

Abstracts

The 4th Annual Student Scholars Symposium

April 9, 2015

1. Paper Presentation - Bible and Ministry (Graduate)

Genesis as a Template for John's Gospel

Steven Grant and George Goldman

John's scroll is not considered one of the synoptic gospels for good reason. Compared to the other gospels, John only shares 5% of the same content contained in the other three. Perhaps the best illustration of the differences between John and the synoptic gospels is the account of the cleansing of the temple. The account occurs near the end in the synoptic gospels (Mark 11, Luke 19, Matthew 21), and near the beginning of John's gospel (John 2). Knowing how many chapters are in each gospel is unnecessary in order to realize that there is, at least, a chronology issue with this temple account. However, there may be a reason for the placement of the account in John's gospel. Perhaps John, the historiographer, purposely moved the account for a reason. The reason may be found in comparing John with the only other book that shares the same opening "In the beginning". Genesis not only shares the same first words as John but the first six events of John are analogous to the six days of creation. It is very likely that John was using Genesis as a guide for more than just his introduction. This abstract is an introduction for a presentation of the comparison of the six days of creation with the first six events of John. This comparison will reveal more clearly John's affinity with the scroll of Genesis.

2. Paper Presentation - Bible

A Divided Body: Church Elitism in 1 Corinthians 11:17-34

Christiana Muir and Mike Williams

In the first century, Corinth was a successful mercantile community in which prosperity and status meant everything to its people. However, while most referred to the Corinthians as people who had achieved success, the apostle Paul deemed them as worldly people not living by the Spirit (3:1). This theme is apparent throughout the entire letter of 1 Corinthians, specifically in verses 11:17-34 concerning the abuse of the Lord's Supper. The purpose of this paper is to analyze the social structure of the Corinthian church, depict underlying issues and misconceptions of the Lord's Supper, and to determine the correct way to take communion according to Paul. Paul's indictment toward the Corinthian Church is based upon the clear social division that existed within the church body. While the wealthy got drunk on bread and wine, servants would come to church after work only to discover that the entire communion feast had been eaten with nothing saved for them. Communion's original intent was to unify God and His believers by commemorating Jesus's sacrifice with the bread and cup. However, in a community where success dominated humility, there could not be unity within the body nor with God. Paul is specific that those who continue to allow this social barrier to exist are casting judgment upon themselves resulting in sickness and even death. Paul's plea to the Corinthian Church is that they will wait for one another, take communion together, and restore unity among the body of Christ.

3. Paper Presentation - Bible

On Covering the Head While Praying or Prophecy in the Public Assembly

Michaela Genz and Michael Williams

This paper is an exegesis of 1 Corinthians 11:2-16 which examines Paul's instructions to the Corinthians regarding head coverings while praying and prophesying in the public assembly. Paul commands men to have their heads uncovered, and women to have theirs covered. Many of Paul's arguments are open to multiple interpretations and this has engendered a significant amount of discussion by scholars. This paper presents several of these interpretive possibilities as well as the author's own conclusions. In addition, the paper attempts to address the question of the text's current application. While some fundamentalists try to impose a literal reading of Paul's headwear instructions, a more thoughtful application would be to learn from the spirit of the commands. The paper examines both what the text meant for the Corinthians, and then applies that message in a relevant way for Christians today.

4. Paper Presentation - Biology

Inhibition of Topoisomerase2 with HU-331 results in axonal path finding defects in *Danio rerio*

Kadilee Adams and Bonny Millimaki

Topoisomerases (TOPO) are vital DNA repair enzymes that function to relieve torsional strain induced during replication and transcription. Recent studies have indicated that TOP2 β , one of the vertebrate isoforms of TOPO2, is necessary for proper neural development, however TOP2 α 's role in neural development remains unclear. In order to better elucidate the effect TOP2 has on the development of neurons, we treated zebra fish embryos with a catalytic inhibitor of TOP2, HU-331, during the peak times of neural development, 12-24 hours post fertilization. To examine embryonic behavior we performed a startle response assay. Control embryos responded to a stimulus by quickly swimming away in a straight line. Those treated with Hu-331 had a delayed, weak response and some swam in a circular pattern. Staining of the axons in the brain with anti-acetylated tubulin or anti-3A10 antibodies revealed that a pair of commissural neurons, Mauthner neurons, have aberrant axon pattern in treated embryos when compared to control embryos. This suggests that the role of TOPO2 in neural development is to aid in proper axonal path finding.

5. Paper Presentation - Biology (Graduate)

Immunoproteasome activation mediated via JAK2 signaling pathway in the presence of IFN- γ

Kristin Ali Keith and Amanda D. Williams

Immunoproteasomes differ from proteasomes in three key subunits: LMP2, LMP7 and MECL1 and vary in cleaving preference - optimizing the efficacy of cleavage of the antigen for MHC-

class 1 antigen presenting cells. The immunoproteasome specific antigen peptides are presented on the outer surface of the infected cell via immunoproteasome and MHC-1 processing allowing the T-cells to phagocytize the infected cell line

6. Paper Presentation – Business (Graduate)

Decision Making in the Business Strategy Game

Christopher Avrit and Chuck Capps,

I am going to present on the Business Strategy Game I competed in as part of the Business Policy and Strategy Class and the following international round of the Business Strategy Game. I will describe the key variables that led to winning the game including marketing choices, shipping methods, production strategies, and market positioning. I will also discuss how we made these decisions through a mix of research, market analysis, and team discussions. The results of the project included winning, with a return on equity, the highest ranked scoring measure, almost 30% higher than our nearest competitor, and receiving an invitation to a global round of the Business Strategy Game in which my team tied for first.

7. Paper Presentation – Communication & Journalism

Home Matters Nashville - Public Relations Campaign

Sara-Jane Kerstetter, Lauren Temple, Nicole Anderson and Aerial Ellis

There is a housing crisis in America. More than half a million people in the U.S. do not have a home, a quarter of whom are children. More than 50% of Americans are making detrimental sacrifices (getting an additional job, deferring retirement savings, cutting back on healthy foods & health care, running up credit card debt and moving to less safe communities or communities with worse schools) just to be able pay their rent or mortgage. Locally, the decade-long run that has brought Nashville national accolades as a destination city has upended neighborhoods. It has ushered in a new class of people and pricier homes into Davidson County's inner core, raised property values and rent, and displaced those who can't afford to stay. Home Matters is a national movement designed to ensure that every American lives in a safe, nurturing environment with access to education, healthcare, public spaces and community services. Our public relations campaign is focused on increasing awareness of Home Matters and its mission using stories of home that will result in target audiences sharing their own stories, volunteering with a local Home Matters housing non-profit and engaging local Nashville community in the conversation about local housing needs and issues. The campaign includes the four components: research, planning, implementation and evaluation. It will assist in raising awareness, increasing local media coverage; suggest potential fundraising initiatives and securing volunteers and materials for Home Matters. In addition, it will introduce sustainable learning and implementation tools.

8. Paper Presentation – Communication & Journalism

Food Loss and Waste by Global Region: Analysis and Proposed Reduction Strategies

Emily Henry, Prill and Aerial Ellis

Food waste and food loss are global phenomena, but vary significantly by region in their primary causes, immediate and long-term effects, and viable solutions. This paper examines the differences among the food loss and waste problems of the Middle East and North Africa (MENA) region, India, and the United States, and suggests distinct reduction strategies for each. MENA countries tend to suffer large amounts of food loss between the field and market, frequently struggling with lack of access to or cultural resistance to modern agricultural technology and techniques. India experiences the majority of its food loss between harvest and delivery to market, most often due to improper storage and inefficient distribution systems. Affluent nations such as the United States are primarily affected by food waste, the rejection or waste of edible food by retailers and consumers caused by cultural perceptions of both food and abundance. In response to the differing economic, political, and cultural issues surrounding food loss and waste in each region, a reduction strategy addressing the core participants and key perpetuating circumstances in each of the examined cases is proposed in this paper.

9. Paper Presentation – Communication & Journalism

Chattanooga Area Food Bank Public Relations Plan

Alex Walker and Aerial Ellis

I am submitting a public relations plan for a non-profit called the Chattanooga Area Food Bank. This plan outlines 3 new campaigns that the CAFB can implement in order to raise awareness and funds for the food bank. The plan outlines an implementation plan for each new campaign with program goals, communication strategies, evaluation plans, and much more.

10. Paper Presentation - Education (Graduate)

Streetwise Educators: Social and Emotional Learning in Pre-Service Teacher Candidates

Will Penner, Olivia Travis, Bob Masoner and Keith Nikolaus

Social and Emotional Learning (SEL) competencies in preK-12 have demonstrated decreases in disruptive behavior, increases in self esteem, and gains in academic achievement. Several organizations, associations, and collaboratives have worked to codify SEL components, advocate for preK-12 curricular inclusion, and develop specific programs for that purpose, but very little research has occurred at the collegiate level, either for the general student population or for pre-service teachers specifically. Since the effectiveness of SEL at the preK-12 levels depends to some degree upon the social and emotional competencies of the teachers, it stands to reason that teacher education programs should contain some degree of intentional SEL development, if only to improve the teacher's preK-12 SEL instructional effectiveness. In addition to transferability to preK-12 students, deliberate infusion of SEL into teacher education frameworks seems

important to the pre-service teachers themselves, both personally and professionally. A small but growing body of research suggests a higher teacher SEL skill level increases professional efficacy, decreases stress, and increases job satisfaction. Therefore, university-based teacher education programs are trying to embed SEL competencies within their coursework, but not many have studied how effective those efforts have been. Our research team studied the effectiveness of SEL competency development within pre-service teachers in three middle Tennessee universities. We looked at professors' perceptions of their educational practices and teacher candidates' SEL development and we compared those with new teachers' perceptions of their SEL skills and the practices embedded in their training programs.

11. Paper Presentation - Education (Graduate)

A Post-Secondary Matriculation Case Study of Two Rural Tennessee Counties

Trish Holliday, Burton Williams and Jason Rushing and Trace Hebert

Access to post-secondary education is vital to communities aspiring to increase economic development opportunities and provide a well-prepared workforce to address the demands of long-term economic growth. Recent research in education has disclosed different findings related to the post-secondary matriculation rates among high school. While these studies provide useful information on college access and post-secondary matriculation, they fail to make recommendations on the best practices for increasing the post-secondary matriculation rates, particularly in rural communities. While educational achievement is important to society, rural areas are faced with a unique set of challenges in terms of the ability to successfully educate their populations. Many approaches intended to address these needs are currently in progress and being funded; however, there is no one size fits all approach that works for every. The purpose of this study was to assess the effectiveness of the strategies currently in place in two rural Tennessee county school systems to increase post-secondary matriculation rates. The need for such a study has implications at many levels including: workforce readiness, economic development, and regional advancement. As post-secondary matriculation gaps widen between suburban and rural areas in Tennessee, the need for effective secondary strategies emerged as a vital area of study. Abraham Maslow's motivational theory provided the guiding theoretical perspective for the research. The application of Maslow's theory to post-secondary matriculation focused on how the students' needs are addressed in the secondary school environment in order to positively impact the motivation to further succeed in education after high school graduation.

12. Paper Presentation - Education (Graduate)

Goal Setting With Contingency in a Child with Autism

Megaera Rye and Amber Music

The effects of goal setting combined with a timed contingency for positive reinforcement were analyzed. The subject was an 11-year-old child with autism that struggled to complete assignments within a reasonable amount of time. Using a reversal or withdrawal design (ABAB),

goal setting with contingency was observed to significantly increase assignment completion time within the child.

13. Paper Presentation - Education (Graduate)

Literacy interventions for 9th graders

Ginger Hollingsworth, Frank Tittle and Trace Hebert

Our research is focused on ninth grade literacy interventions in two high schools in Middle Tennessee. Using 8th grade TCAP scores, students were enrolled in a literacy focused World Geography course. Both schools used Achieve3000 software as one of their strategies to improve literacy scores. Assessments were taken by measuring Lexile levels. There is a significant number of ninth-grade students who are not performing on grade level in the area of literacy. Since literacy impacts the ability to learn overall, this deficiency is having a negative impact on the students' lives. Research indicates that not reading on grade level could have a life-long impact on students and their communities. The purpose of this study was to determine if the current literacy intervention(s) significantly increase ninth grade students' overall academic achievement to include assessment results at two high schools in a middle Tennessee school district. The study analyzed attendance rates and discipline history for the selected students.

