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MARCH 2016 NEWSLETTER

INSIDE THIS ISSUE:

“Geek is Chic” fashion display shows fashion is fun for everyone

On Monday, February 29 Hardin Planetarium became a catwalk as faculty from Ogden College of Science and Engineering served as models for the first ever “Geek is Chic” fashion show. This event was sponsored by Ogden College of Science and Engineering and the College of Health and Human Services.

Students of the IDFM 432 Visual Merchandising class united with the members of the W.I.S.E. group (Women In Science and Engineering) to put on the show. Clothing was provided by Dillard’s and models were also treated to hair styling, makeup and accessories. The W.I.S.E. women had their style spruced up to chic. The show featured the women in attire for gala events (formal/semi-formal), workday (casual professional) and testimony to congress (very professional/interview level attire).



Photos by Miranda Pederson, BG Daily News

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Alumni Focus: Ann Beal Salamone

Ann Beal Salamone earned her Bachelor of Science degree in Chemistry from WKU in 1972, and followed that accomplishment with a Master of Science degree from Rice. Since that time, she has led six science-based companies from concept to commercial financial success. She is one of the principle investors of Rochal Industries wound care products.



During her career she has created polymer chemistry-based products within the flexible circuit, integrated chip, personal care, and healthcare industries. Mrs. Salamone is a past Chairman of the American Chemical Society Division of Polymer Chemistry. In addition, she is a recipient of the Crystal Slipper Award "Executive Woman of the Year." Earlier this year she was elected into the National Academy of Engineering.



Want to help make an impact in the lives of students at Ogden College?

Click the mouse above to pledge a gift.

Thank you for your generosity.

Research Highlight

Twenty-three WKU students, including four from the Gatton Academy of Mathematics and Science, presented their research at the 2016 Posters at the Capitol event February 25th in Frankfort. The event helps to increase understanding of the important role that undergraduate research plays in the education of students among those responsible for higher education funding in Kentucky. WKU President Gary Ransdell was among the selected speakers.

Ogden College students presenting research are listed below.

Student Name

- Benjamin McDonald, Jared Walden, and Bryce Aberg
- John Robert Bertram
- Morgan Duff
- Madison Heine, Taylor Billings
- Nicholas David Henderson, Zackary Ronnie Houck
- Hayden Hickey
- Jacob Hubbuch
- Eura Shin (Gatton Academy)
- Paula Stepp
- Frankie Wallace
- Alexandra Wright (Gatton Academy)

Faculty Mentor

- Sanju Gupta
- Matthew Nee and Hemali Rathnayake
- Stuart Burris
- Michael E. Smith and J. David Monroe
- Shahnaz Aly
- Amber Schroeder
- Rajalingam Dakshinamurthy
- Uta Ziegler
- Rajalingam Dakshinamurthy
- Matthew Nee
- Kevin Williams

Engineering Honor Society Hosts LEGO Competition

Students from the WKU Tau Beta Pi Engineering Honor Society worked with Engineering faculty and staff to conduct the 16th annual Kentucky Bluegrass LEGO Robotics Competition on February 27th at Drakes Creek Middle School.

Elementary and middle school teams were given the challenge of building an autonomous robot from LEGO Mindstorm kits to navigate two different surfaces based on the Star Wars movies.

A total of 65 students competed on 23 teams in either the "Engineer In Training" division for elementary school teams or the "Professional Engineers" division for middle school and more experienced teams.

Winning teams were:

Engineer In Training Division - Johnson Homeschool team of Elizabeth Johnson

Professional Engineers Division - Drakes Creek team of Trenton Dambrowitz

Photos by Kevin Schmaltz



Ogden Outreach Mission

The outreach mission for WKU's Ogden College of Science and Engineering is to provide high quality science, technology, engineering and mathematics (STEM) activities and events to regional school districts and the community which promote a greater understanding and appreciation of STEM.



Upcoming Events

3/29/16

FFA Paperwork Day

4/1/16

Kentucky Geography Bee

4/19/16

WKU Agriscience & Education Field Day

4/23/16

Kentucky Science Olympiad

WKU's vineyard offered a free workshop February 25th to those interested in growing and pruning their own grapes. The workshop allowed attendees to learn the proper techniques for the dormant pruning of grapevines as well as lessons in propagation and grafting.

