion: Across the board, data strongly suggested that vocational support interventions increased employment rates, improved social skills, and enhanced quality of life for individuals with ASD and related diagnoses.</p>				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Jessica Lingaas Taylor Craig Rebekkah Reisner Mary Smith	Undergraduate Students	Nursing	Prevention of Hospital-Acquired Pneumonia: An Integrative Review	Jessica Lingaas Taylor Craig Rebekkah Reisner Mary Smith
<p>Background: Hospital-acquired pneumonia (HAP) not only brings about physical challenges to patients that can lead to death, it also involves financial burdens. Research on how to prevent HAP is a necessity; however, a deficit exists in research concerning prevention of non-ventilator hospital-acquired pneumonia (NV-HAP). The purpose of this study is to synthesize the current research on the nurse's role in prevention of NV-HAP, identify where additional research is needed, and suggest clinical standards of care to prevent pneumonia in hospitalized patients.</p> <p>Methods: Data for this integrative review was collected from the following databases: PubMed, Cumulative Index of Nursing and Allied Health Literature (CINAHL), GoogleScholar, Cochrane Register of Controlled Trials, MEDLINE, and OneSearch. An interview with a local hospital registered nurse was conducted.</p> <p>Results: Four different categories of interventions were researched and the results were synthesized. Oral care, the early mobility bundle and isolation rooms were found to significantly decrease the occurrence of NV-HAP. Incentive spirometry, on the other hand, was not found to effectively decrease NV-HAP.</p> <p>Discussion: While oral care, early mobility and isolation rooms were all found to significantly reduce the occurrence of NV-HAP, these interventions are most effective when the health care workers carrying them out are educated on properly performing each intervention.</p> <p>Conclusion: Enhanced oral care and enhanced mobility should be primary interventions for the prevention of NV-HAP, while incentive spirometry should be considered a secondary intervention. More research is needed to be conclusive on the effectiveness of incentive spirometry and isolation rooms.</p>				
Grace A Wahba Becca H Hughes Lexie J Baroni	Undergraduate Students	Nursing	Effect of Continuous Education on Readmission Rates for CHF Patients	Grace A Wahba Becca H Hughes Lexie J Baroni
<p>Aim: To evaluate if continuing the education of Congest Heart Failure patients post-discharge will decrease the amount of readmissions within 6 months of discharge.</p> <p>Background: Causes for decreased readmission rates in Congestive Heart Failure patients have been evaluated in multiple studies. The evaluation of the current research showed having discharge education and post-discharge follow-ups decreased the rate of readmission within 6 months. There is a sufficient amount of evidence supporting the implementation of education upon discharge and follow-ups of Congestive Heart Failure patients.</p> <p>Data Source: Databases and search engines used included: PubMed, OneSearch, CINAHL, DogPile, and Google. Of 25 articles read, 10 articles were included in the review of literature.</p> <p>Results: Three specific forms of patient education were reviewed. These included a telephone follow up program, six months of continued patient education, and a plan tailored to the individual needs of the patient. All three interventions were effective in showing a decrease in readmission rates.</p> <p>Conclusion: Increased time of continued education is believed to be effective in decreasing the readmission of Congestive Heart Failure patients within 30 days of discharge.</p>				
Kate M LiVigni Anna E Prosis	Undergraduate Students	Nursing	The Effect of Family Centered Care in the NICU: The Role of Family-Centered Care in Parent's	Kate M LiVigni Anna E Prosis
<p>Purpose: To evaluate the impact of family centered care (FCC) on families' confidence and ability to care for their neonates in the NICU.</p> <p>Methods: A literature review was conducted using the databases: PubMed, Medline, and CINAHL. Ten articles were chosen matching the inclusion criteria related to FCC. In addition, an interview took place with an RN who works in the NICU of Miami Valley Hospital.</p> <p>Results: Three findings emerged from the research literature: improved parent confidence, improved nurse and family relationship, and benefits to the neonate. All articles showed some form of improvement related to FCC.</p> <p>Recommendations: After synthesizing research, we have determined that there is not a sufficient evidence base for strong clinical practice recommendations regarding the evidence alone. However, FCC is recommended based on clinical significance and positive outcomes in the literature found. We recommend that more research be conducted in order to determine the efficacy of FCC in regards to parents' emotional health, their relationships with nurses, and their ability to care for their neonates.</p>				
Ayana A Kleckner Brianna P Sparks Rachel M Collins	Undergraduate Students	Nursing	The Use of Turning and Repositioning Versus Pressure Redistributing Support Surfaces in the Prevention of Pressure Ulcers	Ayana A Kleckner Brianna P Sparks Rachel M Collins
<p>Currently, 1.3-3 million adults in the United States are affected by pressure ulcers, costing \$37,800 to \$70,000 per ulcer (Smith, 2013). This costs the United States 11 billion dollars annually (Smith, 2013). This review's PICO question is "In hospitalized critically ill patients, how does turning and repositioning every two to four hours compared to the use of pressure redistributing support surfaces prevent the occurrence of pressure ulcers?" For this review, the articles found were rated as excellent (n=7), good (n=2), and fair (n=1). Appendix A shows the critical appraisal of all pertinent articles used. Findings suggest that there is minimal statistically significant evidence that the use of one intervention is more effective than another (pressure redistributing support surfaces versus turning and repositioning every two to four hours) (Bergstrom, 2013; Chou, 2013; Huang, 2013; Manzano, 2013; Manzano, 2014; Rich, 2011b; Smith, 2013). Furthermore, findings indicate that when both interventions are used together, pressure ulcer prevention is increased (Chou, 2013; Rich, 2011a; Smith, 2013).</p>				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Justin Eckberg Gretta Weindorf Jennifer Payne Hannah Eckberg	Undergraduate Students	Nursing	Alarm Fatigue: Effect on Nurses and Possible Solutions	Justin Eckberg Gretta Weindorf Jennifer Payne Hannah Eckberg