14. Paper Presentation - English & Modern Languages

"Hostelity": A Creative Writing Reading

Megan Peters and Sonya Green

"Hostelity" is a creative essay wherein adolescence freedom is explored. Set in a shabby hostel within London, the piece recounts its protagonist's whirlwind weekend as she first travels with friends whilst studying abroad. As tensions flare between the group members, the protagonist comes face-to-face with both internal and external conflict within the group as she desperately tries to mediate everyone's tempers. Throughout the piece, themes of cultural exploration, identity, adolescent fluidity, and the ever-present reality of uncertainty are addressed. The protagonist explores these themes in the essay as she walks back to the hostel, waiting nervously for her friends to call and discovers that the price of her international freedom may be more than she's willing to give.

15. Paper Presentation - English & Modern Languages

Wait, What's Wakanda: A Post-Colonial Reading of Marvel's "Black Panther"

Megan Peters and Sonya Green

First introduced in the turbulent 1960s, Marvel's "Black Panther" has become an iconic comic with fans and critics alike. Still today, the comic's reputation has spurred countless of story arcs within Marvel 616 Universe's and with the studio's recent decision to bring the superhero to

theaters. "Black Panther" continues to be a popular superhero within Marvel's roster. All of that's not even to mention that T'Challa, the man behind the Black Panther's mask, is arguably one of the finest African-American superhero that Marvel has ever made. Created by Stan Lee and Jack Kirby, the two infamous artists-slash-writers intentionally looked beyond traditional hegemonic conceptions of race to create a superhero whose strength was fundamentally derived by the rich history of his people. In this paper, I will be arguing that "Black Panther" was the direct product of Post-Colonial thought. Using both published comic resources by Marvel and theories from scholars such as Scott McCloud, Edward Said, and Adilifu Nama, I will demonstrate how the "Black Panther" bolsters anti-colonialist sentiment while reflecting back on previous Post-Colonial literature as an ethnographic text. With this, I will specifically be analyzing T'Challa's dual-identity as a hero and as a leader of Wakanda, and most importantly, how he protects his untouched native land from threatening imperial forces at play.

16. Paper Presentation - English & Modern Languages

A Bee and a Bloom: Sexuality and Satisfaction as Adventure in Their Eyes Were Watching God

Ellen Findley and Sonya Green

Over the course of about forty years, Zora Neale Hurston's *Their Eyes Were Watching God* follows Janie as she falls in love and becomes the heroine of her own journey, in which sexuality and fulfillment are an adventure. The defining metaphor of Janie's adventure is the image of a bee and a blossoming pear tree: Janie sees herself as the tree and spends her adolescence and early adulthood searching for a bee to fulfill her. Her pursuit mirrors that of a traditional heroine's tale. She marries three times, each husband representing a stage of her life as she looks for fulfillment first in love and then in sharing her voice. Sharing her story with a listener who cares to hear allows Janie to wrap herself up in the memories of a love worth having and a blossom worth pollinating and to let herself be at peace.

17. Paper Presentation - English & Modern Languages

"Like Oklahoma": Male Authority and Nature in Fuller's Autobiography and My Poetry

Kimberly Kolpek and Dana Carpenter

Margaret Fuller uses her Autobiographical Romance to evaluate her father's strictness. In her short creative non-fiction piece, she reveals the oppression her father caused her during her childhood; her work further uncovers the mixed gender roles that she experienced as part of that oppression and her tendency to draw relief from the oppression by spending time in nature. After several close readings of Fuller's piece, I wrote the poem, *Like Oklahoma*, to re-create Fuller's experiences in the context of a poem. The poem includes a speaker who, like Fuller, undergoes mixed gender roles, oppression, and freedom in nature. My presentation includes a reading of "Like Oklahoma" and an explanation of connections between the poem and Fuller's piece.

18. Paper Presentation - English & Modern Languages

Stolen

Amber Thompson and Dana Carpenter

The short story “Stolen” captures a young girl trapped in The Routine. The heroine, Z, is imprisoned in a cell without human contact or outlet for creativity; Z is forced to perform a system of banal tasks every moment of every day for years on end. Z’s routine is interrupted when an outsider begins speaking to her, culminating in recovered memories of a life spent outside the four bare walls of her existence. This short story is laced with ambiguity and internal conflict. “Stolen” maps the progression of a girl’s discovery of and ultimate desire for connection against all odds. The narrative, mirroring Z’s cell, is stark and uninviting; yet I craft a character whose very detachment demands sympathy and engagement. My piece takes the reader on a journey through a young girl’s path of escape without ever leaving her room.

19. Paper Presentation - English & Modern Languages

Depravation Theater

Jennifer N. Sellers and Dr. Jan Harris

Depravation Theater is a suspenseful short story about its main character, Sydney, who had her struggle to confront isolation after she is abducted. This piece explores thematic material of mortality and the need for survival in a fatal setting. Text Selection: Before I could isolate where the pain was coming from, a scream violently ripped itself from me. My body started bucking against the all-consuming pain that was now exploding all over; my voice was shrieking out in protest, echoing in the small space. Space, I grabbed onto that thought but I couldn’t hold it, I couldn’t think past the agony. My thoughts disappeared with my voice. Pain from the rawness in my throat was lost to the rest of my body’s protest to be center stage. Only the sound of raw meat slapping against metal was left to fill the room as my body bucked again and again against the pain. This time, there was no following unconsciousness just my own shrieks in an eternal darkness to keep me company.

20. Paper Presentation - English & Modern Languages

Tristan and Isolde: Transforming Courtly Love

Brooke Foster and Dr. Jan Harris

In this paper entitled, Tristan and Isolde: Transforming Courtly Love, I examine the details of the relationship between Tristan and Isolde in Gottfried Von Strassburg’s poem, Tristan and Isolde. The female protagonist, Isolde, rebels against standard courtly love ideals through her gender-defying characteristics and equality with Tristan, the male protagonist. In a typical courtly love triangle there is a beautiful woman playing the role of the beloved, a knight playing the role of the lover, and a king or man of noble stature playing the role of the beloved’s husband. All of these aspects hold true in the courtly love affair of Tristan and Isolde; however, Isolde, while

beautiful and married, is not totally devoted to her husband, but rather to Tristan, her lover. Isolde challenges the archetypal role of the beloved through her actions of deceiving her husband, not participating in the marital duties of a medieval woman, and ultimately dying alongside her lover out of sheer will. This essay explores how Gottfried redefines the role of the beloved in the courtly love triangle through the relationship between Tristan and Isolde.

21. Paper Presentation - English & Modern Languages

Thirty-seven Weeks between Heaven and Earth

Shelby Smith and Stacia Watkins

This short story is inspired by a young couple I heard of recently. I don't know enough about them or their story to say that this piece is based on a true story, but the little I did hear of their courage and grace inspired me to write this piece. I placed my fictional couple in a similar difficult situation as my inspirational couple, expecting a baby who is not predicted to survive past birth. And I gave them the courage to make a similar difficult decision to continue their pregnancy and make a Bucket List of sorts for their unborn child, packing as much Life into the short months that they have their child. I also stayed true to my inspirational couple in the outcome of this piece. I chose to write this story as a series of letters from the young mother to her unborn child to fit as much narrative as possible from a busy nine months into a short story, while still including the insight of the parents through the transparency and intimacy of the mother's voice to her child.

22. Paper Presentation - English & Modern Languages

Interracial Marriage through the Lens of Dorothy West's "The Wedding"

Allie Sockwell and Jan Harris

In this paper, I examine West's use of characters in her novel "The Wedding" against the coercions of class and color within a socialite neighborhood. Through this, West exposes the widely accepted views from the novel's time period and beyond. By gaining an understanding of West's own life and her motives, readers can better dissect the plot and purpose behind "The Wedding", specifically through issues of race and class. The paper begins by giving background on West's life, a summary of the novel, highlighting the setting, main characters, and the problem at hand (the main character, Shelby, feels torn about going against her neighborhood's wishes and marrying outside of her race). After moving through the motivations of West within this novel specifically, I provide an overview of the time period and laws that occurred during the 1950s, regarding race. This novel is set in 1953, a historically booming time in America. A question I focus on through the lens of the main character is, "How does one make a personal decision regarding relationships and race, especially if it goes against society?" "The Wedding" serves as an example of exploring the views and expectations of racial relationships. Society, throughout the years, has defined people based on their race and skin color. With this prejudice come barriers in relationships, specifically with marriages. It appears that West's motivations are to reclaim the past while telling the experience of African Americans' history.

23. Paper Presentation - English & Modern Languages

Memory and Its Role in Deciphering Truth in Tim O'Brien's "The Things They Carried"

Anna Johnson and Jan Harris

Not long after much of the world emerged from the Vietnam War, Tim O'Brien released his novel "Going After Cacciato", detailing events similar to those of Vietnam. O'Brien's work began to shed light on aspects of the war that the general public had not yet been introduced to, and the aspects that were not necessarily easy to digest. In a further exposition of true war sentiments, O'Brien released his collection of fiction, "The Things They Carried," which used fiction, metafiction, and memory to attain a more real, gut truth. In "The Things They Carried," O'Brien interweaves his personal memories with his own imagined stories, creating a dance between fact and fiction seemingness, and the way things were, that evokes the question of what truth really is, and if memory can be used to aid in that answer, or if memory itself is a fiction.

24. Paper Presentation - English & Modern Languages

Ethics, Narrativity, and Success: Ian McEwan's "Atonement"

Macon Overcast and Kimberly Reed

Unique, equivocal, and convicting is the appeal of Ian McEwan's Atonement, which has confirmed itself as a contemporary classic through its exploration of the relationship between readers, authors, and characters. By exploring Atonement, the criticism of many scholars has created a platform on which more observations of the relationship between readers and fiction can be analyzed. Atonement provides a pristine environment to consider both reader and authorial responsibility through McEwan's adept collaboration of narrative theory and literary devices. Gaps, allusions, and narrativity moderate a reader's relationship to characters in the text before London 1999; an understanding of heterogeneous psychology and ontological egalitarianism enhance a reader's understanding of these tools upon finishing the novel. Freud's assertion that silence is an active voice in communication augments character analysis of Atonement by comparing the gaps left by Briony to gaps that readers must fill while judging her. The binaural reception of meaning in Atonement is always suspect to further investigation due to the variance of human experience; no two people have congruent histories.

25. Paper Presentation - English & Modern Languages

Reviving Ideals: Zora Neale Hurston's View of Womanhood based on Proverbs 31

Jennifer Greene and Sonya Green

Questions in regard to ideal womanhood have been around for centuries. These inquiries have been categorized under a title of their own: "the cult of true womanhood". Texts ranging from Biblical times to the modern day examine womanhood, and chapter 31 of the book of Proverbs from the Bible presents an ideal woman: the wife of noble character. Zora Neale Hurston also examines the perfect role of a woman in her novel, Their Eyes Were Watching God. Through

the development of the character Janie, Hurston's own view of womanhood can be examined: a view which resembles the woman presented in Proverbs 31 rather than the 20th century true woman. In my paper, I plan on looking into this by juxtaposing Hurston's beliefs in her novel with the Proverbs 31 text and then comparing these views with those of the early 20th century American society.

26. Paper Presentation - English & Modern Languages

Instilling a Love for Reading: Young Adult Literature in Classrooms

Rachel Devoe and Stacia Watkins

Curriculums within our public schools force teachers to teach specific books regardless of the interest of their class. As a result of this, many students in today's society have little to no interest in reading. Young Adult Literature is becoming more popular with not just school aged students, but adults too, and implementing it into classrooms could highly benefit the interest levels and abilities of our young adult readers. This essay compares young adult literature to the literature of the canon and presents the idea that teachers should have at least more freedom, if not complete freedom, to choose whatever books they would like to teach in their classrooms.

27. Paper Presentation - English & Modern Languages

You Are What You Speak

Hailey Bryant and Stacia Watkins

My paper uses Robert Lane Greene's *You Are What You Speak* as the driving force behind my further research of linguistics and the ways in which they shape us. Greene delves into the complex subject of linguistics and its effects on one's identity in his book, tracing the historical aspects of language evolution as well as the effects such changes have had upon its speakers. Misconceptions about the English language have pervaded those who speak it, each believing something different about what is inherently correct or incorrect about our beloved tongue. Speakers of all languages have struggled to comprehend how intricately interwoven our native language and natural state of thinking are, something that has been detrimental to our perception of others and their dialects. From the false notion that one language is superior to another, to the ways in which language influences nearly every aspect of a person, Greene seeks to debunk the common myths and more fully explore the numerous connections between language and identity. Using Greene's theories and findings, I further researched the concept of language and its deep connections to our identity within social and psychological contexts, composing a paper that provides one with a better understanding of the beauty and complexities that lie within our different tongues and dialects, as well as the effects these differences have upon the workings of our minds.