Ryan Phelps, WKU viticulture technician, helped to instruct the workshop along with Patsy Wilson, extension specialist in viticulture at the University of Kentucky. Phelps said it is essential for students and growers interested in viticulture to learn the proper techniques used to prune grapevines.



Members of the Agriculture at the Equator class pose in Puyo, Ecuador. Shown at right also are Miguel Castanel, ethnobotanist and cultural interpreter along with Fabian Real, the driver for the group.



Dr. Kingery's Agriculture Education Explorations in Arizona class spent Spring Break furthering their knowledge in Agriculture Education. The above photo was taken at the Grand Canyon.



Congratulations to all Ogden Faculty Award winners!

Dr. Ajay Srivastava, Biology - Advising Award

Dr. Jarrett Johnson, Biology - Research & Creativity Award

Dr. Richard Gelderman, Physics & Astronomy - Service Award

Dr. Hope Marchionda, Mathematics - Teaching Award



During Spring Break, the WKU Habitat for Humanity chapter sent a volunteer group to Mobile, AL to assist with building homes.

The WKU group assisted the local Habitat affiliate in Alabama with framing of a new home and various other projects as part of Habitat’s Collegiate Challenge Program. Collegiate Challenge is an alternative break trip program. The program offers students an opportunity to volunteer with Habitat affiliates throughout the country during breaks in their academic year.

As a result of the program, students learn about building, issues of substandard housing, working and living within a community, cultural differences in different parts of the country, and themselves.

To date Habitat for Humanity has completed more than 600,000 homes around the world, completing the construction or repair of a home at the rate of one every 5.5 minutes.



Dr. Muhammad Jahan received the prestigious 2016 Warner Professional Practice Award from Epsilon Pi Tau (EPT). EPT is an international honor society for the technology professions. The award is given annually to someone for their exemplary achievements as a practitioner in one of the technology professions. The Warner Award is named in honor of EPT’s founder, Professor William Everett Warner. Congratulations, Dr. Jahan!



Dr. Doug Chelson accompanied four Construction Management students (Lindsay Blankenship, Aaron Gatlin, Max Legeay and Trace Verneuille) to Cincinnati, OH on February 19th to compete in an ASC Competition sponsored by the University of Cincinnati and Turner Construction. The students were able to meet with other construction companies during the competition and were able to take their knowledge from the classroom out into the real world.

Architectural Science students Nicholas David Henderson, a senior from Lewisport, and Zackary Ronnie Houck, a senior from Dayton, OH, (pictured below) presented their research entitled *Architecture Providing a Sustainable Community* at the 2016 Posters at the Captiol event in Frankfort, KY. Shahnaz Aly is the faculty mentor for their project.



MicroClub Off to an Active Start

WKU's Chapter of the American Society for Microbiology is off to a busy start for the academic year 2015-2016. The club has organized a workshop where yogurt was made while learning about the microbiological processes that create it. Members made microbial art by isolating and growing environmental bacteria samples and streaking them in patterns on agar plates. The group has toured the electron microscopy facility and attended a special lecture on "Viral Threats and Emerging Technology to Combat Them." Mammoth Cave was visited to learn about its history and the White Nose Syndrome affecting the bat population. WKU Planetarium hosted the group during a showing and discussion of the movie "Contagion." To support the chapter's activities, the group cultured and sold bioluminescent dinoflagellates.

For more information, contact the Biology Department at 270.745.3696.

Assistant Professor of Biology, Dr. Ajay Srivastava (pictured below), has received notice that his KBRIN-IDEA proposal entitled "*Functional Analysis of a Cathepsin L in Drosophila Melanogaster*" has been approved for funding contingent upon the expected full-cost renewal of the state-wide KBRIN grant from the National Institute of Health (NIH). The grant amount is expected to be \$40,000 with a start date of May 1, 2016 and end date of April 30, 2017. This high-quality research will further the scholarly environment at WKU by involving undergraduate and MS graduate students in meaningful and exciting scholarly activities. Congratulations, Dr. Srivastava!

News and Notes

Biology faculty, staff and students attended the Women Leading Conference held on February 19th. The Conference was hosted by the WKU LEAD Coalition, Ogden College of Science and Engineering, and WKU Women in Science and Engineering (WISE).

Pictured below starting from the top are: Sigrid Jacobshagen, Cheryl Davis, Cassandra Cantrell, Kerrie McDaniel, Storm Dutton, Naomi Rowland, Simran Banga, Jessica Dunnegan, Melanie Redden, and Morgan Cash.