Alarm fatigue in hospital nursing settings is characterized and caused by false positive alarms and clinically insignificant alarms, sometimes referred to as the "crying wolf" effect (Gross, Dahl, & Nielsen, 2011; Funk, Clark, Bauld, Ott, & Coss, 2014). The phenomena of repeated false alarms over time causes nursing staff to become desensitized, responding less frequently and less punctually resulting in compromised patient care and safety (Konkani, Oakley, & Bauld, 2012). As estimated by The Joint Commission (2013), hereafter referred to as TJC, 85-99% of sounding alarms are insignificant, reinforced by Graham and Cvach (2010), who estimated less than 1% resulted in nursing intervention. In 2013, TJC issued a Sentinel Event raising awareness about alarm fatigue, requiring hospitals to create guidelines for medical equipment alarms (Funk et al., 2014). The new policies need revision and further study before a definitive answer can be recommended to reduce noise and increase nursing efficiency. As stated by the patron of the nursing profession, Florence Nightingale in Notes on Nursing: What It Is, and What It Is Not: "Unnecessary noise, then, is the most cruel absence of care which can be inflicted either on sick or well" (1859, p. 27). In this review of the literature, the researchers took multiple scholarly articles and studies from medical databases and synthesized them. Recommendations and gaps in the literature are noted.				
Dr. Tim L Norman M Gardner N Hanbury J D Hutchison D Madsen J Slabach K Bradley J D Blaha	Undergraduate Students and Faculty	Engineering and Computer Science	Design of TKR Tibial Insert for Bowlegged Gait	Dr. Tim L Norman M Gardner N Hanbury J D Hutchison D Madsen J Slabach K Bradley J D Blaha
One of the causes associated with total knee replacement (TKR) surgery is abnormal gait. In these gait cases, however, the TKR does not solve the ultimate issue because abnormal gait still occurs, and similar excessive forces still occur on the knee. It is likely that the TKR will experience accelerated wear, and the individual may have to undergo a second TKR sometime in the future. For our purposes, bowleggedness is either the external rotation of the hip or excessive varus of the knee. It was hypothesized that the inability to internally rotate the hip increases adduction moment and medial compartment stresses. In order to test this hypothesis, we created an analytical model to determine forces and moments at the knee. Results supported our hypothesis. In attempt to decrease the elevated stresses in the medial compartment, we created several models which modified the tibial plastic of the ADVANCE® Medial Pivot Knee. We performed stress analyses in ABAQUS and conducted experiments on each of the models. Based on our results we recommend the thickened anterior medial cusp implant for those with external rotation and the angled tray implant for those with varus deformity.				
Harrison A Martin	Undergraduate Student	Engineering and Computer Science	Electrochemical Analysis of Fretting Corrosion at Taper-Trunnion Interface	Harrison A Martin
One of the most prevalent issues regarding Metal on Metal (MOM) hip implants is fretting corrosion, a result of cyclic motion between the taper (female component) and the trunnion (male component). The metal ions that are released as a result of fretting corrosion can potentially have adverse effects on the surrounding tissue within the hip, leading to pain and premature replacement. The predominant methods for measuring fretting corrosion have been primarily qualitative; however, a quantitative method for measurement is possible through electrochemical analysis. This is a short-term test that is meant to provide quantitative results allowing different designs to be compared with regards to fretting corrosion generated. When the oxidation layer of a metal object is breached the half-cell potential of the object is changed, which produces a voltage difference. We can use this voltage difference as a way to quantify fretting-corrosion typically through a current measurement. We have conducted experiments in which this process has been mimicked, and the results for multiple materials and time durations have been produced. Based on the results of these experiments, we think electrochemical analysis is an accurate and efficient method for comparing fretting corrosion amounts between different taper-trunnion design configurations.				
Kyle Bradley	Undergraduate Student	Engineering and Computer Science	Experimental Investigation of TKR Tibial Insert Design in Abnormal Gait	Kyle Bradley
One of the causes associated with total knee replacement surgery is abnormal gait. When excessive loading occurs on the knee joint due to abnormal gait, the cartilage in the knee wears away until bone rubs together. In these abnormal gait cases, however, the Total Knee Replacement (TKR) does not solve the ultimate issue because abnormal gait still occurs, and it is believed that similar excessive forces still occur on the knee. It is likely that the TKR will experience accelerated wear, and the individual may have to undergo a second knee replacement. Experts have observed that there seems to be a strong correlation between bowlegged gait and arthritis of the medial aspect of the knee. For our purposes, bowleggedness is defined as either the external rotation of the hip or excessive varus of the knee. In a previous study conducted in our lab it was shown that the inability to internally rotate the hip (i.e. walking bowlegged) increases adduction moment and medial compartment stresses. In attempt to decrease the elevated stresses in the medial compartment resulting from the abnormal gait condition, we created several physical and numerical TKR tibial insert models which modified the tibial plastic of the ADVANCE® Medial Pivot Knee. Using a mechanical testing machine, we developed a knee simulator that was capable of applying knee loads in the two bowlegged gait configurations. We performed experiments to test the pressure distributions on the medial and lateral tibial compartments. Results were compared to stress analyses performed using numerical finite element analysis (FEA). Within the limitations of our experiments, our results agreed with numerical FEA in recommending the angled tray implant for those with varus gait.				