28. Paper Presentation - English & Modern Languages

Alam's Melody

Harry Loyd and Stacia Watkins

Alam's Melody is a fantasy story about a young musician attempting to write the song of all songs, a melody that goes on forever without repeating. It is an example of the Heroic Task vein of stories, where the hero tries themselves against some impossible task, usually at great cost. In this example, our big-hearted hero is drawn deeper and deeper into his music, becoming more distant and isolated as he goes. It has many trademarks of an obsessive self-destruction story, but in this particular example, our hero begins to make real progress, making music the likes of which no one alive has ever heard. The true conflict of the story is that the goal is not a mirage at all, but something real and within Alam's grasp. Even so, he seems to be losing himself along the way. The question posed is one of passion versus person, asking how much of ourselves we can give to the things we love, and at what price.

29. Paper Presentation - English & Modern Languages

Choices that Matter: Incorporating Young Adult Literature in the Classroom

Sarah Robertson and Stacia Watkins

Looking into English classrooms across the decades, one thing hasn't changed much: the study of the classical canon. These books, though works of art in their own right, are arguably becoming more and more difficult to access for the changing generations. The natural response might seem to be to simply supplement some of these classic books with their more modern counterparts, but there is a problem with how many educators view modern Young Adult texts. They do not believe that they hold an equal value to the current options from the canon, largely in part due to stereotypes attributed to Young Adult literature. However, to enhance student learning, we, as educators, should shift our focus onto how we can incorporate student choice and preference into common curricula and classrooms, which should involve Young Adult literature. By allowing students a choice, their potential enjoyment increases, which in turn increases their potential for learning.

30. Paper Presentation - English & Modern Languages

Living in Diaspora: Seeking Self-Possession in the New World

Jillianne Jerkins and Brandi Kellett

Anzia Yezierska's Bread Givers is a story of upward mobility and the Jewish experience in 1920s America. However, it is also a story of the protagonist's personal growth and development over a lifetime of trials. The author designed Sara Smolinsky's journey in a very intentional way. It was a journey toward Sara gaining self-possession and claiming her subjecthood. As a displaced person controlled by abject poverty, she has no control of her personal identity so she must actively seek it. In doing so she claims her subjecthood and captures her identity as both an

educated American and as an immigrant in the midst of a 20th century diaspora. With this presentation, Yeziarska demonstrates that assimilation is only possible for immigrants when they confront their culture, their displacement, and their new environment. Her road very intentionally begins and ends with her father, a first step and then a final move toward resolution. Yeziarska devises other vital interactions along Sara's path to help her grow and develop. Without these interactions, Sara never would have been able to claim herself, as she would have no definition of herself outside of comparisons to her family and a feeling of other and alienation bred by her displacement. Furthermore, as a child of a strict, traditional culture that exists within an ever-modernizing world, she would have forever remained an object of her father's house rather than being the subject of his salvation when the modern world overtakes his traditional life and places him at her mercy.

31. Paper Presentation - English & Modern Languages

Literacy and The Giver: How Young Adult Literature can Attract and Teach Emerging Readers

Jordan Taylor and Stacia Watkins

In this paper, I discuss reading difficulties in students, and how young adult fiction helps teach the necessary reading skills while keeping the interest of emerging readers in the classroom. I use *The Giver*, a young adult novel by Lois Lowry, as my example text connecting the two points together. I begin by defining what an emerging reader is, and what an emerging reader needs in a book to engage them on their reading and their interest level. My argument is by using young adult fiction in the classroom, students are able to grasp the material, read texts in their range and ability, and engage themselves in topics that are at their age level. I use *The Giver*, a young adult dystopian novel published in 1993, as an example text to support my argument; with its simplistic style and text features, coupled with complex and interesting themes, *The Giver* gives students with reading difficulties a book that is on a basic reading level, yet has complicated enough themes and topics to engage the reader. By using young adult fiction in the classroom, we are meeting emerging students where they are, both in their reading difficulties and topical interests.

32. Paper Presentation - English & Modern Languages

Glass Family Philosophy: Spiritual Crisis and Epiphany in Salinger's Franny and Zooey

Megan Roberts and Jan Harris

In *Franny and Zooey*, J.D. Salinger articulates the Glass family's philosophy. In Salinger's oeuvre pre-*Franny and Zooey*, he deepens the Glass children's relationship to one another and to their evolving belief system. Expressed through the martyr-figure Seymour and his disciple-siblings Buddy and Zooey, the Glass's philosophy emerges as a scholarly blend of Eastern religion and the New Testament. Franny's spiritual crisis in the short story, *Franny*, highlights the delicate line between mystical knowledge which leads to isolation, and enlightenment which leads to unity. In *Zooey*, the resolution of Franny's crisis affirms spiritual transcendence, while

rooting that transcendence in loving one's neighbor. Salinger does not enforce a particular system of belief, but rather promotes sensitivity to the inherent value and interconnectedness of human life.

33. Paper Presentation - English & Modern Languages

Frankenstein as a Response to Wollstonecraft's Feminist Theory

Ellie Clayton and Brandi Kellett

Considering the close bonds between Mary Shelley and literary figures such as William Godwin, Mary Wollstonecraft, and Percy Shelley, it is advantageous to entertain the question: how did these famous philosophers and writers influence Mary Shelley's fiction? Specifically, I would like to address the presence of Wollstonecraft's theory concerning gender equality and the structure of the family in her daughter's work, *Frankenstein*. In this paper I will argue how Mary Shelley creates specific themes and characters in *Frankenstein* in order to respond literarily to the feminist works of her mother, Mary Wollstonecraft. First I aim to highlight what current critics are saying about Wollstonecraft. Specifically, what issues, tensions, and themes are critics pulling from *Vindications on the Rights of Women*, *Vindications on the Wrongs of Women: Maria*, and *Thoughts on the Education of Daughters*. After drawing from scholars who offer their commentary on Wollstonecraft's desire for social, political, and gender reform, I will begin my own argument on the relationship in writing between Shelley and Wollstonecraft, specifically how Shelley's *Frankenstein* responds to Wollstonecraft's feminist theory.

34. Paper Presentation - English & Modern Languages

Puritanism Alive and Well In the 21st Century: A Study of Fall River: An Authentic Narrative

Geneva Waynick and Brandi Kellett

Catherine Read Williams's *Fall River: An Authentic Narrative* tells the story of Sarah Cornell, a woman who had to support herself by working during the time of the Cult of Domesticity, when women were expected to stay home, religious, and pure. When she moved to the small, religious, industrial mill town of Fall River, the people pretended to accept her when in reality they were judging her every move. She was wooed by the town's prominent Methodist minister, Ephraim K. Avery, he murdered her, and the industrialists in Fall River and the New England Conference of the Methodist Episcopal Church worked to clear Avery's name by assassinating the moral character of the female victim, Kasserman,. The act of ruining Sarah's name in order to clear Avery's is the first record of rape culture in history. Rape culture was designed to show the ways in which society blames victims of sexual assault and normalizes male sexual violence. In my paper, I will closely examine the life of Sarah Cornell and her tragic death. I will analyze the people's actions upon meeting Sarah and their comments about her after her death during the trial. I want to show that the judgmental and discriminating actions of the characters in this story are actions still done today. In reality their ideas about women and men are similar to those of churches in the 1800s. For example, young girls are taught at church purity conferences to dress

modestly and to not find themselves alone with a boy on a date for fear of impure thoughts and/or actions. Sex before marriage is taught to be so wrong that it will cause her relationship with God and with her husband to be ruined forever. I have found many blogs online and I have my best friend from my church's story to be used as evidence that some churches still enforce the cult of Domesticity today. Women are still being treated as Sarah Cornell was treated almost 200 years ago, and it is as wrong today as it was then.

35. Paper Presentation - English & Modern Languages

When Pressed We Say She's Elegant

Alycia Gilbert and Kimberly Reed

Well-loved author Jane Austen published her novel Emma only a year before her death, making it one of the final books that she completed. Despite being treasured for its vivid characters and witty narration, Emma featured a titular protagonist whom Austen described as “someone no-one but myself will much like”. Beautiful, wealthy, and scheming, Emma Woodhouse strikingly differs from the other heroines of Austen's novels in both status and behavior. In this paper, I argue that Jane Fairfax, elegant and poor, functions as a hidden Austen heroine in the novel, and that she better adheres to the criteria of an Austen archetype than Emma Woodhouse. Subverted in Emma's plot and subdued in nature, Jane Fairfax seems to have fallen prey to minimization in literary criticism as well. But I argue that Austen constructs Jane as a representation of her reader's expectations, and then demotes Jane to a minor character to emphasize the singularity of Emma Woodhouse among Jane Austen's protagonists. It is this deviation from Austen's normal work and characterization that allows Emma to form a unique perspective on Regency society, expanding Austen's range of social criticism to include a feminine and financial world distinct from the settings of her other novels. Rather than limit Emma in its ability to comment on feminist values and social class, Emma Woodhouse's station paired with Jane Fairfax's situation allows for a fuller, more collective commentary on both gender and wealth in the Regency Era.

36. Paper Presentation - Institute for Sustainable Practice (Graduate)

Applying Zero Management techniques to achieve desired Veteran behavior?

Mija Nichols and Dodd Galbreath

In this project, the focus is on the state of Veterans Affairs in Tennessee and how state government is currently supporting Veteran education and workforce development. The desired behavior is to increase the amount of Veterans aware of these services and who accept these services through increase local marketing efforts, networking, and communication with multiple entities. This project outlines steps and behaviors of Zero Management, a sustainability practice, and how they can be successfully applied in order to achieve desired end-state behavior of Veterans.

37. Paper Presentation - Institute for Sustainable Practice (Graduate)

Left Behind: A Farmer's Place Capitalism

John Plunkett and Emily Jones

History has left our farmers with an honorable, but undervalued and perhaps underappreciated past. This is despite being the backbone of society in many cultures for centuries. Today's modern corporate farms yet again cast a shadow over these same small farmers. While capitalism chases chefs, restaurateurs, retailers and many other entities in our food system, the farmer largely remains on the outside eking out a meager living. Investors shun innovation, sweat equity, long days and ultimately a great societal benefit for more idealistic investments. This has to change. Our small farmers need venture equity and venture equity needs our small farmers. Recognizing this need could open up a whole new realm of investing rivaling high tech and bring our farmers into the future.

38. Paper Presentation - Institute for Sustainable Practice (Graduate)

Reporting on Energy Utilities in Conflict Zones

David Wright Smith and Emily Stutzman-Jones

As businesses, media organizations have responsibilities that are broadly similar to those of other companies. The term “footprint” is often used to reflect their economic, environmental and social impacts. What is particular to media organizations is that they can also be considered to have a “brainprint”- the impact and influence they have on society through their content. The proposed research will explore communication of environmental news via three sources; corporate social responsibility programs, NGO watch dogs, and journalistic news reporting, especially as it relates to conflict zones. The goal is to find similarities between agencies with different, often conflicting, agendas.

39. Paper Presentation - Psychology, Counseling and Family Sciences (Graduate)

Where have I come from, and where am I going?: Conceptions of Ghanaian Children Formerly in Forced Labor

Brooke McAllister and Chris Gonzalez

Where have I come from, where am I now, and where am I going? The answers to these existential human questions help to create a person's self-concept and meaning in life. How children at a care center in Ghana, Africa who have experienced forced labor or human trafficking perceive their biological families (where they have come from), present lives (where they are now), and future opportunities (where they are going) is the focus of this phenomenological study. A phenomenology is qualitative in nature and allows researchers to receive and interpret the lived experiences of the study subjects. The 27 child subjects in this study participated in therapeutic activities that provided opportunities for the children to share their conceptions of life and family. This information was transcribed, coded, and organized into

various common themes supported by quotes from the children that provide a glimpse of these conceptions. Their beliefs and emotions about the past, present, and future provide an opportunity for future studies to explore how Ghanaian culture and the culture of the care center have affected them. This phenomenology seeks give an understanding of the lived experiences of children formerly in forced labor at a care center in Ghana.]

40. Paper Presentation - Family Science

The use of Hippotherapy and Therapeutic Riding to improve physical and emotional wellness in special needs children.

Samantha Bell and John Conger

Research shows that animals can have numerous physical, physiological, and psychological benefits on humans and can aide in the process of both social and human development. Humans crave affection and companion animals are willing to meet this need and are likewise rewarded. Research also shows that animals can instantly gain attention and produce feelings of joy in most humans. One emerging field in the health profession that has grown out of this research is animal assisted therapy. Professionals can use animals to build rapport, provide physical comfort, and aide in the overall results of therapeutic activities. This presentation will discuss the history of animal assisted therapy, define and differentiate animal assisted activities from animal assisted therapy, look at the benefits of animal-assisted therapy, and specifically look at SaddleUP!, a successful animal-assisted therapy program in Nashville. It will look into the three main programs SaddleUP! uses: therapeutic riding, Equine Assisted Learning and Hippotherapy. Concerns and safety issues for professionals, clients, and animals will also be addressed. Animal-assisted therapy is not the best practice for every client but for clients that enjoy it the benefits are worthwhile.