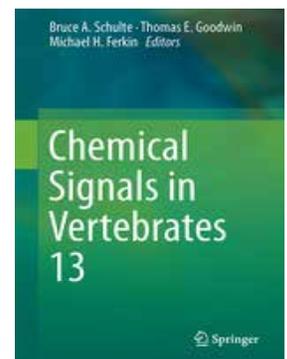


Gatton Academy student Kristen Pedersen, under the research guidance of Dr. Steve Huskey, was put forward as one of WKU's two national Goldwater nominees. She has also made it to the semi-finalist stage of the national SMART competition.

Dr. Noah Ashley (pictured below) has received funding from NSF IOS for his research working up in northern Alaska studying bird sleep and fitness costs of sleep loss. The project start date is July 1st, 2016 and the funding is \$965,000.



Dr. Bruce Schulte co-edited a volume titled *Chemical Signals in Vertebrates 13*. This volume covers a broad array of topics and contains the latest research on chemical communication relevant to vertebrates. The book also examines the impact of technology on the study and science of chemical ecology.



JUMP Students Winning National Scholarships, Learning Chemistry Abroad



Aubrey Penn, a senior joint undergraduate-masters (JUMP) student in chemistry, has been awarded a NASA-EPSCoR Undergraduate Fellowship for the year 2016 to conduct solar cell research under the supervision of Dr. Hemali Rathnayake (pictured above) and the Photovoltaic Team at NASA Glenn Research Center. This scholarship will support a semester of tuition, stipend and funding to travel to NASA Glenn Research Center.

Aubrey has extended her education by taking a two week journey to London over winter break. The CCSA London Winter study abroad group immersed her in chemical history while taking on a new perspective of chemistry.

Penn shared, "Sometimes the best place to learn is out of the classroom, and maybe even in another country." While in London she studied the British contributions to the history of chemistry, a class led

by NKU Chemistry Department Head, Dr. Keith Walters.

Konnor Jones, another Chemistry JUMP student, was recently selected as a semi-finalist for the Department of Defense SMART scholarship program. Konnor is a junior majoring in chemistry, with minors in physics and math. His research with Dr. Matthew Nee has focused on measuring the ways in which ions in solution change the molecular structures of the compounds around them, including the way solvent arranges around a solute compound. Konnor plans to complete his position at the National Lab following the completion of a doctoral degree in physical chemistry.

Dr. Moon-Soo Kim receives KBRIN award

Dr. Moon-Soo Kim was awarded a renewal of her KBRIN (Kentucky Biomedical Research Infrastruc-

ture Network and IBRE) grant in February 2016, totaling \$55,960. Dr. Kim was previously awarded a two-year KBRIN grant in February 2014, totaling \$111,907. This renewal grant allows Dr. Kim to continue her research on engineered DNA-binding proteins for diagnostic probes for pathogen detection. She is looking to recruit research students in her lab that are interested in working on this project and supported through her KBRIN grant.

WKU Chemistry Outreach

Dana Emberton-Tinius and Carnetta Skipworth hosted multiple Science Retreats for students from Hart County Middle School, Bowling Green Junior High School, Bowling Green High School, Foundation Christian Academy, and Anchored Christian School. Groups participated in synthesizing aspirin and mammalian dissection with WKU chemistry and biology students serving as their specific guides (tutors). These science retreats result in a brilliant student engagement experience for the WKU and middle/high school students. See photo below.



WKU's Engineering Manufacturing Commercialization Center Responding to Needs of Industry

The WKU Engineering Manufacturing Commercialization Center (EMCC) responds to the needs of industry and manufacturing by solving engineering problems and assisting with innovation and commercialization. The center has a wide range of capabilities and expertise including machining, PCB Design and Manufacturing, and Software Design.

Since its creation, the center has worked with 18 companies. Fifteen inventors have received assistance with product improvement and creation of prototypes. The Center has received three external grants to develop and commercialize new technologies and have assisted in one patent application and two provisional patent applications. There has been one

successful spinout company, and there are plans for the formation of up to three additional companies based on products successfully developed in the center.

The Center includes WKU staff members Dr. Stacy Wilson, Ron Rizzo, Wade Decker, and Kyle Moss.



