



# WEST LIBERTY UNIVERSITY

## **HONORS COLLEGE** RESEARCH SYMPOSIUM

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**APRIL 20, 2016** 3:30PM - 6:00PM  
R. EMMETT BOYLE CONFERENCE CENTER | ASRC

## **WELCOME FROM THE DEAN**

In this Senior Research Symposium, we recognize the dedication and creativity of our graduating Honors College seniors. These outstanding students have prepared presentations, artwork, and posters that showcase exceptional scholarly production. They have devoted themselves to the Honors Senior Theses in addition to the regular demands of the college senior year, for which they deserve high praise. Each project reflects a full semester of focused work, and represents a vibrant, collaborative and exemplary career of undergraduate study. Thank you for joining us in congratulating our students and their mentors for their diligence, their commitment to academic rigor, and their steadfast devotion to the pursuit of knowledge.

Congratulations, 2016 Honors Senior Thesis presenters!

### **DR. SHANNON HALICKI, PH.D.**

Associate Professor of French and Spanish  
Dean, *Honors College*





# HONORS COLLEGE

## RESEARCH SYMPOSIUM

### EVENT SCHEDULE

## ORAL PRESENTATIONS

### SESSION 1

**3:40** – JILLIAN LASLO, *“Role Models in Letters: A Greek Approach to Child Mentoring”*

**3:50** – MCKENSIE MASON, *“Quantum Mechanical Structure Elucidation of the Aldol Transition State”*

### SESSION 2

**4:20** – ALEXIS BRUM, *“Combinatorial Motion Planning”*

**4:30** – HANNAH MASON, *“Savannah’s Story”*

### SESSION 3

**5:10** – MEGAN BOBES, *“Management By Example: A Management Philosophy on Motivating Employees”*

**5:20** – RACHEL WURSTER, *“Her World Her Way?: An Exploration of Racial Depictions and Stereotypes in Seventeen Magazine”*

\*There will be a brief Q&A after each oral presentation session.

## POSTER PRESENTATIONS

### 3:30-4:45

MAGGIE DEHART, *“Grandma’s Book”*

ZACHARY DILLARD, *“Macrohabitat Preference and Behavioral Shifts of a Primary Burrowing Crayfish, *Cambarus monongalensis*, Across a Habitat Gradient”*

NICHOLE JACKSON, *“An Increased Risk of Multiple Sclerosis Development in Adolescent Diabetic Population”*

GABBY POZELL, *“The Conversationalist’: Creating and Evaluating a Task-Based ESL Textbook”*

### 4:45-6:00

ALLYSON ASHWORTH, *“Mixing the Americans and the Foreigners: The Importance of Guided Social Programming for Mobile International Students on American Campuses”*

LEAH CYRUS, *“Blue Light: The Next UV”*

AMANDA HOWARD, *“A Study in Ageism”*

MARK KINKER, *“An Exploration into Ancient Pottery Techniques”*

## **ABSTRACTS**

### **ALLYSON ASHWORTH**

Major: English

Faculty Advisor: Shannon Halicki

“Mixing the Americans and the Foreigners: The Importance of Guided Social Programming for Mobile International Students on American Campuses”

The number of mobile (short-term) international students studying in the United States has exponentially grown over the past decade, resulting in a mobile international population of nearly one million students across American Universities. This increase has been welcomed by school officials and economic advisors, but has resulted in many unresolved issues for the international students and campus programs that struggle to accommodate them. Importantly, it is far too common for mobile international students to interact solely with other international students during their semester or year in the United States. This is especially troubling when observed in students who are participating in government-sponsored study abroad programs, in which social integration is a primary objective. This research identifies crucial issues surrounding social integration, and their effects, and proposes solutions to those issues.

### **MEGAN BOBES**

Major: Management

Faculty Advisors: David Wright

“Management By Example: A Management Philosophy on Motivating Employees”

This project will be a working theory on, what I believe to be, a successful approach to motivating employees. I am going to read three classic management books on topics ranging from individual personality characteristics to motivation techniques, and after reading them I will compose a personal philosophy to be used as guidelines for employee motivation when I become a manager.