41. Paper Presentation - History Politics and Philosophy

Survey of Student Reactions to Mayoral Candidates' Statements

Daniel Godfrey and Marc Schwerdt

This survey was done to see how statements by the 7 candidates in the upcoming Mayoral Election resonated with voters, specifically regarding transportation policies. A poll was done after each candidate was interviewed for 2 minutes on varying topics (mainly focused around City Planning), and a final overall feedback question was asked after the forum ended. My expectation was, considering the city's growth and high daily traffic congestion, the candidate who polled best in transportation would also be one of the highest rated overall (the importance of this was shown through transportation polling as the most and second most important issue). Despite polling as a low-importance issue, Walkability is intrinsically linked to public transportation, as it becomes much more important when the transport network is built up. Because of this, it will be interesting to also compare the results in that. While top polling candidate, Jeremy Kane, tied for second in the transportation question, the question did not

correlate highly with the overall results. The transportation question, though one of the major issues, did not predict who would do well in the overall forum. However, it can be said that a candidate had to do well on this question to do well in the overall forum. Kane did, though, had the best results regarding Walkability, and it's therefore likely people relate his promised improvement in that area of his overall package to that of Public Transportation issues, which helped him poll as successfully as he did.

42. Paper Presentation - History Politics and Philosophy

Why Disney Ruined My Childhood

Kenleigh Howard and Richard Goode

To relate events of the past, historians face the continual choice of how they will present their research. Historians have to filter and compress their findings, ultimately deciding their personal view on the usefulness of certain histories. In return, the way that scholars write about history reflects upon their own culture and experiences that have shaped them. In my paper, I will present a historiographical study of Pocahontas that follows the topic's conversation up until the present day. By studying the conversation, I am able to track, in part, the differing ideologies that follow certain interpretations and how those color the lenses through which scholars present their work. My presentation will include the analysis of interviews that I conducted with the scholars whose research I integrate my paper. Through this examination, I hope to contest the popular perception of Pocahontas my audience accepts and present the reality grounded in the analysis of these historiographical works. I will work to show that common perceptions of historical events are not always the most accurate accounts, and furthermore emphasize the importance of recognizing skewed portrayals.

43. Paper Presentation - Institute for Sustainable Practice

Nitrate and Phosphate Pollution Influencing a Nuisance Algal Bloom at Garrison Creek

Eric Hillstrom and Emily Stutzman-Jones

Algal blooms in streams can cause environmental concerns in the form of toxins, deoxygenated water and other detrimental effects on wildlife and humans. Two of the most common pollutants that can contribute to algal blooms are nitrates and phosphates. Point source Pollution is some sort of contaminant that is entering the stream or waterway via a specific source. Garrison Creek is a stream in Murfreesboro Tennessee that suffers from frequent algal blooms. The objective of this research is to measure nitrate and phosphate levels and determine if point source or non-point source pollution is influencing the algal bloom in Garrison Creek. If the pollution is from a point source, this data will allow us to determine the location of that source. Our methods were to collect water samples from Garrison Creek from December 2013 to August 2014, measuring the nitrate and phosphate concentrations from six different sample sites to pinpoint the point source of the pollutants. The nitrates and phosphate concentrations were compared to EPA maximum contaminant levels and the phosphates greatly exceeded those levels at all six sites. The NOAA database of storm events was used to determine that the phosphate concentrations

did not correlate with storm-water runoff, and phosphate concentrations were elevated during dry months, indicating point source pollution. This study concludes that the pollutants are from point sources and that the concentrations of phosphates in the stream are abnormal and may contribute strongly to the algal bloom.

44. Paper Presentation - Institute for Sustainable Practice

The International Bluegrass Music Association and Sustainability: The Birth of a Green Initiative in a Blue Community

Andy Rigney and Emily Stutzman-Jones

Sustainability has been changing the music festival industry from the top-down for at least the past decade; however, with the recently formed partnership of IBMA and Joulebug, festival sustainability practice has taken a step down a new road. Joulebug is a competitive, objective-based app that engages users to practice sustainability in their daily lives, and IBMA recruited them to rally IBMA festival attendees around sustainable behavior change. A competition was put in order before IBMA's annual festival. Joulebug collected data on IBMA's World of Bluegrass user savings, and then these figures were compared to previously projected savings estimations. User savings exceeded the expectations that users would be on track with original projected savings estimations of \$200. Other than a low participation rate, the results have proved promising enough to continue the partnership between the two organizations.

45. Paper Presentation - Kinesiology

Evidence of Intuition

Lauren Ford and Ruth Henry

The purpose of this study is to provide physiological evidence of intuition, signifying that the body is physiologically reacting to something the human consciousness is not able to perceive. The objective in this study is to replicate a previous experiment published in the Journal of Alternative and Complementary Medicine that the body can respond to an "emotionally arousing" or disturbing stimulus in the seconds before it occurs. Our hypothesis was that when the body senses an arousing image coming, the heart rate variability drops, putting the heart into a more stable state. Twenty male participants were chosen to be in this study where they were shown 45 images, which had all been previously rated as either calm (30 images) or emotionally arousing or disturbing (15 images). Their heart rate variability numbers were recorded during the six seconds prior to the image being shown. The results of this study show that the difference in heart rate variability between calm images and arousing images was nonsignificant ($t=1.56$; $p=0.134$). The mean heart rate variability for the 15 arousing images was 84.85 ± 20.8 ; the mean heart rate variability for the 30 calm images was 90.7 ± 18.3 . The results of this study do not prove that the body can subconsciously sense what is coming, though the data may support a trend in this direction.

46. Paper Presentation - Kinesiology

Intuitive Eating in Male and Female Athletes

Morgan Bucher, Kaitlyn Llewellyn and Ruth Henry

The purpose of this research is to determine whether or not there is a significant difference between the prevalence of intuitive eating in male and female athletes. Intuitive eating is characterized by honoring hunger, respecting fullness, enjoying the pleasure of eating, and making food choices without experiencing guilt or an ethical dilemma. Participants were volunteers from various Lipscomb University athletic teams. We surveyed 15 males and 15 females using the 27-question Likert-type Intuitive Eating Scale to determine their intuitive eating score. The scale includes four specific areas: intrinsic eating, extrinsic eating, anti-dieting, and self-care. The results indicate that in the subscales of intrinsic eating ($p=.116$) and self-care ($p=.577$), the genders were statistically equal. The males scored significantly higher in extrinsic eating (males $M = 21.53 \pm 3.2$, females $M = 18.93 \pm 1.9$; $p=.012$), which indicates that men are less influenced by external factors. Men also scored higher in anti-dieting (males $M = 54.13 \pm 8.3$, females $M = 44.6 \pm 9.6$; $p=.007$), suggesting that males more often disagree with dieting practices and behaviors. We concluded that there do seem to be some gender differences in intuitive eating variables.

47. Paper Presentation - Pharmaceutical Sciences and Chemistry and Biochemistry

Developing a rapid and robust analytical method for green tea catechins

Lincoln Shade, Jessica Murray and, Matthew Vergne

Tea is the most widely consumed beverage in the world after water. Teas, especially green teas, contain a high concentration of a group of flavanols called catechins, which are widely lauded for their health benefits, including antioxidant and anti-coronary artery disease effects. The extent of the benefits reaped from catechins is highly dependent on their free concentration levels in the blood- these benefits are greatly reduced when bound to blood albumin or proteins found in other foods, namely dairy or soy. Current protein-binding studies have been primarily in vivo, where catechin and protein concentrations cannot be easily controlled and sample sizes are often small. We plan to use Rapid-Equilibrium Dialysis to analyze catechin protein binding in vitro, where concentrations are more easily controlled and samples sizes increased. In order to rapidly analyze large numbers of samples, current catechin analytical techniques must be improved. Currently, the most widely used analytical techniques for catechins implement High Performance Liquid Chromatography with UV-vis, fluorescence, or electrophoretic detectors. These techniques involve tedious sample preparation and long run times (twenty minutes up to an hour) for each sample. We developed a rapid and robust analytical method using LCMS-MS/MS, with which sample preparations are simple and run times short (three minutes per sample). We also standardized the method with appropriate internal standards. This method allows both a comparative study for past analyses and a structural framework for future catechin protein-binding studies.

48. Paper Presentation – Engineering

Harlaxton Civil Engineering Project

Daniel Jordan, Michaela Kirk, and Chris Gwaltney

The Lipscomb University Senior Design Team conducted a completed geophysical investigation analysis for the proposed repair and stabilization of the retaining wall in the current condition at Harlaxton College, Grantham, Lincolnshire. United Kingdom.

49. Paper Presentation – SALT

Service and Learning: English Tutoring Handbook

Allie Sockwell and Christin Shatzer

This presentation features my work and compilation of resources to create an English Language Learners (ELL) Handbook for the current Teaching English Learners Volunteer Program at Lipscomb University. I started the process of tutoring a facilities worker last semester, a seemingly daunting task for a college student. Through trial and error, I learned strategies such as slowing down my speech and using hand motions while pointing to the page as I explained concepts. As I talked with fellow tutors in the program, I learned I was not the only one who felt inadequate on properly handling ELL tutoring. This handbook has been organized into seven sections specifically designed to help the Lipscomb student tutor. The key content areas focus on common questions and answers from tutors in the past, helpful strategies, and examples on how to begin and work through each tutoring session, even in the midst of obstacles. This resource is developed with the idea that I can help future tutors feel more prepared, raise cultural awareness, and give encouragement as they teach, as well as to create more beneficial sessions. Ultimately the Lipscomb English-language tutoring program strives to provide students with the opportunity to guide others in a study of English through workbook activities and one-on-one communication. By providing student tutors with language teaching tools, the end result will hopefully include a more enriching and engaging learning experience. This presentation features my research over tutoring second language learners and successful approaches, providing examples and education for future tutors.

50. Poster Presentation - Pharmaceutical Sciences (Graduate)

Synthesis of a 2-Methyl Meperidine Analog

Emily Holder and Susan Mercer

Opioids are the primary drug class used for chronic pain, which provide analgesic and euphoric effects. Unfortunately, they also produce clinical side effects including central tolerance, dependence, respiratory depression, and constipation. Most opioids are substrates for P-glycoprotein (Pgp), an efflux transporter at the blood brain barrier that removes foreign substances from the brain. Meperidine is an exception to this classification because it lacks Pgp activity. However, meperidine is readily N-demethylated by CYP3A4 forming a toxic

metabolite, normeperidine. We hypothesize that introducing steric hindrance to the piperidine ring of meperidine at the 2- and 6-positions will prevent CYP3A4 access to the nitrogen eliminating the formation of normeperidine while maintaining opioid activity and non-Pgp activity. We have previously synthesized the 2,6-dimethyl and 2,2,6,6-tetramethyl analogs; both were tested for mu-opioid receptor binding and were devoid of opioid binding. Efforts are now focused on synthesizing the least sterically hindered 2-methyl analog. Herein, we focus on the synthesis of the 2-methyl meperidine analog. Beginning with 2-methylpiperidin-4-one, a Grignard reaction will introduce the phenyl and hydroxyl group at the 4-position. An alcohol to nitrile conversion will then be performed using InBr₃ and TMSCN, followed by methylation of the nitrogen. Finally, a nitrile to ester conversion using H₂SO₄ and EtOH introduces the ester at the 4-position resulting in the final 2-methyl meperidine analog. The ideal opioid would retain opioid activity, lack Pgp activity, and not undergo N-demethylation by CYP3A4.

51. Poster Presentation - Pharmaceutical Sciences (Graduate)

Fluorescence-Based Oligonucleotide DNA Cleavage System for Topoisomerase II

Malissa Sansom and Joe Deweese

Topoisomerase II is an effective anticancer drug target that resolves topological strains in the DNA that result from routine processes. The DNA cleavage and ligation mechanism of topoisomerase II has been the subject of much study. One useful system involves radiolabeled short (~50) oligonucleotide substrates that are cleaved by the enzyme and resolved on a sequencing gel. We are modifying this approach using a fluorescent label. Thus far, we have designed and employed fluorescently labeled substrates that will allow us to simultaneously track DNA cleavage on both strands of the double helix. Our results indicate that the full-length substrates and cleavage products can be resolved and quantified. We have also examined the limits of quantification and the ability of topoisomerase II to bind to the substrate. Further work will refine this system and examine topoisomerase II-mediated DNA cleavage in the presence of potential anticancer agents.