A WKU Engineering class works on a proximity alarm/fence project for possible use in South Africa

Empowering Young Minds



Photo at left and below right: Students from the BRIDGES program tour the WKU Engineering Department. Engineering students gave the tours. At left students are using glasses to look through the cameras on a drone.



story and photos from The Lane Report's Research Kentucky 2016



Photo at left, top: EMCC supports applied research such as the creation of a cyber physical system test bed.

At left, bottom: The EMCC has a variety of software capabilities



The Whys and Hows of Weather

Students in Melinda Riedel's second grade class at Cumberland Trace Elementary got to learn about weather with a little help from Dr. Josh Durkee and meteorologist Landon Hampton.

The pair showed the students several slides of different storm clouds and tornadoes they've chased. While Hampton discussed the importance of the wind and how it changes outside temperatures, Durkee pulled out a large pressure cannon to demonstrate how wind is formed.

Durkee also created a tornado out of a paper box with a hole cut in it, covered with plastic and a camping fan attached to the top. Then he filled a cup with warm water, put it in the box and added dry ice to it. The fan caused the smoke produced from the dry ice to rotate and create a tornado.

Dr. Josh Durkee of WKU and meteorologist Landon Hampton visit second grade students at Cumberland Trace Elementary School to talk about weather. Photo by Austin Anthony, BG Daily News

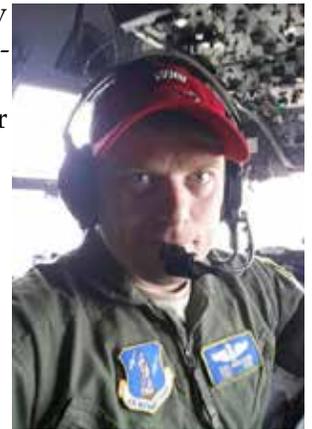


The Kentucky Mesonet launched its newest station in Butler County. The station became operational in January.

"We're excited about the Butler County station because it's the first site we've added through a partnership with local stakeholders," said WKU's Dr. Stuart Foster, state climatologist and director of the Kentucky Mesonet. "We see this as the model for stations moving forward."

The Mesonet stations collect real-time weather and climate data on temperature, precipitation, humidity, solar radiation, wind speed and direction and transmit it to the Kentucky Climate Center at WKU every five minutes, 24 hours a day, throughout the year. The weather data is available online at www.kymesonet.org.

Kentucky Guardsman and WKU senior Eric Anderson of Louisville has been awarded a scholarship to attend the Environmental Systems Research Institute's Federal Geographic Information Systems Conference in Washington, D.C.



Guardsman Eric Anderson

This is the first time that a WKU student has been awarded a scholarship for the Conference. Anderson is a C-130 Flight Engineer for the KY Air National Guard and a GIS intern with EnSafe in Bowling Green. He is attached to the 165th Air Lift Squadron with over 2,500 flight hours and has been deployed to Afghanistan, Iraq, and the Horn of Africa. In 2007, he was awarded the Air Crew of the Air Force Award.

The Director of the Icelandic Artic Cooperation Network, Embla Eir Oddsdóttir, visited WKU recently with the goal of further strengthening collaborations between WKU and the IACN. A Memorandum of Agreement was signed to promote collaborative research, joint classes, student exchanges, and faculty development with the IACN and University of Akureyri in Iceland.

"This is a long-term partnership that extends WKU's international reach while strengthening our teaching and research in highly relevant ways for both today's students and global citizens," said Dr. Leslie North, Assistant Professor. "Through exchange programs and having outstanding international scholars such as Director Oddsdóttir visit WKU and participate in our campus events, we are better able to bring to light these issues and engage our students."

Dr. North and Dr. Polk also discussed Icelandic research as part of WKU Libraries' "Far Away Places" lecture series.



Congratulations to Dr. Hope Marchionda of the Math Department for winning this year's Ogden College Faculty Award for Teaching! Let's wish her luck as she is now considered for the university level Award for Teaching!

The Kentucky Department for Environmental Protection (DEP) announced that it will be opening their scholarship program to students in computer science based programs who are interested in programming and software development. The DEP Scholarship Program offers college juniors and seniors the opportunity to compete for a scholarship that covers the cost of in-state tuition, room, board, books and fees. Recipients also are guaranteed employment for the same number of years that they receive the scholarship. For more information visit <http://dep.ky.gov/Pages/ScholarshipProgram.aspx>

Ogden College Hall Update

Construction is under way on the new science building, Ogden College Hall. The building schedule for Ogden College Hall and the renovation of Thompson Complex Center Wing and the Planetarium are as follows:

- Substantial Completion of Ogden College Hall - November 1, 2017
- Final Completion of Ogden College Hall - December 1, 2017
- Hardin Planetarium Renovation - May 15, 2016 to July 31, 2016
- Substantial Completion of TCCW Renovation - July 1, 2018
- Final Completion of TCCW Renovation - August 1, 2018



“Exploration” the Theme of 2016 Physics Olympics

The challenge was to construct a harness that would most quickly carry a precious cargo from the “discovery site” to the “staging camp.”