Amber Lee	Undergraduate Student	Engineering and Computer Science	Surface Roughness Variation with Surface Finish on Trunnion-Taper Interface	Amber Lee
The trunnion-taper interface of a hip implant is known to undergo fretting corrosion, which can lead to many issues in the body including metal toxicity. Manufacturing parameters such as surface roughness could be a factor in fretting corrosion, as larger asperities in the surface could cause more fretting corrosion. Polishing, turning, and grinding each produce different surface roughnesses. A white light interferometric microscope is an effective way to measure surface roughness. It provides a close up look at surface topography and a better understanding of the roughness parameters. The overall goal of this research is to find a relationship between fretting corrosion and surface roughness. To do this, we needed to control our manufacturing process for surface roughness. We chose to machine all of our trunnion coupons by turning them on the lathe. We were able to alter the depth and width of the asperities in the surface by changing machine settings. This allowed us to produce specimens with an acceptable range of arithmetic mean roughness values that were within manufacturing tolerances of commercially available trunnions. Our results provide a correlation of machine and surface roughness parameters that will be used in subsequent experiments.				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
James A Grinalds	Undergraduate Student	Engineering and Computer Science	Expanding Marginal Efficiency in Mechanical Power Transmission	James A Grinalds
<p>The proposed transmission design is addressed to increase shifting efficiency and power band optimization. These issues are of crucial importance to applications where absolute performance or efficiency is desired, like car or bike racing, PTO for large generators, but the practicality and ease of implementation of the design lend its benefits even to less rigorous applications. To date, continuous transmissions have relied on friction to do their work, which adversely either limits the output gearing ratio or the output torque. The proposed design is not hampered by such issues. In 1898, James Moncrief Cleland outlined the use of an expanding sprocket for bicycles, but it stepped between two speeds only, and the mechanism was unwieldy. Modern designs have suggested the use of one way bearings and tangential contact transmissions, but these continue to offer significant friction losses, and no mechanical float to match the gearing to a set input torque. The impetus for my design flowed from frustration in managing gear ratios in my car and on my bike. Furthermore, I understand that a torque converter might usefully increase the power band of an engine, provided the mechanical efficiency of the transmission did not offset the gains in efficiency on the fringes of the power band. For this reason, I am proposing an expanding sprocket with infinite variability which manages its own ratio in order to match the load to the source. The design is such that the ratio may be changed down and back up in even as the same link in the chain passes over one half of a turn about the sprocket. Between the seamless shifting and expanded power band, I anticipate modest efficiency gains. However, even a few percentage points of improvement in mechanical efficiency translates into massive power gains over time in a large scale power-generation system, or it could be that little bit extra a biker needs to shave half a second off his time to win a race.</p>				
Timothy Gauthier Shaune Young Zachary Weaver	Undergraduate Students	English, Literature, and Modern Languages	Discourses surrounding divided Germany	Timothy Gauthier Shaune Young Zachary Weaver
<p>Discourses Surrounding Divided Germany</p> <p>This discourse analysis examines a collection of short stories, entitled <i>Schattensprünge: Geschichten rund um die Berliner Mauer</i>, spanning the period of divided Germany (1949-1989) and the effect of this era on the mentality of the German people, particularly in the areas of politics, religion, society and economics.</p> <p>The separation of the country created a culture of fear, struggle and deceit, separated families, encouraged big government secrecy, and proved that socialism leads to economic catastrophe. Both before the Wall went up in 1961 to the time of its destruction in 1989, the German people were faced with having to rebuild their nation after war and the added strain of a divided country caused more unrest in the nation as a whole. The suffering of divided families caused by the Wall and a culture of distrust created by the Orwellian East German government was contrasted with the economically-flourishing and democratic society of the West. These texts illustrate the magnitude of the Berlin Wall and how it affected the society and culture of the German people.</p> <p>Our analyses of the 19 personal stories and experiences related in this collection reveal how the 40-year division of a Volk affected politics, religion, society and economics in the lives of the authors. These specific examples from regular people illustrate life in Germany on both sides of the Wall.</p>				
Rebecca J Gryka Denise S Simpson	Undergraduate Students and Faculty	Pharmacy	Comparison of Student Learning Using a Traditional Lecture-based Pedagogy versus a Team-based Learning Pedagogy	Rebecca J Gryka Denise S Simpson
<p>Objective: To compare pharmacy student learning in an integrated pharmacology and medicinal chemistry course utilizing traditional lecture-based pedagogy versus utilizing team-based learning (TBL) pedagogy.</p> <p>Methods: An integrated pharmacology and medicinal chemistry course offered in the first year of the professional pharmacy program at Cedarville University School of Pharmacy was delivered in two different academic years utilizing two different pedagogies: traditional lecture-based pedagogy and TBL pedagogy. Student learning was assessed with exams consisting primarily of multiple choice questions alongside a few short answer questions. The exams consisted of 5-6 questions per hour of class time. The exams utilized the same questions across both academic years.</p> <p>Results: There was significant improvement in the performance of the students in a TBL course format compared to that in a traditional lecture-based format. The average mean over five exams was 11.45% higher in the group who took the course in the TBL format (range 6.90-15.50%).</p> <p>Conclusions: Team-based learning is an effective collaborative learning strategy for instruction in pharmacology-medicinal chemistry. The effectiveness of this pedagogy was demonstrated by the significant improvement in student performance in the course.</p>				