52. Poster Presentation - Pharmaceutical Sciences (Graduate)

Role of Cytochrome P450 3A5 in Lapatinib Metabolism and Bioactivation

Joanna K. Weiler and Klarissa D. Hardy

Lapatinib is a breast cancer drug that is known to cause liver toxicity in some patients; however, the mechanisms of the toxicity are unknown. This drug is primarily metabolized in the liver by cytochrome P450 (CYP) enzymes, primarily CYP3A4 and CYP3A5. CYP3A5 is polymorphic and expressed at varying levels depending on a patient's genotype. Individuals with a CYP3A5*1 allele express relatively high functioning levels of CYP3A5, while the CYP3A5*3 allele shows little to no functioning CYP3A5 enzyme in patients. Our hypothesis is that CYP3A5 expression contributes to significantly more production of reactive, potentially toxic metabolites of lapatinib. Metabolic incubations were performed using recombinant enzymes, pooled human liver microsomes, as well as individual genotyped CYP3A5 *1/*1, *1/*3, and

*3/*3 microsomes with defined enzyme expression. Glutathione was used to trap reactive metabolites, and metabolites were analyzed by LC/MS/MS. Substrate depletion studies indicated that CYP3A4 metabolized lapatinib more rapidly than CYP3A5 at early time points, but CYP3A4 metabolic rate markedly declined later. In metabolite formation assays, CYP3A4 contributed more efficiently than CYP3A5 to all major routes, but CYP3A5 was selective for O-debenzylation of lapatinib. CYP3A5 was more efficient at forming reactive metabolite-glutathione adducts. In genotyped microsomes, CYP3A5 expressers (*1) showed greater glutathione adduct formation than non-expressers (*3/*3). Further, glutathione adduct levels were significantly correlated with CYP3A5 specific content, but not CYP3A4 content. These data suggest that CYP3A4 and CYP3A5 play different roles in intrinsic clearance and generation of specific metabolites of lapatinib, and CYP3A5 expression contributes to greater reactive metabolite formation in vitro.

53. Poster Presentation - Pharmaceutical Sciences (Graduate)

Metabolism and Bioactivation of Sunitinib *In Vitro*

David Bourgeois and Klarissa Hardy

Sunitinib is an oral anti-cancer agent that works by inhibiting tyrosine kinase receptors involved in cancer cell growth and survival. However, severe hepatotoxicity may limit its use in certain patients. The mechanisms that cause the hepatotoxicity are currently unknown. The purpose of this study was to characterize the metabolism of sunitinib in vitro and determine if the metabolites formed are potential sources of drug toxicity. Metabolic incubations were performed using human liver microsomal preparations or recombinant enzymes. Drug metabolites were identified by LC-MS/MS analysis. Glutathione (GSH) trapping studies were carried out in human liver microsomes to assess the formation of reactive metabolites. The primary sunitinib metabolites were N-desethyl-sunitinib, hydroxy-sunitinib, defluorinated sunitinib, and glucuronide conjugates. UDP-glucuronosyltransferase (UGT) 1A9 were identified as the major enzymes involved in glucuronidation of sunitinib. Moreover, GSH conjugates of sunitinib were detected by LC-MS/MS, and the structure was consistent with a reactive quinoneimine intermediate. The conjugates were formed in an NADPH-dependent manner, suggesting cytochrome P450 (CYP)-mediated bioactivation. CYP1A2 was the major enzyme to generate the reactive metabolite-GSH conjugates. These findings provide direct evidence for the formation of reactive, potentially toxic metabolites from sunitinib and suggest that CYP1A may be involved in sunitinib bioactivation in vivo. Collectively, these data offer new insights into the potential role of drug metabolism in sunitinib-induced hepatotoxicity.

54. Poster Presentation - Pharmaceutical Sciences (Graduate)

Women in Science: Benefits of Student Research in the Pharmaceutical Sciences

Rebecca N. Clark and Susan L. Mercer

The current enrollment of the Lipscomb University College of Pharmacy for the 2014-2015 academic year is 55% female. The goal of this study is to investigate the benefits of student

research in pharmaceutical sciences from the perspective of women in science. Two female pharmaceutical sciences faculty members and their female research students participated. Student experience is cross sectional; including one undergraduate student, two Professional Year 1 students, one Professional Year 2 student, and one Professional Year 3 student. All authors (students and faculty) were asked to respond to the following three questions: (1) How has your laboratory experience enhanced learning? (2) How has your laboratory experience contributed to career exploration? (3) In what ways has mentoring impacted your learning and career goals? Student and faculty responses will be presented along with a short description of their current research. The intent of this presentation is to demonstrate the impact of performing research in the pharmaceutical sciences and its correlation to student learning, career exploration and mentoring relationships.

55. Poster Presentation - Pharmaceutical Sciences (Graduate)

Current Investigation of Etoposide Structure Activity Relationships

James Pokorny and Susan Mercer

Etoposide is an anticancer agent that targets human topoisomerase II, resulting in inhibition of DNA religation. The structure of etoposide has been modified in order to improve its pharmacokinetic profile such as side ring modifications, 4'-substituents, and modification or replacement of the sugar group. In this study, research manuscripts within the previous 5 years (2009-2014) have been reviewed and assembled to summarize key features of this drug. This structure activity information can be used to guide research on future modifications of etoposide in attempts to improve its utility and understand its mechanism of action against topoisomerase II.

56. Poster Presentation - Biology and Nutrition (Graduate)

Yogurt Supplementation for Lactation

Laura Schmutzer, Autumn Marshall and Amanda D. Williams

Breast milk is known to be the perfect food for most babies. It naturally contains all a baby needs to thrive. Human milk has essential nutrients, of course, but the role of prebiotics and innate live bacteria are only beginning to be fully understood. The goal of this research is to raise awareness of this little understood area of breastfeeding, in order to inform and inspire parents and caregivers. Endogenous bacteria train baby's immune systems. Infants depend on microorganisms for proper immune system development. Breast milk is an excellent source for the infant from the mother of endogenous and probiotic bacteria. In breast milk, there is a huge network of life. This study will determine whether or not potential probiotic bacteria in breast milk is delivered from mothers who consume the same yogurt as opposed to the mothers who do not eat yogurt. The null hypothesis is that there is no relationship between consuming yogurt and of the transferring of those same beneficial bacterial strands from mother to baby via breast milk. The alternative hypothesis is that consuming yogurt while breastfeeding will enhance mother's milk with the same strains of live active cultures.

57. Poster Presentation - Institute for Sustainable Practice (Graduate)

Smart Lighting = Smart Money for Lipscomb University

Kelsey Davis, John Plunkett and Emily Stutzman Jones

There is an opportunity to save energy and recapture campus cost savings from additional green lighting investment while furthering Lipscomb's sustainable brand. The Burton Health Sciences building at Lipscomb University is using 100 percent electricity 100 percent of the time when it is in use. By installing and utilizing the green ballast sunlight harvesting technology, up to 70 percent of energy can be saved. There is a rising demand in the world for green, environmentally friendly, and sustainable initiatives. Lipscomb University has made a reputation for as a sustainable leader and has already taken the initiative to implement several green missions on campus. This particular initiative would not only further help Lipscomb become a sustainability leader, but also save money and energy.

58. Poster Presentation - Chemistry and Biochemistry

New methods for acetamidomalonate condensation using a microwave reactor

Sara Brady and Kent Clinger

Most malonic ester syntheses and similar enolate nucleophilic reactions require stronger bases than are compatible with aqueous solutions. Recently, microwave assisted reactions have been described which use carbonate as the base, a number of which have been investigated as a route to the synthesis of diethyl acetamidobenzylmalonate. Most of those reactions had smaller yields and were not deemed adequate for multi-step synthesis. However, recent reports have determined that polyethylene glycol 400 (PEG 400) is an adequate phase transfer catalyst in malonic ester synthesis. In this study we reacted benzyl chloride and diethyl acetamidomalonate using potassium carbonate as the base in PEG 400, as well as using the same ratios of the first three reactants with dry acetone as the base. These two reactions were induced by heating in a microwave reactor for 4 minutes at 350 watts. The resulting diethyl acetamido-benzylmalonate was produced in yields of 79% PEG base and 63% acetone base after simple isolation procedures.

59. Poster Presentation - Chemistry and Biochemistry

Fluorescence of the Imines and Amines of Pyridoxal 5'-Phosphate with Amino Acids

Margaret Veers, Kevin Lavender, Anecie Benatrachina and Kent Clinger

A number of Schiff bases have been formed from pyridoxal 5'-phosphate (PLP) and amino acids. These imines have also been reduced with sodium borohydride to form a series of secondary amines. The absorbance and fluorescence spectra of these compounds have been recorded in several aqueous solutions of varying pH. The imine absorbs at 355 nm with an additional peak at 220 nm attributed to excess PLP in solution. The absorption of the reduced amines shifts down to 295 nm. The imine and amine show an emission around 335 nm upon

excitation around 292 nm and 280 nm respectively. However, the amine shows an additional fluorescence emission at 395nm upon excitation at 295 nm.

60. Poster Presentation - Biology

Determining the Potential Role of NF- κ B in Immunoproteasome Subunit Expression Induced by TNF- α

Douglas Landers and Amanda D. Williams

Immunoproteasomes are a special form of proteasomes present during a viral infection that differ from constitutive proteasomes by the subunits LMP2, LMP7 and MECL1. These subunits alter the cleavage properties of the proteasome to make it more efficient at cleaving viral antigens for loading onto the MHCI molecule for antigen presentation. We hypothesized that TNF- α , a cytokine known to play a role in the immune response during viral infections, is activating transcription factor NF- κ B, which is leading to activation of immunoproteasomes. In order to test our hypothesis, JAWSII murine dendritic cells were treated with TNF- α , and then we measured levels of both immunoproteasome subunits and NF- κ B by Western Blot. We found that NF- κ B expression levels peaked well after the expression levels of the immunoproteasome subunits started to decrease. This suggests that NF- κ B is not the transcription factor responsible for the activation of the immunoproteasome and another cellular pathway is responsible for their activation.

61. Poster Presentation - Biology

Immunoproteasome subunit Activation by IFN- γ

Mark Mitchell and Amanda D. Williams

Immunoproteasomes are a specific type of proteasome that are up-regulated in immune responses. These proteasomes aid in epitope presentation via MHCI complexes, important in the immune system defense against viruses. Previous research has indicated that cytokines such as TNF- α and IFN- γ can up-regulate immunoproteasome expression. We hypothesized that a maximal concentration of cytokines would reach a potential threshold of immunoproteasome expression. To test our hypothesis, we treated murine JAWSII dendritic cells with a concentration gradient of IFN- γ and measured immunoproteasome subunit expression using western blot. We found that immunoproteasome expression peaks at a concentration of 2000ng of IFN- γ . This will be useful in future studies of immunoproteasome expression by allowing researchers to know the specific amount of stimulating factor necessary to achieve maximal expression.

62. Poster Presentation - Biology

Investigating the Role of Glutamate in Endothelial Cell Activation

Beshoy Fahmy and Beth Conway

Angiogenesis is essential for tumor progression and growth. Glutamate Carboxypeptidase II (GCPII) is a transmembrane protease that cleaves carboxy-terminal glutamates from small peptides. Its upregulation is observed in almost all tumor-associated vasculature. It has also been shown to positively regulate angiogenesis in a laminin-dependent manner. We previously demonstrated that GCPII cleaves small peptides from laminin to activate angiogenesis. Recently, we hypothesized that the tripeptide LQE, which is found throughout multiple isoforms of human laminin, may be cleaved by GCPII to produce the dipeptide LQ and free glutamate (E). Our lab subsequently demonstrated that E activates primary endothelial cells, suggesting that it may be important in angiogenesis. The focus of this study was to test the angiogenic activity of free glutamate (E), a product of the GCPII hydrolysis reaction. To do so, we ran in vitro adhesion assays in the presence of GCPII inhibitors to investigate the ability of free glutamate to rescue endothelial cell adhesion. Here, we report that free glutamate (E) failed to rescue adhesion in the presence of the GCPII inhibitor. Thus, we concluded that glutamate is not an activator of angiogenesis.

63. Poster Presentation - Biology

Epigenetic change by CpG island methylation in the CD10 promotor region contributes to the invasive nature of breast cancer cells.