Teams from four area high schools ably met the challenge, sending eggs from the top of a zip line set up in a classroom at Snell Hall to the bottom in the harnesses that they made. The zip line relay was one of five events in the Physics Olympics held Saturday, February 20th by the WKU Department of Physics and Astronomy.

Four-member teams from Bowling Green, Greenwood, Warren Central and Franklin-Simpson high schools competed against one another during the annual contest, vying for \$500 in scholarship money for each team member.

The Bowling Green High School team ended the day as the overall winner.

Warren Central physics teacher Kenny Lee said the Physics Olympics provides a fun setting for students to apply their knowledge. Lee has been bringing a team to the competition each year since it began 15 years ago. He stated the events emphasize the importance of collaborating with one another toward achieving the best result.

“There is a focus on working as a unit,” Lee said. “One engineer doesn’t build a car alone.”



Article and photo by Austin Anthony of Bowling Green Daily News



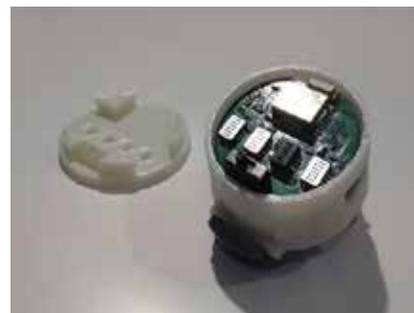
To register visit http://www.wku.edu/hardinplanetarium/camp/registration_camp.php

Leaving Footprints in Our Solar System

Spring Break Science Curiosity Investigation Camp

- April 4-8, 2016
- 8 am - noon
- Students in grades 3-6
- \$120 fee includes all project materials and daily morning snacks

Dr. Vladimir Dobrokhov and his research group from the Applied Physics Institute have developed a new technology that will provide first responders with access to rapid and reliable environmental monitoring. The device is a wearable, highly integrated sensory system for the simultaneous monitoring and wireless transmission of environmental data signals in real time. The system is set up to generate an audible and visual alarm in case of an environmental threat. The technology will prevent a variety of dangerous incidents and could save thousands of lives. The Kentucky Science and Technology Corporation provided funding for this project.

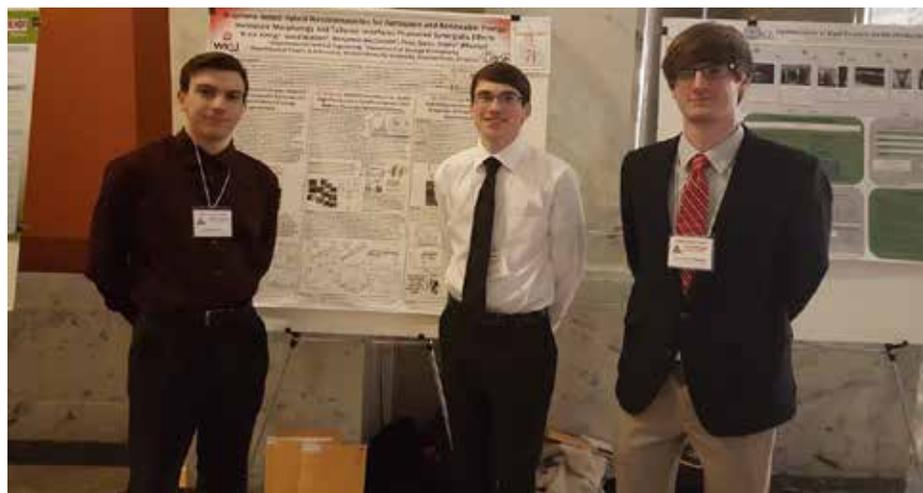


Article and photo excerpted from *The Lane Report's Research KY 2016*

International Conference on Two Dimensional Layered Materials

Dr. Sanju Gupta was invited to deliver a talk titled *"Multifunctional Graphene-based Hybrid Nanomaterials for Renewable Energy: Opportunities and Challenges"* at the International Conference on Two Dimensional Layered Materials. The conference was held in January in Hong Kong City, Hong Kong. Dr. Gupta is pictured at right with other guests at a gala dinner provided during the conference.