Juanita A Draime	Graduate Student	Pharmacy	Description and comparison of drug diversion in pharmacies by pharmacists, interns, and pharmacy technicians	Juanita A Draime
<p>Objective: To describe reported drug diversion within the practice of pharmacy.</p> <p>Methods: There is limited research that examines the nature and extent of drug diversion within the practice of pharmacy. If drug diversion is reported, state boards of pharmacy examine cases involving registered pharmacy personnel. To describe the problem of diversion, a sample of state board records were examined. First, states were classified, using US Census classifications, into regions and divisions to provide a representative sample. States who did not have minutes posted online or who did not register technicians were excluded. If more than one state remained in a division, then a state was randomly chosen for analysis. Meeting minutes were obtained from May 2008 to May 2013. The following items were obtained for each case of drug diversion: 1) category of pharmacy employee (pharmacist, technician, intern), 2) type of substance (control, non-control, both), 3) use of diverted substance (sale, personal use, both, unknown), and 4) action taken by the board. An a priori sample size was calculated ($\alpha=0.05$, effect size=0.3, $n=253$ cases). Descriptive statistics were performed for all data in SPSS v.21, and Chi-squared tests were used to assess categorical differences.</p> <p>Results: A total of 811 drug diversion cases in 9 states were identified and used. Most cases were involving a pharmacy technician (71.4%), controlled substances only (94.2%), diverted for personal use (46.6%), and resulted in license revocation/surrendering (62.5%). When examining drug diversion use by type of substance, there were significant differences by pharmacy employee type (sale use $p=0.003$; personal use $p=0.032$; unknown use $p<0.001$).</p> <p>Implications/Conclusions: Drug diversion is prevalent, as indicated by the 811 cases examined by state boards, and many cases may be unreported. Technicians represent nearly three-fourths of diversions. It is essential that the practice of pharmacy identifies and assesses strategies to reduce drug diversion.</p>				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Samantha A Smolinski Kristin Lessig Lindsay Mailloux Jacob Davis Stephen K Yeboah	Graduate Students	Pharmacy	Community Education on MTM Services	Samantha A Smolinski Kristin Lessig Lindsay Mailloux Jacob Davis Stephen K Yeboah
<p>Background: Medication nonadherence, defined as “the number of doses not taken or taken incorrectly that jeopardizes the patient’s therapeutic outcome,” is a major health problem with about 43% of the general population nonadherent to their medications. Medication nonadherence accounts for an estimated 125,000 deaths per year in the US, 33-69% of medication-related hospital readmissions, and an estimated \$100 to \$300 billion in direct and indirect medical costs. Medication therapy management (MTM), defined as “a distinct service or group of services that optimize therapeutic outcomes for individual patients,” has been found to reduce medication nonadherence. However, many individuals eligible for MTM services are not aware of the resource available to them and do not believe the service will be beneficial to them.</p> <p>Objectives: A pre post observational study design will be used to determine the effects of two types of educational interventions on MTM of patient’s perceptions of MTM and enrollment in MTM services.</p> <p>Methodology: Participants will be divided into two intervention groups. All participants will complete a pre survey to assess current perceptions of MTM services. One group will attend a community educational event on MTM, and the second group will receive an educational brochure in the mail. All participants will complete a post survey to reassess perceptions of MTM after the educational intervention. In addition, all participants will be tracked to determine future enrollment in an MTM service.</p> <p>Analysis: Descriptive tests and paired t-tests/Wilcoxon Signed Rank tests will be run on data acquired from pre and post surveys. Unpaired t-tests/Mann Whitney and chi-square tests will be run to compare data between intervention groups. Descriptive tests will be run on data acquired from tracking enrollment.</p>				
Michael E Kapraly Denise S Simpson Josh Knoebel Ruth Choi Brandon Kime Dr. Samson Amos Rebecca J Gryka Kaysie J Brittenham	Graduate Students and Faculty	Pharmacy	Pharmaceutical Stability of Promethazine in IV Infusion Fluids	Michael E Kapraly Denise S Simpson Josh Knoebel Ruth Choi Brandon Kime Dr. Samson Amos Rebecca J Gryka Kaysie J Brittenham
<p>BACKGROUND: Promethazine is an antiemetic often administered intravenously in healthcare facilities for postoperative nausea and vomiting. Due to potential adverse events that may result with intravenous push administration, some safety-minded healthcare facilities have elected to use alternative methods of administration. One such method is the intravenous piggyback (IVPB). However, limited stability data exist for promethazine in intravenous solutions.</p> <p>OBJECTIVE: To analyze the stability over time of promethazine dissolved in commonly used intravenous infusion fluids when exposed to various light and temperature conditions.</p> <p>PROPOSED METHODS: Promethazine will be formulated into IVPB bags of normal saline, dextrose 5% in water and Lactated Ringer’s solution. These bags will be exposed to various light and temperature conditions over time. Samples will be taken from the bags at regular intervals and analyzed for purity using high-pressure liquid chromatography. Chromeleon® software, Microsoft Excel, and IBM SPSS 22 will be used to obtain descriptives for data and statistical analyses.</p> <p>RESULTS: The results for this prospective study are pending. Data collection is planned to begin in the fall of 2015.</p> <p>CONCLUSIONS: The conclusions from our results are intended to inform health professionals on the optimal utilization of promethazine in IVPB formulations. If favorable stability data are discovered, healthcare facilities may be able to increase efficiency.</p>				
Rebecca Kyper Miriam A Ansong	Graduate Student and Faculty	Pharmacy	International Multi-Site Gap Analysis Study to Identify Areas of Health Service Needs in Short-Term Medical Missions	Rebecca Kyper Miriam A Ansong