Caitlin Couch and Beth Conway

CD10 is a membrane-bound protease that degrades a number of substrates, including endothelin-1, an activator of cancer invasion and metastasis. In some studies, CD10 expression is positively correlated with a good breast cancer prognosis, but other studies show the opposite trend. Therefore, we wish to study the functional contribution of CD10 to breast cancer. Previous studies in our lab have shown that mRNA and protein levels of CD10 are shown to be higher in normal breast cells compared to invasive breast cancer cells, and overexpression of CD10 in invasive cancer cells lead to a decrease in invasion. However, the mechanism that down regulates CD10 in invasive breast cancer cells is unknown. Earlier studies have shown that treatment of invasive cells with DNA demethylation drug AZA lead to a decrease in invasion. We hypothesize that CpG island methylation in the CD10 promotor region inhibits gene transcription causing breast cancer cells to be more invasive. We divided the promotor region into three segments to compare the sequence after bisulfite conversion of breast cancer cell lines MDA-MB-231 and MCF-7 to healthy human breast cells HMEC. Results of the region closest to the promotor help us conclude whether or not epigenetic change to the CD10 promotor can contribute to the invasive nature of breast cancer cells.

64. Poster Presentation - Biology

Expression pattern of Tdp2 and Top2b in *Danio rerio*

Kevin Loftis and Bonny Millimaki

Topoisomerase (TOPO) enzymes create double stranded breaks in the DNA to relieve torsional strain that is created during transcription and DNA replication. Occasionally, TOPO enzymes remain bound to the DNA and require another enzyme, Tyrosyl DNA phosphodiesterase (TDP), to remove them, allowing completion of the DNA repair process. In addition to their role in DNA repair, both TOPO and TDP have isoforms that have been implicated in the development of the nervous system. One isoform of TOPO, TOPII?, is necessary for neural development; however, the role that it plays in the developmental process of neurons remains unclear. TDP2 has been implicated in regulating normal transcriptional levels of neural specific genes within the murine brain. Because both TOPII and TDP2 play a role in neural development, and TOPII interacts with TDP2 in DNA repair, as described above, we want to know if these proteins function together in neural development. Our lab is utilizing zebrafish as a model system to examine the role of TopII and Tdp2, the zebrafish isoforms of TOPII and TDP2, in neural development. We have developed an anti-sense RNA probe for both TopII and Tdp2 and examined the location of their expression via in situ hybridization. We have observed localized expression of Tdp2 in the brain consistent with its role in neural development. Exploring which tissues express these genes can further our understanding of their functions.

65. Poster Presentation - Biology

Determining the Genetic Population Structure of Feral Pigs in Tennessee Using Microsatellites

Anthony Tata, Allison Griffin, John Lewis and Mary Sledge

Feral pigs (*Sus scrofa*) are an invasive species that cause agricultural damage, spread diseases, and decimate habitats, especially wetlands. Feral pigs are a problem in Tennessee given their broad distribution and rapid and prolific reproduction. They tend to aggregate around the Tennessee River, the Cumberland Plateau, and in the Appalachian region of east Tennessee. The distribution of feral pigs increased drastically in the past fifteen years due to natural range expansion and illegal translocations. The study's objective is to gain information about the genetic structure of Tennessee's current feral pig population using microsatellite markers in order to determine distinct genetic clusters. DNA extractions were performed on blood samples received from the Tennessee Wildlife Resources Agency (TWRA), and then the DNA was amplified through Polymerase Chain Reactions (PCR) using fluorescently labeled markers from the U.S. Pig Genome Coordination Program. 96 samples were amplified using primers S0026 and S0005. Fragments were separated on the ABI 3730 capillary array sequencer, and analyzed with ABI's Genemapper software. Allele sizes were rounded to integers and bins determined using TANDEM. S0026 amplified 13 alleles from 107 to 139 bp, and S0005 amplified 10 alleles from 216 to 234 bp. Three distinct population clusters were determined using STRUCTURE 2.3.4, as analyzed by the Evanno Method. Understanding population structure will help determine interbreeding patterns and illegal translocation, which is useful to TWRA biologists,

veterinary officials, and landowners determining the most appropriate population management methods to control the spread of disease, population growth, and agricultural damage.

66. Poster Presentation - Biology

Investigating Endothelial Cell Activation and Angiogenesis by Glutamate Carboxypeptidase II Derived Peptides

Spencer Richardson and Beth Conway

Angiogenesis is an important step in tumor progression and growth. Glutamate Carboxypeptidase II (GCPII), a transmembrane protease that cleaves carboxy-terminal glutamates from small peptides, is highly expressed in tumor-associated vasculature and positively regulates angiogenesis in a laminin-dependent manner. We previously demonstrated that GCPII cleaves small peptides from laminin to activate angiogenesis. Recently, we hypothesized that the tripeptide LQE, which is found throughout multiple isoforms of human laminin, may be cleaved by GCPII to produce the dipeptide LQ and free glutamate (E). Our lab subsequently demonstrated that both LQ and E activate primary endothelial cells, suggesting they may be important in angiogenesis. The focus of this study was to test these fragments for angiogenic stimulation *in vivo* using Matrigel implant assays, followed by analysis of hemoglobin content by Drabkin's assays and quantitation of microvessel density by analysis of hematoxylin and eosin staining of Matrigel implant sections. Here, we report that LQ significantly activates angiogenesis *in vivo*. Free glutamate (E) failed to significantly induce angiogenesis. In summary, we found LQ to be a GCPII-specific activator of endothelial cell activation and angiogenesis.

67. Poster Presentation - Computer Science

Pulse: Enabling Socially Responsible Software Exemplars

Brianna Choy, Josh Fulton, Destiny Mhishi, Samuel Owoyemi, Logan Tidwell and Steve Nordstrom

Students at Lipscomb University's College of Computing and Technology are creating mobile software ecosystems and infrastructure to more easily explore ideas surrounding the construction of socially responsible software. Software ecosystems are difficult to create and manage; therefore, innovation in these areas often stagnates due to the learning curves and high thresholds of knowledge required to get applications to production. Integrating ideas from the fields of software engineering, computer science, data science, and game development, the Pulse projects aims to catalyze the creation of modern software ecosystems. Technologically, Pulse is an application, interaction, and communications framework that supports the petition, collection and aggregation of data artifacts from diverse, occasionally connected clients. Pulse has constituent components implemented using Xcode (iOS), Corona SDK, C++, PHP, MySQL, JSON, and Apache. The Pulse project uses modern software development methodologies augmented to support freelance, remote, and in-person work by volunteer students, faculty and industry partners. Software engineering tools used by the Pulse team include GitLab for source code

management and LeanKit for team management and coordination. Organizationally, Pulse serves as the common framework for innovation and technological discourse among our students and faculty. These efforts are student-driven and extracurricular in nature, utilizing modern software design methodologies tailored to allow students of a variety of skillsets and availabilities to more easily participate in a meaningful capacity.

68. Poster Presentation - Pharmaceutical Sciences

Impact of Thiosemicarbazones on the Activity of Topoisomerase II α

Tom Wilson, Bradley McGill, Edward Lisic and Joe Deweese

Type II DNA topoisomerases resolve topological knots and tangles in DNA that result from routine cellular processes and are effective targets for anticancer therapeutics. To this end, thiosemicarbazones have been identified as having the ability to kill cancer cells from several cell lines. At least one published study suggests this activity can be attributed to action against topoisomerase II. Therefore, we set out to analyze the activity of a series of thiosemicarbazone compounds against topoisomerase II. Two thiosemicarbazones, acetylpyrazine-methylthiosemicarbazone (APZ-MTSC) and acetylpyridine-ethylthiosemicarbazone (APY-ETSC), and their copper(II) complexes [Cu(APZ-MTSC)Cl] and [Cu(APY-ETSC)Cl] were examined. The [Cu(APZ-MTSC)Cl] and [Cu(APY-ETSC)Cl] displayed the highest ability to poison DNA cleavage and inhibit DNA relaxation. Further, these compounds also displayed characteristics consistent with covalent poisons: stabilization of enzyme dimers, inactivation of DNA cleavage, and sensitivity to a reducing agent (dithiothreitol). Further studies are underway to clarify the mechanism of these compounds against topoisomerase II.

69. Poster Presentation - Pharmaceutical Sciences

Impact of Etoposide Quinone on DNA Binding and Ligation by Topoisomerase II α

McKenzie King, Susan Mercer and Joe Deweese

Etoposide is a widely-used anticancer agent that inhibits the ability of topoisomerase II to ligate DNA. While the parent compound is effective, etoposide is metabolized to several active metabolites including the highly potent etoposide quinone. Etoposide quinone can poison DNA cleavage similar to etoposide but also acts as a covalent poison. To clarify the mechanism of the quinone, we performed a series of assays to study DNA binding and ligation by topoisomerase II α in the presence of etoposide quinone. Based upon our results, ligation is impacted to a similar extent with the quinone as with etoposide. Further, there were differences in the degree of ligation based upon the method employed to induce ligation. DNA binding studies demonstrate that etoposide quinone may impair DNA binding by topoisomerase II. Further studies will employ methods under development to examine other parameters of DNA binding and drug:enzyme:DNA complex stability.

70. Poster Presentation - English & Modern Languages

Suicide in Society

Makaila Offutt and Stacia Watkins,

Writers from all over the world have addressed suicide in their works. On my poster presentation, I will address how the main character in Chinua Achebe's *Things Fall Apart* becomes driven to kill himself and how his community reacts to his death. Although the novel is set in the 1890s, the themes of identity and exile can be applied to today's society. Suicide is treated differently depending on the culture. I will compare the portrayal of suicide in the novel to how suicide is treated in our culture. Many people criticize suicide because they view it as sinful and a violent act against oneself. However, suicide is not just a personal or psychological problem; it is a social problem. People can reason themselves into suicide suddenly or over a long amount of time, but society begins to play a role in a person's thought process when the individual feels encouraged to repress his or her thoughts rather than discuss them. After someone kills him or herself, the death usually receives much attention. As a result of the stigma attached to suicide, the grief of families and friends who have lost someone to it is silenced. This shows that suicide is rejected in society just as it is in literature.

71. Poster Presentation - Institute for Sustainable Practice

How Do Farmers' Markets Affect Communities in the U.S.?

Amanda Myers and Emily Stutzman – Jones

The last twenty years has seen a marked interest in farmers markets across the U.S. In 2014, the USDA lists 8,268 farmers markets in the National Farmers Market Directory. These numbers make farmers markets significant to consumer access to the local food system; keeping food in its growing region. This study is a review of current literature to determine what affects farmers' markets have on food producers, consumers, and communities, in regards to social, economic, and cultural trends. While health benefits are commonly investigated in research on farmers markets, I will not evaluate health impacts in this project. Results will be discussed

72. Poster Presentation - Institute for Sustainable Practice

The Sustainable Livelihoods Framework and Agroforestry

Amber Fuqua and Emily Stutzman Jones

The sustainable livelihood framework is a tool used to evaluate interventions meant to improve the livelihoods of people and communities in poverty. The framework works to present the main assets that affect people's livelihoods, and the relationship between the livelihood and these assets. Taking a look at three separate case studies located in Kenya, Bangladesh, and Nepal, the framework assesses the current livelihood state of each country with the introduction of agroforestry into each community. The framework assesses the preceding conditions of each country, followed by the state of each after the introduction of agroforestry. Within each country,

varying livelihood assets will be considered, from an economic, health, educational, civil status, and agricultural standpoint. Ultimately, the framework will evaluate the assets of each country and whether or not the addition of agroforestry benefits the overall livelihoods of the citizens.

73. Poster Presentation - Institute for Sustainable Practice

Renewable Energy: Is it as efficient as Fossil Fuels?

Jacob Sheffield and Emily Stutzman-Jones

Every day, the earth's supply of fossil fuels is being depleted at an alarming rate. It is believed that the earth only has enough of these resources to last for 20 years. Heating, cooking, transportation, and the everyday use of electricity use fossil fuels. The main three fossil fuels are oil, coal, and natural gas. This study reviews literature on renewable energy sources such as wind, hydroelectric, and solar. I analyze how they compare to fossil fuels in efficiency and cost. I will be investigating the pros and cons of these renewable options both economically and environmentally. This will be a side by side comparison. Results will be discussed.

74. Poster Presentation - Institute for Sustainable Practice

Three Onsite Grey Water Treatment and Reuse Systems Compared

Jon Berry and Emily Stutzman-Jones

Future water availability is a genuine concern for many countries, especially in urban areas. In the U.S., all water used for residential or agricultural purposes is treated to meet drinking water standards. Applications such as toilet flushing, laundry, irrigation, etc. do not require such extensive and expensive treatment. One method that could immediately assist with ensuring future availability of water is onsite, grey water recycling. Grey water represents as much as 50-80% of residential water use, making it the largest potential source of water conservation for domestic residences. The amount of grey water produced in a building varies depending upon the building's activity, but treated grey water reuse in dwellings and residential buildings could potentially save 40-47% of total water consumption. There are currently no U.S. federal standards for water reuse, but many states have implemented their own requirements. Three types of onsite, grey water treatment and reuse systems will be analyzed and compared to determine which, if any, meet the most stringent, state water quality standards for unrestricted urban reuse in the U.S.