## **ABSTRACTS**

### **ALEXIS BRUM**

Major: Mathematics

Faculty Advisor: James Rohal

#### **“Combinatorial Motion Planning”**

The motion planning problem appears in a wide range of fields. One such field is robotics, where motion planning is used to break down a desired movement task into discrete motions. We present a solution to a specialized version of this problem. The algorithm we present decomposes the configuration space into a finite number of trapezoids, creates a connectivity graph, and uses depth-first search on the graph to find a continuous path from a given start point to a given goal point.

### **LEAH CYRUS**

Major: Biology

Faculty Advisor: Matthew Zdilla

#### **“Blue Light: The Next UV”**

Unlike the well-known ultraviolet (UV) light, blue light is in the visible spectrum from about 415 nanometers to 455 nanometers. This blue-violet light, though not as heavily researched, can induce damage as dangerous as UV light. Blue light is destructive to the organs of the back of the eye, specifically the retina. Most research is pointing blue light damage to the cause of age-related macular degeneration and uveal melanoma. The place where people encounter this blue light most often: electronics. We are exposed to blue light from our phones, laptops, tablets, TVs and light-emitting diode (LED) light bulbs. Optical companies are now creating anti-reflective coatings on corrective lenses or optical lens pigments to protect their patients from blue light. Other lifestyle modifications are also suggested to improve ocular health along with protection from blue light.

## **MAGGIE DEHART**

Major: Graphic Design

Faculty Advisor: Brian Fencil

### **“Grandma’s Book”**

The basis of this project was to create illustrations for a book that my grandmother wrote for me when I was a child. The materials used for this project included: sketch paper, drawing paraphernalia, Photoshop, Illustrator, an iPad, my grandmother’s book, and some imagination. The technique I devised starts with a simple sketch on paper. It is then scanned and transferred into Illustrator and Photoshop where the lines are re-created for layering and painting. I wanted to approach this project with the mindset of finishing a children’s book that I can keep and share for the rest of my life and maybe even have published at some point.

## **ZACHARY DILLARD**

Major: Biology

Faculty Advisor: Zachary Loughman

### **“Macrohabitat Preference and Behavioral Shifts of a Primary Burrowing Crayfish, *Cambarus monongalensis*, Across a Habitat Gradient”**

*Cambarus monongalensis* (Blue Crayfish) are primary burrowing crayfish of West Virginia and Pennsylvania. This study was conducted to determine *C. monongalensis* habitat preferences. Transects were set up around a crayfish colony and data concerning burrow entrance states and portal abundance was collected. Data was treated using geostatistical analysis to create maps revealing *C. monongalensis* preferred habitat. Geostatistical analysis also reveals *C. monongalensis* behavior varies depending upon macrohabitat. It was determined that *C. monongalensis* prefer to inhabit “seep” macrohabitats. These moist areas are found adjacent to waterways yet experience no water flow. Subjects inhabiting burrows outside seep macrohabitats employ specific burrow architecture in response to deeper water tables. Behavioral differences included the creation of open burrow entrances where water levels were highest and utilization of burrow plugs and chimneys where water tables are lowest. This behavior is believed to inhibit and decrease evaporation rates where water is relatively scarce. These revelations are previously unknown aspects of *C. monongalensis* ecology.

## **ABSTRACTS**

### **AMANDA HOWARD**

Major: Nursing

Faculty Advisor: Rose Kutlenios

#### **“A Study in Ageism”**

A Study in Ageism explores the meaning of ageism and the problem it presents in our society. In this paper, past studies on ageism are highlighted, along with the need for more research based on interactions between the older and younger generation. This project attempts to answer the question of whether ageism stems from a lack of knowledge of the process of aging, with the hypothesis that increasing interaction between generations will improve negative attitudes about aging and the older generation. Students took a survey about their attitudes and thoughts on aging. Afterwards, they spent a day at a senior living residence and took a post-survey detailing any changes in attitude or perceptions based on their time spent with older people. The results of the surveys showed that after the trip to the senior living residence, students' perceptions of the older generation improved greatly. However, there was little change in fear of the aging process. The implications of these results are further explored.