<p>Purpose: To identify and assess the needs of health care services in global medical missions.</p> <p>Methods: Every year, many health care professionals and their students travel abroad to developing countries to provide health care services to the under-served, indigent, and under-insured populations through medical missions. The large number and wide scope of these medical mission trips begs the question as to how effective these services are meeting the health care needs of these populations. A literature search in Pubmed, IPA, CINAHL and Cochrane indicated that there is a large gap in the literature evaluating the suitability of mission services in developing countries. A prospective cross-sectional observational multi-site study was then conducted. The sites included India, Honduras, Jamaica, Swaziland, Togo, Malawi, Cambodia, and the Dominican Republic. The study began in January 2014 and continued through April 2014. Cedarville University faculty from Pharmacy (7), Nursing (4), and Missions Involvement Services (MIS-1) were selected and interviewed based on medical missions’ involvement. The primary and secondary endpoints were to identify services needed by the patients, then for the sites and the teams accordingly. A questionnaire consisting of five items was created for this assessment: Missions location, services for patients, resources for patient/caregivers, sites, and teams were evaluated. Interviews were set up and completed according to the study time line.</p> <p>Results: Patient education (81.8%) was identified as the most important health care need followed by transportation (36.4%). Pharmacist Intervention and reference materials were identified as the key needs for the sites (72.7%) followed by education for health care workers (54.5%). Education and preparation were the most important needs for the teams. Many of these needs overlapped between locations.</p> <p>Conclusion: Evidently patient education is a paramount need for the sites assessed. Additionally, funding to support these missions is integral for patient care. The results of this need assessment study will be used to fill the literature gap in this area and seek funding opportunities for the services.</p>				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Sara L Hill Courtney Noll Tyler Michael Kelly Huston Christian A Carroll	Graduate Students	Pharmacy	GMO vs. Non-GMO: Comparing the Addictiveness of Corn in Rats	Sara L Hill Courtney Noll Tyler Michael Kelly Huston Christian A Carroll
<p>Genetically modified organisms (GMOs) refer to organisms whose DNA has been altered to produce a certain characteristic. GMOs account for a significant proportion of the crops produced in the United States. Specifically, GMO corn accounted for approximately 88% of all corn grown for human and animal consumption in the year 2012. Previously conducted studies have not uniformly demonstrated the safe use of GMO corn, and no studies have been conducted to analyze the addictiveness of GMO corn.</p> <p>The idea of addiction refers to more than just a physical dependence, but to a psychological dependence on something as well. Addiction is sometimes accompanied by compulsive, uncontrollable behaviors that can interfere with other activities and which increase in intensity as there is an increase in access to the substance. Because food addiction is implicated in the prevalence of obesity and its associated pathologies, identifying addictiveness in GMO products may lead to changes in crop production, food production, and use.</p> <p>This study will compare the addictive behaviors of rats who are fed GMO corn. The rats will be randomly divided into three groups. Each group will be fed a diet containing a portion of corn consisting of 0%, 50%, or 100% GMO corn, respectively, for 28 days. After the 28 day treatment period, the rats will be fed a corn-free diet for 10 days. The assessments will include both cage food consumption and body weight measurements taken during both the treatment and withdrawal periods, and behavioral symptoms observed in an open field test during the withdrawal period. The presence of withdrawal indicators will be scored for each rat. The scores will then be compared between the groups using a repeated measures ANOVA test.</p>				
Rachel Culp Amy Wuobio Jonathan Wilkie Benjamin Robertson Joshua Arnold Kyle Hultz	Graduate Students	Pharmacy	Asthma knowledge, control, and administration techniques in Hispanic caregivers of pediatrics	Rachel Culp Amy Wuobio Jonathan Wilkie Benjamin Robertson Joshua Arnold Kyle Hultz
<p>Objectives: The objectives of this study were to (1) describe asthma knowledge, control, and administration techniques in Hispanic caregivers of pediatric asthma patients in primary care clinics and (2) determine the association between asthma knowledge and control.</p> <p>Methods: A pilot, cross-sectional study was conducted by administering a survey to Spanish-speaking primary caregivers of children under 12 years old with a current diagnosis of asthma. The survey contained: demographic questions (8 items), a modified version of the Asthma Control Test (ACT, 5 self-assessment items, 5-point, Likert-type scale), knowledge (21 items, correct/incorrect response), and inhaler use (1 item, rank ordering steps for using inhaler). Descriptive statistics were performed for all items, and a Pearson correlation analysis was utilized to assess the association between asthma knowledge and control in SPSS v. 22.0 (Armonk, NY), with $r = 0.05$.</p> <p>Results: Of the 12 caregivers, who completed the survey, all were parents of the patients. Seven patients (58%) had controlled asthma. On the asthma knowledge portion of the survey, three caregivers of these patients (25%) scored over 75%, three (25%) scored under 50%, and six (50%) scored between 50-75%. There was a statistically-significant, positive correlation between asthma knowledge and asthma control ($r = 0.668$, $p = 0.017$). No caregivers were able to correctly order the eight step sequence of using an inhaler.</p> <p>Conclusion: A positive correlation between asthma knowledge and asthma control was found in caregivers of asthmatic pediatric patients. Inhaler technique, recognition of asthma triggers, and understanding situations necessitating a physician visit were areas in which participants showed a knowledge deficiency.</p>				
Schuyler E Price Ryan M Hecklinger Matthew B Welkie Jr. Timothy L Norman Elisha R Injeti	Undergraduate Students and Faculty	Pharmacy	Cilia have a Significant Role in Regulating Cell Size in Response to Fluid Flow Induced Shear Stress in a Flow Chamber	Schuyler E Price Ryan M Hecklinger Matthew B Welkie Jr. Timothy L Norman Elisha R Injeti