75. Poster Presentation - Institute for Sustainable Practice

Exploring the Potential of Seaweed as Sustainable Biofuels

Brooke Barnes and Emily Stutzman Jones

The world is in need of sustainable sources of energy; the price of oil is rising, and for the first time in 2010, the consumption of oil exceeded the production rate. This non-renewable resource will not be available in the future, which is driving scientists to look for alternative methods of oil production, specifically, biofuels. Biofuel is defined as a type of energy derived from renewable plant and animal materials. Macroalgae, such as seaweed, holds great potential in the realm of biofuel production. In this study, the numerous social, environmental, and economic aspects of the conversion of seaweed into biofuels will be explored.

76. Poster Presentation - Institute for Sustainable Practice

The End of the Dead Zone

Josiah Lockard and Emily Stutzman Jones

In recent years, there has been increasing concern over the growing hypoxic zone located in the Gulf of Mexico. Throughout the upper Mississippi River Basin, nonpoint source agricultural runoff containing nitrate-nitrogen (NO_3^- -N) and phosphorus (P), originating from farmland within the Midwestern United States, is transported through a series of extensive subsurface tile drainage networks and deposited directly into the Gulf of Mexico. This build up of excessive nutrients in turn, causes a large increase in Phytoplankton. As these large populations of Phytoplankton die and decompose, the oxygen content in the water is depleted to a level incapable of sustaining life. The result is often called a Dead Zone. Today, NOAA and EPA supported scientists chart the current area affected by the Dead Zone to be approximately 5,052 square miles. Creation of constructed wetlands, that mimic the original natural ecosystems of the Midwest, are made up of a series of successional systems that cycle and retain nutrients, thus reducing nutrient loading associated with polluted run off in the Mississippi River. This study examines the possibility of implementing the use of constructed wetlands as a means to effectively mitigate Mississippi River watershed pollution leading to hypoxic Dead Zones in the Gulf of Mexico.

77. Poster Presentation - Institute for Sustainable Practice

Pollution and Coral Reefs

Micalah Boddy and Emily Stutzman Jones

Coral reefs are diverse ecosystems that occur in tropical coastal environments. This poster answers the following research question: In what ways is pollution impacting coral reefs and what management strategies are currently being applied? In order to answer this research question, journal articles of studies from Okinawa, Japan, The Maldives, and the South Pacific were reviewed. Nutrient pollution is an issue that involves fertilizers that settle in the ocean, from agricultural or urban areas. Pollution from recreation is becoming more constant as coral reefs are becoming more rare leading to a large amount of non-biodegradable materials floating into the coral reefs and harming the biodiversity. Erosion is another source of pollution from runoff. The result of nutrient pollution is coral bleaching, which results when the algae is stripped from the coral. That means there is no symbiotic relationship between algae and coral. It is due to changes in temperature, pollution, overexposure to light, and extreme low tides. Pollution from recreation is killing native fish, zooflagellates, and coral species. Erosion is leading to sediment in the water, interfering with the sunlight available to the coral reefs. Results of studies indicate that if sources of pollution are eliminated, the coral can quickly restore itself. Coral reef research and monitoring centers actively participate in the conservation of coral reefs. Conservation initiatives like monitoring, sharing scientific information, rehabilitation, transplantation, and compensatory mitigation processes are already taking place. These are not enough. A long-term monitoring plan and management system is needed.

78. Poster Presentation - Institute for Sustainable Practice

The effects of grey wolf introduction in Yellowstone National Park

Graham Montgomery and Emily Stutzman-Jones

In the 1996 grey wolves were reintroduced to Yellowstone National Park after nearly seventy years of absence. Since wolves had been absent from the park for so long, it was expected that it would take some time for the area to grow accustomed to the predators. Most research and publication has been focused on populations inside the park, but the less publicized aspect is the effects wolves are having in surrounding areas. There has been research done in both areas, but most studies don't include both. This is meant to bridge that gap. It should give an overall idea of the effects that the reintroduction of wolves has had both inside and outside Yellowstone National Park.

79. Poster Presentation - Mathematics

Cost Effectiveness of Trash Bag Brands

Ethan Gregory, Lynley Ratliff and Gary Hall

We were curious which common brand of 13-gallon tall trash bags would be the most cost effective to use, assuming the consumer wanted to allocate as much weight to each bag as possible. We decided to test the standard issue drawstring trash bag from Wal-Mart, Target, Kmart, Kroger, Glad, and Hefty. There were two separate tests: the first to see when the bag would break when held from the neck and the second to see when the bag would break when held from the drawstrings. For our tests we placed weights in the bag and lifted the bag to see if it could hold the weight without tearing. The weights were gradually increased until the bag broke, and then the weight that each bag could hold without breaking was recorded. The data was then used to determine which bag was the strongest and which bag could hold the most weight per dollar.

80. Poster Presentation - Mathematics

Lipscomb Parking Garage

Andrew Bellows, Eric Gray and Gary Hall

Due to the ever-expanding Lipscomb University campus and its sprawling population of students, parking at the school has become a major concern. In theory, the solution to this problem is quite simple: add more parking spots. In reality, though, expanding Lipscomb's parking is not so straightforward. This project consists of identifying the problem of parking, finding a solution to the problem, and implementing that plan. Our plan consists of building a new parking garage located north of Fanning Hall and in front of the Nursing & Health Sciences Center. After completion of the garage, there will be an added 141 spaces. The cost of the new parking garage will amount to a total of approximately \$1,500,000.

81. Poster Presentation - Mathematics

Catcher's Release Point

Ryan Curry, Rachel Hightower and Gary Hall

We decided to look at the throw from home plate to second to catch a runner stealing second. Upon doing this, we had to take several variables into consideration. The different catcher's heights and throwing motions, we assumed a constant air resistance, and we had to base some of our information (time it takes to steal second, etc.) on statistics. What we discovered in our analysis is that the release point of different catcher's plays a vital role in the appropriate speed needed to throw out the runner. From this, we looked at two very different release points from Lipscomb catchers and calculated the velocity and acceleration from home to second. We used our calculations in order to determine the most effective release point and throwing stance for catchers to take in order to deliver the ball to second base prior to the runner.

82. Poster Presentation - Mathematics

Solar Roadways

Kenneth Wilson, Jesse Travis and Gary Hall

With advances in solar power in the past forty years, solar roadways have become less of a futuristic theory and more of a possibility. Solar roadways offer a great number of solutions that can improve our current roadway system and greatly benefit our environment. This study raises questions about the practicality of solar roadways. Practical considerations such as energy usage, energy production, and energy transfer are all considered. Our study concludes that solar roadways need more testing before they become a feasible replacement to the U.S. road system.

83. Poster Presentation - Pharmaceutical Sciences

Nashville Flea Market Community Outreach

Richard Hunnicutt, Corina Picchiottino and Bob Spencer

In this presentation, we will be exploring clinical findings related to community-based healthcare delivery, with an emphasis on educating underserved populations - specifically covering identified, high-risk areas of concern for the specific targeted subgroup at the Nashville Flea Market. Our poster will aid in compiling and visualizing the findings, areas for improvement, and general uses for the student-developed flowchart utilized during this outreach program. The results of its efficacy related to layperson implementation will be prioritized, increasing the ability of our outreach program to be self-sustaining and layperson-directed.

84. Poster Presentation - Pharmaceutical Sciences

Development of Novel T-Type Calcium Channel Inhibitors for the Treatment of Parkinson' Diseases

Mark Naguib, William Hedges and Nathan Daniels, Pharmaceutical sciences

Since its development in the late 1960s Levodopa has served as the standard treatment for patients suffering from Parkinson's Disease (PD). Unfortunately, the need for increased dosing and prolonged use of Levodopa leads to several adverse effects including dyskinesias, behavioral disturbances, and unwarranted fluctuations in response. These adverse effects have prompted an investigation of other potential targets for PD therapies. T-Type Calcium (Ca) channel inhibitors have been shown to be efficacious in Parkinsonian animal models. It has been hypothesized in recent studies that this inhibits the abnormal burst firing in basal ganglia responsible for the characteristic Parkinsonian tremors. First generation T-type Ca channel inhibitors were previously marketed antihypertensive, antiepileptic and other CNS medications, but were found to exhibit some off-target T-type inhibition. The second generation of T-type Ca channel inhibitors resulted from drug discovery programs by several large pharmaceutical companies.

However, since use of these known compounds is limited by intellectual property (IP) restrictions, a previous study was funded to develop a molecular probe to study T-Type Ca channel blockers, free of IP constraints. The compound, ML218, proved to be a selective T-type Ca channel inhibitor with good DMPK properties. In attempts to increase both potency and specificity, this study developed various tertiary amines around a [3,3,0] ring system. The lab then scaled-up the two most promising compounds were scaled-up, and isolated four different stereoisomers to be tested for potency. If sufficiently potent, the compounds will be tested in an in vitro DMPK assay, and in an in vivo rodent Parkinsonian model.

85. Poster Presentation - Chemistry and Biochemistry

Determination of pKa, log P, and Solubility of Catechins

Angela Pham and Matthew Vergne

Catechins are major components in tea. Catechins are polyphenolic compounds that are valued for their antioxidant activity. This antioxidant activity is attributed to be effective in lowering cardiovascular disease risk and cancer risk. Other health benefits attributed to tea catechins include weight management. Knowledge of physiochemical factors (pKa, log P and solubility) of catechins is important for determination of the bioavailability of catechins. We measured these physiochemical characteristics for epigallocatechin gallate (EGCG), the most common catechin in green tea; gallic acid (GA); catechin; and epicatechin. The constants were determined using a method developed with a Sirius T3 automatic titration instrument. Advantages of this method include the use of limited amounts of sample (1.5 mg) and robustness for pKa determination.

86. Poster Presentation - Psychology

Alden Line Bisection Test

Alexxa Bessey, Renae Tjelja, Alex Patterson and Dale Alden

The Line Bisection Test is a test to measure hemi-spatial neglect in patients that, in most cases, have suffered trauma to the occipital lobe or parietal lobe of the brain. While the results are effective, administering the test is extremely inefficient and follows no definitive protocol. Under Dr. Alden's supervision we have created a standard protocol version of this test that can be administered and scored on a touch screen tablet device. If the Line Bisection Test is standardized and more easily and readily available then it will be of more use in detecting hemi-spatial neglect in a clinical setting. The population from this test will come from volunteers of Lipscomb's faculty and the sample population will be derived based on a partnership with Vanderbilt's Veterans Hospital. At the Student Scholar Symposium we will showcase our findings as well as have a model of the prototype test program.

87. Poster Presentation - Institute for Sustainable Practice

An Analysis of stoves in third world Countries

Samuel B Webb and Emily Jones

Third world countries use wood burning stoves with a variety of designs in order to heat their home, and prepare their food. Typically these stoves are wood burning and the wood is harvested from surrounding areas. However, these stoves present a safety hazard and the soot leads to pollution within their home. Additionally they are inefficient and fuel must often be harvested, which cost a family time. I will evaluate various designs and advocate for the models and improvements which are safer and more efficient.

88. Poster Presentation - Biology

Species distribution and diversity of bird populations in Tennessee

Andriah Friend, Jill Weller and John Lewis

Shifts in worldwide urbanization can have immense impacts on the surrounding environment, though our understanding of these impacts may be elementary. Inclinations of diversity and density of bird species are thought to be found in relation to the scale of urbanization. This would also correlate to habitat composition and configuration. Because birds are easily observed and can give insight to the changes and stresses of their surroundings, in this study we observed and compared bird species richness and density between ecologically contrasting environments. For our research we examined bird richness, diversity, and density across two landscapes, urban and peri-urban environments, to observe if differences were found in relation to increasing urbanization. We propose that the trends found are in direct relation to the negative impact of human activity on the surrounding environment, with urbanization as the main factor. Species richness can further be defined as the number of species, without taking into account the abundance or distribution of these species (McGinley 2014). In contrast, species diversity accounts for both species richness and evenness (Merriam-Webster 2014). We chose to study both of these aspects of bird populations to get a better idea of what we were surveying. We found that in urban environments a low scale of diversity in conjunction with high density was prevalent contrasting with high diversity and low density in the peri-urban environments. Through observation and species count at two ecologically contrasting locations our results found that species richness declined while density increased with an increase of urbanization. In the peri-urban environments it was found that richness increased while density decreased for avians. Trends in population and community level responses requires more study to further identify the factors behind these trends, and local knowledge is also necessary before management policies and actions to reduce urban impact can be put into place. Long term research and observation is recommended before making these policies as well.