### **NICHOLE JACKSON**

Major: Biology

Faculty Advisor: Matthew Zdilla

#### **“An Increased Risk of Multiple Sclerosis Development in Adolescent Diabetic Population”**

Multiple Sclerosis (MS) is found in young adults to be the leading cause in permanent disability and is the most common demyelinating disease. MS is a disease of the central nervous system that disrupts the flow of information within the brain. There has been research conducted that proposes a link between MS and Type 1 diabetes (T1D). T1D is usually diagnosed in children and young adults. Patients with T1D do not produce insulin which is needed to move glucose in the body. A reduced response to IL-2 in T cells has been seen in both MS and T1D which may propose the link between the two. The MS and T1D gene loci are both located on the IL2RA gene region. Future research should focus on the reduced IL-2 response along with the shared IL2RA gene region to see if this is the cause for a higher risk for developing MS if the patients have already been diagnosed with T1D.

**MARK KINKER**

Major: Biology

Faculty Advisor: Lambros Tsuhlares

**“An Exploration into Ancient Pottery Techniques”**

The goal of this project is to study and implement ancient techniques for crafting, embellishing, and firing pottery. Clay is one the most if not the most ancient medium for art, and as a result, many techniques have been developed to craft it into a useful and beautiful product. One such technique, which will be utilized in this project, is the low firing technique known as Obvara. Obvara firing is similar to the more well-known Raku firing where it involves burning a carbon source onto an extremely hot piece, but where the Raku usually uses paper or leaves as carbon source, Obvara firing involves dipping the extremely hot piece into a mixture of water, flour, yeast, and sugar. The other primary focus of this project is an emulation of Mata Ortiz style pottery in terms of form and design. The pottery is named after the region in which it was found in Chihuahua Mexico. The form and decoration comes from a style used by the ancient indigenous Mogollon people who inhabited the area between 200 CE and 1400 CE.

## **ABSTRACTS**

### **JILLIAN LASLO**

Major: Biology

Faculty Advisor: Karen Kettler

#### **“Role Models in Letters: A Greek Approach to Child Mentoring”**

Boys & Girls Club of America and Big Brothers/Big Sisters are two well-known mentoring programs offering services to at-risk adolescence in the United States. Through their respective outcome reports, each of these programs has shown success in their methods and matches of child mentoring. However, reports also speculated that certain areas of child mentoring, such as school-setting mentoring, group mentoring outcomes, and willingness of volunteers to mentor, were not addressed by effectiveness analysis. Utilizing college students as a mentor has been brought to attention due to statistics showing young adults prefer participating in youth-service organizations (31.6%). Due to unanswered questions left in the effectiveness of adolescent mentoring and the willingness of college students in this type of community service, research into these specific types of programs is critical in determining future success of mentor programs. This study will focus on the program “Owl Pals with Madison Gals,” a youth-service conducted by Chi Omega at West Liberty University, and will determine the effectiveness of this program with female students of Madison Elementary School in Wheeling, WV. Through this analysis, a potential route of child mentoring utilizing the college Greek system will be proposed.

### **HANNAH MASON**

Major: English Literature, Rhetoric and Writing

Faculty Advisor: Scott Hanna

#### **Savannah’s Story**

Savannah’s Story is a novella-length creative work intended to reimagine an original children’s fantasy story written about ten years previously. Where the original story featured a twelve-year-old girl named Savannah who went on adventures with talking animals from all over the world, fought to rescue her little sister from evil kidnappers, and discovered she had magical powers, the new version reinvigorates Savannah as a more realistic twenty-something budding journalist who just moved to the city. The new story still contains traces of the old magic, though, as Savannah encounters a number of “ghosts” whose stories she reports (and changes) as well, and in particular details her encounters with a teenage girl named Sage who starts to challenge Savannah’s ideas about what’s real and what should be.