<p>Cilia are hair-like protrusions on the apical surface of cells. Their function is to relay mechanical signals like shear stress from extracellular into intracellular environment and thereby maintain cellular homeostasis. Ciliary dysfunctions include polycystic kidney disease and new therapeutic interventions based on ciliary function are under investigation. The current study evaluates the use of a custom designed fluid flow chamber's ability to study the role of cilia in regulating cell size in response to shear stress.</p> <p>A fluid flow chamber that continually maintains laminar flow at different flow rates and temperature was designed. Endothelial wild type cells (ETWT) that have cilia and polycystic kidney disease cells (PKD) that lost their ciliary function are grown on different glass slides. Cells on each glass slide are then exposed to continuous flow of phosphate-buffered saline at 37°C in the flow chamber. The optimal flow rate and duration of flow were first determined by measuring the total protein concentration before and after exposing the cells. Cell radius and area before and after exposing them to flow are measured using the NIS Software available on the microscope.</p> <p>The results from protein concentrations ($n = 12$) indicate that cells are still attached at normal physiological flow rate 467 mL/min (2.8 µg/µL) and did not significantly differ from 60 mL/min (4.08 µg/µL) or 600 mL/min (2.73 µg/µL). The results for duration of fluid flow ($n = 22$) show that 60 minutes (0.09 + 0.01 µg/µL) is optimal compared to 120 minutes (0.06 + 0.01 µg/µL) or 180 minutes (0.10 + 0.02 µg/µL). Under these optimal conditions, the average area of ETWT cells ($n = 300$) measured from different slides before and after the flow is 4420.81 + 67.40 µm² and 4678.17 + 87.15 µm² ($n = 200$) respectively. For PKD cells, the average area before and after the flow ($n = 300$) is 5682.46 + 105.48 µm² and 4173.74 + 263.97 µm² ($n = 250$).</p> <p>These results are in agreement with the published literature on the ability of cilia to maintain cell size in ETWT cells in response to shear stress that is similar to normal blood flow. However, under similar conditions, PKD cells could not maintain their cell size as the mechano-chemical signaling pathway that communicates external signals to prepare appropriate intracellular response is disrupted. These results provide confirmation that the custom designed parallel plate fluid flow chamber is a reliable tool to investigate the specific targets in the mechano-chemical cell signaling pathways.</p>				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Laura Cummings Mike Pelyhes Ashley Peterson Phillip L Thornton Zachary Jenkins	Graduate Students and Faculty	Pharmacy	Evaluating Interprofessional Fast Forward Rounds for Transition of Care Education	Laura Cummings Mike Pelyhes Ashley Peterson Phillip L Thornton Zachary Jenkins
<p>Background: "Interprofessional education (IPE) is defined as the process by which individuals from two or more health professions learn with, from, and about each other across the spectrum of their education to improve collaboration, practice, and the quality of health care." [1] Interprofessional Education has recently gained interest as an important aspect of training in healthcare professions, attracting the attention and support of several key pharmacy organizations. Various models of IPE have been implemented to facilitate collaboration among medical, nursing, pharmacy, and social work students and professionals. One model found to be particularly effective among pharmacy students is a mock clinical scenario, requiring interprofessional collaboration in order to yield the best care for the patient.</p> <p>Objectives: This study will investigate the changes in knowledge and attitudes of pharmacy, nursing, and social work students regarding interprofessional education and transitions of care and examine whether fast forward rounds are an effective interprofessional education activity that will benefit Cedarville University, Wright State University and other emerging health science centers.</p> <p>Methodology: Third year PharmD students and senior social work students from Cedarville University and senior nursing students from Wright State University will first work in intraprofessional groups to complete an unfolding clinical scenario about a transition of care. After the first case, an educational session will instruct students on transitions of care and best practices for interprofessionalism. Next, students will be divided into interprofessional groups via stratified random sampling to complete a second unfolding case about a transition of care. The Interdisciplinary Education Perception Scale (IEPS) and the modified Fast Forward Rounds survey will be conducted immediately prior to and immediately following the event in order to evaluate changes in knowledge and attitudes concerning interprofessionalism. Students may also provide feedback and reflection through a collective debriefing session.</p> <p>Analysis: Analysis will be conducted with the Kruskal-Wallis test to find change in attitudes among the students among the different majors. Also, the Wilcoxon signed-rank test will determine changes within each group since normal distribution will not be assumed.</p>				
Neal S Fox Lauren Haines	Graduate Students	Pharmacy	Medication Reconciliation of Medically-Complex Emergency Department Patients by Second-Year Professional Pharmacy Students	Neal S Fox Lauren Haines
<p>Background: There is a high potential for medication discrepancies to occur during patient care transitions. However, health professionals must find ways to reduce these and improve patient care, such as with medication reconciliation. This intervention is used to identify a patient's most accurate medication list by comparing the medical record to another list obtained from the patient, hospital, or other provider. Pharmacists have a major role in this process because of their medicinal expertise, but paying them is expensive, so using students may be more cost-effective. Research has examined fourth-year professional pharmacy students (P4s) performing medication reconciliation during their advanced pharmacy practice experiences; however, no research currently exists that explores the use of P2 students to determine their efficacy.</p> <p>Objectives: The primary objective of this study is to determine the effect of P2 students on medication reconciliation for high-risk patients undergoing care transitions within the emergency department compared to the efforts of P4s as described in the literature. The secondary objective is to determine the impact on 30-day readmission rates.</p> <p>Methodology: This is a historical-controlled, prospective, observational study. Data collection will occur August 2015 through April 2016 at Miami Valley Hospital in Dayton, Ohio. A sample size of at least 34 subjects is required to obtain statistical significance. Subjects will be selected by purposive sampling based on inclusion and exclusion criteria. P2 students will perform medication reconciliation and complete a reporting form providing information on medication discrepancies, interventions, and re-admission dates.</p> <p>Analysis: Researchers will use descriptive statistics, such as mean, mode, and standard deviation, to report each set of data based on normality. One-sample t-tests will also be used to compare P2 data with pre-existing P4 data found in the literature.</p>				