89. Poster Presentation - Institute for Sustainable Practice

Solar Panels Are Beneficial For Residential Homes

Steven Heide and Emily Jones

In the state of Florida also known as the Sunshine State, solar panels are starting to offer clean resource and environmental advantages over fossil-fuel-based electricity generation; however, it remains more expensive than conventional technology in most grid-connected applications. The trade-off between environmental and economic parameters represents a challenge for governments. In the Mother Earth News article dated Aug/Sep2006, Issue 217, p44-52 it discusses the benefits of a passive solar design as a source of energy, including huge savings on energy bills. The energy source is the sun, and the technology is passive solar design, the conscious manipulation of building temperature by using the sun's direct energy. A well-designed passive solar home stays cool in the summer without air conditioning, and in the winter it requires much less energy to heat. And finally, In Solar Today, An article titled "Living the Solar Dream", Sep/Oct2003, Vol. 17 Issue 5, p25-28. The article describes the author's custom solar home on Lake Norman, near Charlotte, North Carolina, a similar setup to the one that I personally had on my home here in Tennessee. In conclusion the addition of solar is beneficial not only for the savings, but the resale value will also be substantially higher. |I personally have experienced it.

90. Performances - English & Modern Languages

Signal Mountain

Craig Daugherty and Jan Harris

Signal and Lookout Mountains, circling Chattanooga, are the sources of deep roots connecting Daugherty's childhood to his writing. The mountain he spent his early years and eventually adulthood living on contains a rich history through its involvement in the Civil War, one Daugherty absorbed and retold through the perspective only a native of those mountains could recall. The sense of Nature encroaching on the reader through Daugherty's poems is reflective of the small mountain community he called home for so many years, and he captures his inquisitive life absorbed by scientific, mechanical, and historical aspects that were all uniquely available through his environment. Signal Mountain includes historical works through the eyes of Confederate and Union soldiers in Chattanooga, moves through the flora and fauna of the temperate forest he calls home, and propels the reader sideways into modernity as he recounts the mountain roads that mercilessly refined his passion for automobiles.

91. Performances - English & Modern Languages

Harbinger

Zach Johnston and Jan Harris

Zach Johnston's collection of poems, *Harbinger*, guides the reader in contemplations of ideas of patient ambitions and non-traditional concepts of Death. With language reminiscent of Alfred Tennyson, Johnston's O' powerful Mother demonstrates not only the supremacy of nature, but also depicts nature as a soft remnant of olden purity. The reader of his poems is introduced to Death as a friendly figure in Johnston's *Eudaimonia*. As Death chats with an old friend, Johnston urges the reader to reconsider the negative connotations that surround the end of life as we know it.

92. Performances - English & Modern Languages

Arboretum: A Collection of Poetry by Ellen McGuirk

Ellen McGuirk and Jan Harris

Ellen McGuirk's collection of poems, *Arboretum*, reminds readers of their origins in the dust - their connectedness to the earth - while simultaneously speaking to that inexplicable spiritual part of their creation. Using personal experiences to speak to universal themes, she invites her readers into intimate spaces: perhaps to crouch in a child's hiding place in the floor of a closet, or to watch the departure of a blazing funeral pyre across "black waters and the rippled midnight moon." Through her poetry, McGuirk creates a sacred meeting place between worlds, where there is a simultaneous awareness of our humanity and our spirituality, and invites us to "climb upwards into the darkness / amidst the shaking, shimmering leaves that flash and turn in the wind."

93. Performances - English & Modern Languages

Abstract for Carolanne Deaton's frostbitten

Carolanne Deaton and Jan Harris

Carolanne Deaton's collection of poems, *frostbitten*, explores contrasting themes of comfort and fear. Drawing inspiration from imaginative writers such as Gabriel Marquez and Zachary Schomberg, Deaton invites readers into a world decorated with symbolism and detailed imagery. This setting of "icy dens" and "white wood" creates a clean canvas for readers to explore. While all of the poems take place within this realm of ice, the lyric voice changes throughout the collection, allowing the reader to experience the various perspectives of individualized characters. These characters range from a captain to lossy white crocodiles who experience comfort and fear in different ways. Deaton's poetry encourages her readers to join this cast as

they escape to a land of white. As they journey along with the different points of view, Deaton allows her readers to reflect on their own knowledge of comfort and fear.

94. Performances - English & Modern Languages

The Window Seat

Samantha Horne, and Stacia Watkins

This creative non-fiction piece tells the story of a 22 year old recovering drug addict on his way to a fresh start. The story is told from the perspective of the author, a college student on her way home from Spring Break. Little did she know, this recovering addict would sit next to her beloved window seat from Chicago to Nashville and spill his life story to her. Though at the beginning of the flight she starts off annoyed, the more he shares with her about the details of his past, the more she realizes that all he is searching for is someone to validate his desire to find love in the world.

95. Performances - English & Modern Languages

Susie, Baby

Lindsey Brake and Stacia Watkins

Lindsey Brake's fiction short story, *Susie, Baby*, tells the tale of Susie and her struggles with her husband Leonard. Set in the 1950s rural American south, the story follows Susie's experience juggling marriage and an extramarital affair with a rich man in town named David. Once David makes clear that his intention is not to marry Susie, she must evaluate her choices and wrestles with how to continue on in her marriage. *Susie Baby*, tells of one woman's inner struggle to live a life she enjoys within her marriage vows.

96. Performances - English & Modern Languages

Of All the Parties in All the Suburbs

Melissa Pinhal and Stacia Watkins

OF ALL THE PARTIES IN ALL THE SUBURBS is a one-act play centered on two characters, Aidan and Elliot. The title of the piece alludes to the 1942 film *CASABLANCA* and the relationship between Rick and Ilsa who agree, at the beginning of their romance, not to reveal too much to each other. The play begins with Elliot already outside. Aidan comes outside some time later and asks if the seat next to Elliot is taken. Elliot lets Aidan join her, but only if they both promise to not talk about why they're outside to Elliot, saying why they're outside would be revealing too much, and she is scared of that. Instead of talking about why they are outside, the two engage in small talk. Their conversation eventually grows deeper, covering everything from

the memory span of goldfish and the song 'Wonderwall' to how we show others we care about them and why instant connections can be dangerous. Through their conversation, we learn that they share a mutual attraction, but Aidan keeps coming back to the one thing Elliot doesn't want to talk about: why they are both outside. On the surface, OF ALL THE PARTIES is a play about two people meeting and developing an attraction to each other. At its heart, it is about the way we view ourselves and how those views shape the way we connect and interact with others.

97. Performances - English & Modern Languages

3/4's Watermelon

Emma Peterson and Jan Harris

The collection $\frac{3}{4}$'s Watermelon by Emma Peterson explores themes of family, growth and childhood. Emerging from the tradition of American poets like Anne Sexton and Zachary Schomburg, Peterson uses metaphors and imagery to guide her readers through the complex and complicated lyric speaker. Peterson's speaker finds herself confessing to her audience that she can be both part-human and part-watermelon while having a mother who is also part-bumblebee. These complex family dynamics continue to unravel as the speaker encourages the reader that even the strained relationships between bumblebee mothers and their watermelon children can flower into a new kind of awareness. As the collection closes, Peterson's speaker reminds her audience that when they tell the truth about themselves, their families, and their stories, even if it means admitting they must break away from expectations of who or what they were meant to be: you'll become more yourself than you have ever been before- even if that means accepting they are watermelon.

98. Performances - English & Modern Languages

Color Poetry

Samuel Kurcab and Sonya Green

My presentation is an original poem (three pages in length). This piece, entitled "Hialeah," recounts my impressions of the unique Cuban-American culture of the Miami-Hialeah area. This is the culture of my mother and my grandmother, two of the vast number of "women without a country" who have settled into American life after fleeing Cuba in the wake of 1959. This poem explores the identity of Cuban immigrants as well as the identity of a second-generation half-Cuban. "Hialeah" is my attempt to document the personality of these displaced people and to capture the exotic ambience of Hialeah: the bright flowers and humid rainstorms and the jaunty dress of the people.

99. Performances - English & Modern Languages

Ballerina Tragedy

Whitney North and Stacia Watkins

BALLERINA TRAGEDY is a creative short story centered on an estranged mother-daughter relationship between Zhana and Claudette. In the eyes of Claudette, the so-called familial relationship she has with her mother has been stripped of all endearing sentiment, leaving her with deep feelings of loathing and resentment. To Claudette, the only thing that ties her to her mother is the birth certificate with Zhana's signature splayed across the page for documentation. This becomes an issue as her mother lays unconscious in a hospital bed due to an ultimately fatal medical disease. Claudette is left with the choice of taking her mother off life support, which her rational favors. The story continues to become controversial as a Russian organization attempts to persuade Claudette to prolong her mother's life in relevance to the impact her mother made on Russia as a star performer in the Russian Ballet. Claudette sees her kinship with her mother as one that started on paper in a hospital and as one that will end in the same way; yet, she can't help but feel torn as the sight of her mother stirs suppressed feelings. Could Claudette's decision to possibly end her mother's life save her from the Russian's who could just want her mother only for her fame, or could she be stripping the Russian culture of an important influential figure? BALLERINA TRAGEDY touches on the controversial issue of family members on life-support, while recognizing that people's lives interweave and impact each other past and present.

100. Performances - Music

In Saturday Yards

Zander Faidley, Sally Reid

In Saturday Yards is a piece that has lived many lives; it contains fragments that date back over two years. As a whole, it has seen life as a movement for a string quartet and a short piece for piano trio, but as the piece grew and matured, it started to dictate its own path. The individualized nature of each voice called for a distinct timbre so that it could be heard, but the cohesion of the piece called for similar sounds. That is how this strange ensemble comprised of a clarinet, played by Bailey Settles, cello, played by Bailey Werner, marimba, played by David Moomey, and vibraphone, played by Brenna Williams was formed. Each instrument lies on the mellow end of the sound spectrum affording the ensemble a sonic unity, but each has distinct variances that allow it to be heard as a separate entity. This also plays into the naming of the piece. In Saturday Yards charts the day in the life of a group of children. Starting with the sunrise in slow chords, the children come out and begin to play, each adding their own pieces of the game, but as often happens, trouble brews. The middle section is plagued by wildly swinging tonalities that breaks out into a fugue as each child heads home to take a break. After tempers cool, the two main culprits settle the issue and play resumes until the sunset, again heard in slow chords, ends the day.

101. Performances - Music

The Transformation of the Solo Violin Sonata: from Bach to Ysaë

Grace Kimbrough and Sally Reid

The solo violin sonata, unlike the concerto, concerto piece, or accompanied sonata, has been utilized less by composers yet is a great showcase for the violin. The first composer of a well-known solo violin sonata is J.S. Bach (1685-1750) who composed three unaccompanied sonatas (and three unaccompanied partitas) for violin solo. The next unaccompanied sonatas do not emerge until the 20th century. In July 1923 (over 200 years after the completion of Bach's solo violin sonatas), Eugne Ysaë (1858-1931) composed 6 sonatas for solo violin after being inspired by a performance of Bach's first solo violin sonata. Ysaë used Bach's unaccompanied works as a model yet utilized a modern musical twist. In his sonatas, Ysaë pays homage to Bach by including some Baroque dance movements, just as did Bach (e.g. allemande, sarabande, etc.). Yet, this modeling after Bach's sonatas does not extend to the tonality with Ysaë's sonatas featuring a very modern tonality. Also, Ysaë greatly increased the difficulty over that of Bach's sonatas. Ysaë's sonatas are fiendishly difficult and are thought by some to be among the hardest pieces in the violin repertoire. In my presentation, I hope to discuss the transformation of the solo violin sonata as well as perform portions of a Bach solo sonata and an Ysaë solo sonata which I have studied this year.

102. Performances - Music

Birth of an Arrangement

Jordan Smith, Ethan Bennett and Gary Wilson

This presentation will explain the process of creating a choral work based on existing solo vocal music. The presentation will demonstrate how the arrangement was conceived, and how it moved it from inception to completion. For this project, we chose three songs from the hit television show Nashville to combine into a choral mash up. The process of arranging and the creativity involved will be discussed. We will demonstrate the amount of creative energy, time, and effort involved in producing a new choral arrangement. The collaboration between arranger and the choir was and is an important aspect of the creative process. In addition to the presentation, we will have members of Lipscomb's Visible Voices perform the new piece.

103. Exhibits - Bible

Through the Distractions

Anna Lail and Earl Lavender

Expressing theological and spiritual thought and feeling through abstract art. Through paint and scraping, interpreting the idea of looking "Through the Distractions" to find the focus of our lives is the focus of my piece.