## MCKENSIE MASON

Major: Chemistry

Faculty Advisor: Jon Serra

### “Quantum Mechanical Structure Elucidation of the Aldol Transition State”

The reaction between methyl 2-methoxyphenylacetate and 4-methoxy-2-O-methoxymethylbenzaldehyde to form the aldol product methyl 3-hydroxy-2-(2"-methoxyphenyl)-3-(2'-O-methoxymethyl-4'-methoxyphenyl)propanoate is significant in the current study of the synthesis of trans-pterocarpan, a non-naturally occurring isomer of an isoflavonoid with potentially increased steroid-like properties. The aldol reaction is believed to first involve the transformation of one carbonyl compound by base into its enolate ion, and then form a six-membered ring transition state involving the two carbonyl compounds and a metal ion, which dictates the stereochemistry of the product. To investigate the energetic favorability of such a transition state, Spartan 14 molecular modeling software was used with the B3LYP theoretical model and 6-31G\* basis set, selected for their accuracy with large organic molecules and molecular charges as well as reasonable calculation time. Equilibrium geometry optimization and energy profile calculations of models of the connecting phenylacetate compound, represented both as a carbonyl and as an ylide species, with the benzaldehyde compound showed a lowest-energy conformation with the two oxygen anions in a syn orientation, consistent with the orientation necessary for the proposed transition state. Furthermore, a geometry optimization containing a six-membered ring with a lithium cation successfully converged in a boat conformation.

## **ABSTRACTS**

### **GABBY POZELL**

Major: English Rhetoric and Writing, Interdisciplinary Studies

Faculty Advisor: Shannon Halicki

“The Conversationalist’: Creating and Evaluating a Task-Based ESL Textbook”

With increasing globalization, foreign language instructors are under greater pressure to adapt to the needs of students who aim to use their language skills in “the real world.” As a result, scholarship has recognized the value of task-based language teaching (TBLT), in which lessons are organized around straightforward tasks that also have non-linguistic meaningful use (e.g. make a class schedule, make a hotel reservation, order food in a restaurant, etc.). However, because task-based ESL (English as a Second Language) textbooks are limited in scope and often exorbitantly priced, the purpose of this Honors College Research Project was to create two chapters for an original task-based ESL textbook, *The Conversationalist*. Additionally, I integrated a lesson from the book into a teaching practicum, collected student feedback, and wrote a brief qualitative report to evaluate the effectiveness of the lesson design. Based on the student feedback, I concluded that the TBLT methodology in *The Conversationalist* was successful in facilitating interaction and engaging learners.

### **RACHEL WURSTER**

Major: English Education

Faculty Advisor: Angela Rehbein

“Her World Her Way?: An Exploration of Racial Depictions and Stereotypes in Seventeen Magazine”

This paper explores the racial depictions and stereotypes presented in *Seventeen* magazine from 2012-2015. While the magazine presents itself as representing all girls, in reality the magazine emphasizes white beauty and bodies over those of minority women. Preferences for white bodies and stereotyping of minority women can be seen on the cover as well as in the beauty, fashion, and life sections of the magazine. These depictions ultimately present white women as the epitome of beauty and success at the expense of minority women and girls. Such negative portrayals are damaging to girls belonging to minority groups as it teaches them from a young age that they aren’t beautiful or accepted in the same way that their white peers are.

## **ABOUT THE WLU HONORS COLLEGE**

The WLU Honors College is a program of distinction for high-achieving students. Through a combination of academic and experiential opportunities, it promotes creativity, academic rigor, and intellectual exchange. The Honors College offers an enriched college experience in terms of both academic pursuits and social experiences. Honors students participate in study abroad, internships, and research, with opportunities for leadership roles and service. Together, Honors College students and Honors faculty form a vibrant, motivated campus community.

The Honors College curriculum is not composed of harder courses with more work, but rather requires critical and creative thinking, effective communication, and independent thought. Students achieve Honors College distinction at the end of their undergraduate career if they have completed the requisite number of Honors credit hours, through courses and seminars, and if they have completed a senior research project.

For more information, please visit our website:  
**<http://westliberty.edu/honors-college/>**

## **HONORS COLLEGE ADMINISTRATORS**

### **DR. SHANNON HALICKI, *DEAN***

Associate Professor of French and Spanish  
Offices: Main Hall 170, Elbin Library 24

### **DR. PETER STAFFEL, *DIRECTOR***

Professor of English  
Office: Elbin Library 38

### **DR. AARON HARPER, *RESEARCH COORDINATOR***

Assistant Professor of Philosophy  
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## **ACKNOWLEDGEMENTS**

- Special thanks to the Honors faculty advisors and members of the Honors Council for volunteering significant time to mentor students and to professional feedback on their research projects.
- Special thanks to Whitney Inkster, Creative Director/Webmaster, for putting together our program.