POSTER PRESENTATIONS *(continued)*

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Bethany Sibbitt Brian C Patterson Adam H Altman Brittani H Purkeypile Zachary IlGiovine Nicholaus Christian Phillip J Wenzell Natasha Mehta Raymond Ten Eyck	Graduate Students	Pharmacy	Simulation-Based Interdisciplinary Team Learning—Pilot Study	Bethany Sibbitt Brian C Patterson Adam H Altman Brittani H Purkeypile Zachary IlGiovine Nicholaus Christian Phillip J Wenzell Natasha Mehta Raymond Ten Eyck
<p>Background: Currently, interprofessional education (IPE) is becoming widely integrated into healthcare professional education with regulating bodies including IPE as a curricular requirement. Although recent studies have concluded that students value IPE, there are a number of challenges associated with initial engagement. Many schools are unsure how to approach this interdisciplinary integration. In addition to IPE, simulation has become an important tool in the education of health professionals. As the first exercise at Wright State University involving interprofessional groups composed completely of undergraduates, interested students from the Boonshoft School of Medicine, the WSU College of Nursing and Health, and the Cedarville University School of Pharmacy collaborated to conduct a series of IPE cases in the Department of Emergency Medicine's high-fidelity simulation lab. In order to support a continuous improvement process and identify strengths and weaknesses of the interprofessional simulation, data was collected from all participating students.</p> <p>Methods: This study was approved as an exempt protocol by the University IRB. Repeat surveys were conducted on an interprofessional group of students assessing their attitudes prior to and upon completion of a series of simulations. The survey included 6 Likert scale questions and a comments section. Paired t-test and frequency analysis were utilized for each of the survey questions to determine baseline status and determine any statistically significant change from baseline.</p> <p>Results: Students from all health professions demonstrated positive attitudes toward IPE and simulation training. Results from four of the survey questions demonstrated a statistically significant positive increase in differences between pre-simulation and post-simulation survey. Baseline responses indicate a strongly positive attitude towards IPE. In comparison to pre-simulation survey responses, post-simulation responses demonstrated significant increases in students' experience and perceived value of high-fidelity healthcare clinical simulation. Additionally, there were statistically significant changes in students' perceived value of interdisciplinary team training and its importance in the future of medical education.</p> <p>Conclusion: This study found that students from all three participating health professions demonstrated overall positive baseline attitudes toward IPE that could be further enhanced through participation in simulation-based exercises. This study provides a model of one method for integrating IPE into curricula for healthcare professionals.</p>				
Myriam S Ojeda Rebecca Kyper Miriam A Ansong	Undergraduate Students and Faculty	Pharmacy	Multi-state gap-analysis research to identify resources of need for free clinics that service indigent, underinsured, and underserved populations	Myriam S Ojeda Rebecca Kyper Miriam A Ansong
<p>Purpose: To identify specific services and resources to best meet the needs of patients and providers of free medical and pharmacy clinics for underserved, underinsured and indigent patients.</p> <p>Methods: Access to affordable medical care for the underserved, underinsured, and indigent populations has been a primary focus of controversy among medical professionals for years. Despite teams of healthcare professionals, organizations, and health departments implemented models to care for these populations, there are still limited resources available. A literature search in Pubmed, IPA, CINAHL and Cochrane identified a large gap evaluating a need assessment of free medical clinics. A prospective cross-sectional multi-state three-arm pilot study was conducted from October 2013 to August 2014. Nine clinics in the states of Ohio, Kentucky, and Indiana were selected based on interdisciplinary practice foci. Clinics were interviewed telephonically to establish interest in participation. The study had primary, secondary, and tertiary endpoints orderly. These endpoints evaluated the most desired services for each clinic, site perceptions, willingness to collaborate, and timeline for service implementation to enhance patient care. Visits were made to the clinics between April and May 2014. A questionnaire consisting of 12 items was created to assess the following areas: patient population, services for patients, patients and providers perspectives on needs, most needed resources, site willingness for collaboration and desired timeline for service implementation. Interviews were conducted according to the study timeline.</p> <p>Results: IT personnel (55.6%) was identified as the most common need among the clinics followed by grant assistance (44.4%) as well as administrative personnel (44.4%). Forty four (44.4%) needed assistance with Grant writing and resources. Eight of the nine sites were willing to collaborate, and all sites desired implementation as soon as possible. Many of these needs overlapped between sites.</p> <p>Conclusion: Evidently IT personnel was a paramount need. There was a strong desire to collaborate, and an urgent desired timeline implementation. Funding to support these efforts is integral for patient care. The results of this need assessment study will be used to fill the literature gap in this area and seek funding opportunities for the services.</p>				

PERFORMANCES

NAME	POSITION	DEPARTMENT	ABSTRACT TITLE	ABSTRACT AUTHORS
Toni Crouch	Undergraduate Student	Music & Worship	Bartók the Pioneer	Toni Crouch
	The 20th century Hungarian composer Béla Bartók became interested in folk music and pioneered the study of ethnomusicology. His deep interest resulted in a large output of work unlike that of his peers. Much of his music was based upon folk melodies and harmonized in ways that were unusual for the Western world, which was just emerging from the Romantic era. This project will explain how Béla Bartók contributed to the study of folk music and how his work was influenced by it.			
Robert B Rhodes Jr. Aleska Barkoviak Danielle Hutchison Caleb Peterson	Undergraduate Students	Music and Worship	The Progression of A Cappella Music in the Early Church	Robert B Rhodes Jr. Aleska Barkoviak Danielle Hutchison Caleb Peterson
	This research presentation aims to show the progression of a cappella music throughout the history of the early church. This progression will be demonstrated through in depth research on the style of music in the early church. There will also be an exploration of the forms used in the compositions. Along with these, the use of the music in the church will be studied and explained. This examination will be solidified through the performance of multiple musical examples. These sacred songs span the 15th and 16th centuries and show the breadth of musical writings during this time. These musical examples will also demonstrate the influences of the composers on their sacred songs. Such composers as Sweelinck and Palestrina will be included. Transitioning from monophony to homophony and then to polyphony, this presentation will show the complexities that enriched the worship experience of the people during this time. The intention of this presentation is to show the development of musical composition and the influence this had on the church.			
Jacob A Tudor Allison Butterworth Joy Brammer	Undergraduate Students	Music and Worship	Klezmer: A Musical Tradition	Jacob A Tudor Allison Butterworth Joy Brammer
	The tale of klezmer music is both rich and full. The term klezmer, meaning a vessel of songs, explains the natural ability for us as humans to express ourselves through song, whether instrumental or vocal. Encompassing a variety of styles of music, klezmer music incorporates gypsy music, Russian folk music, and dance songs to become an extension of the human voice. This presentation traces the deep history of klezmer music from its earliest beginnings through World War II, where the klezmer music genre almost became extinct, and to its revitalization and preservation beginning in the 1960's. In addition, it introduces the variety of components and characteristics of klezmer music. The klezmer music tradition continues to be appreciated globally by different peoples through the efforts of groups like the Cincinnati Klezmer Project whose purpose is to preserve the sounds and stories of a culture for the enjoyment and enrichment of future generations.			
Bethany K Thompson	Undergraduate Students	Music and Worship	Kabalevsky Concerto in C Major	Bethany K Thompson
	Dmitri Kabalevsky composed a violin concerto in C Major. This concerto is comprised of three movements, but I will be playing the first movement. I will give a short presentation on Kabalevsky himself and on the history of the piece. This violin concerto is one of the first concertos Kabalevsky composed and he dedicated it to the Soviet youth. Kabalesky sought to motivate children and young students in the Soviet Union, through his music. This violin concerto was first performed by 18-year-old, Igor Bezrodny, in the fall of 1948. This piece is full of life and contains characteristics of Russian music. The first movement is full of quick rhythms and even contains a Ukrainian folk tune. Dmitri Kabalevsky served his country faithfully and reflected this in the music he wrote.			
Kyle T Darwin	Undergraduate Students	Music and Worship	Musically Metallic Morphology	Kyle T Darwin
	Brass instruments (in this case, all musical instruments constructed from brass) have a long family tree stretching back to the dawn of man when wind instruments like the flute, trumpet and horn were used not for the enjoyment and pleasure of the people, but rather to aid in man's struggle against the forces of nature. These ancient ancestors were made from wood, cane, or bone. Like these materials were back then, today, brass is a very common material used in instrument construction thanks to its superior acoustical properties. When looking back through history, one can observe that the use of brass is a relatively recent addition. While conducting many hours of research diving into famous books on the topic like Curt Sachs's "The History of Musical Instruments" I kept in mind two overarching questions: How did instruments made from brass come to be, and why? My research yielded information on topics like the ancestry of our modern instruments in ancient wood, bone, and cane and information about the first metal instruments being found buried with the body of King Tutankhamen. Through reading about musical acoustics and the properties of metal, I learned that metal is a good choice for instruments, especially metals like brass and bronze (the latter of which was the first metal to be used in mass for instruments); how vibrations work and what their function is in acoustics; how the overtones series controls the color of your instruments sound and how that is greatly affected by something as simple as the density of the material the instrument is made out of. In the end, our modern brass wind instruments could not have been created without great advancement in metallurgy, musical evolution, and historical discoveries.			



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