Dr. Ali Er's project titled "Laser assisted green synthesis of graphene quantum dot as a photodynamic antibacterial agent in plasma and its time resolved pump probe studies" has received a KBRIN award.

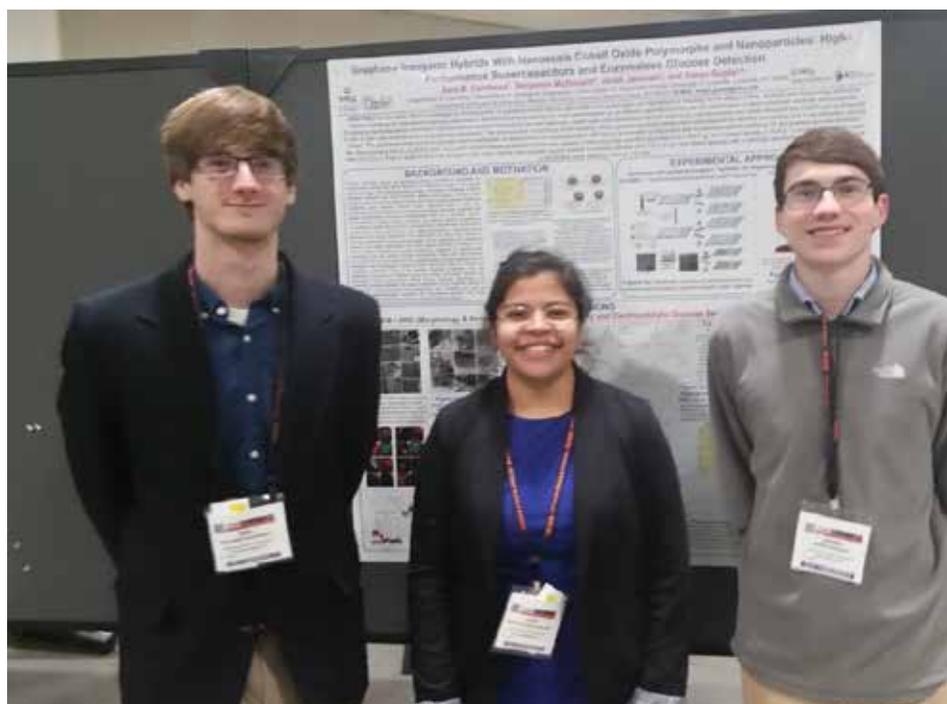


Posters at the Capitol

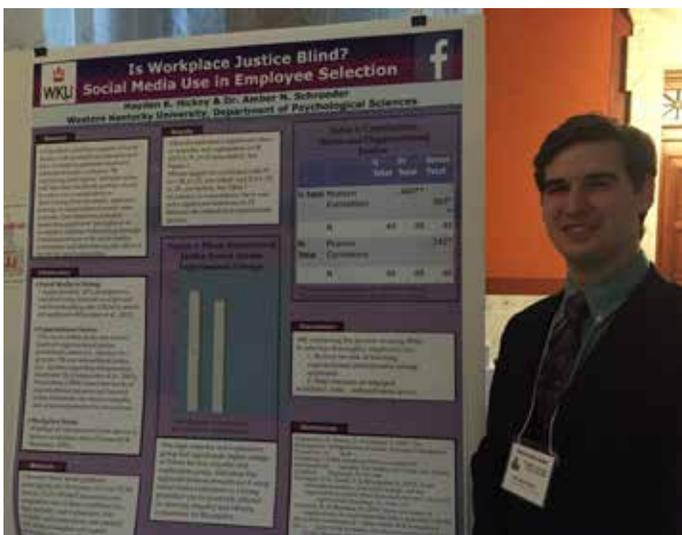
Photo at left: pictured from left to right are Bryce Aberg, Jared Walden, and Benjamin McDonald with their poster titled *"Graphene-based Hybrid Nanocomposites for Aerospace and Renewable Energy: Nanoscale Morphology and Tailored Interfaces-Promoted Synergistic Effects"*

145th Annual Meeting of the Minerals, Metals, & Materials Society

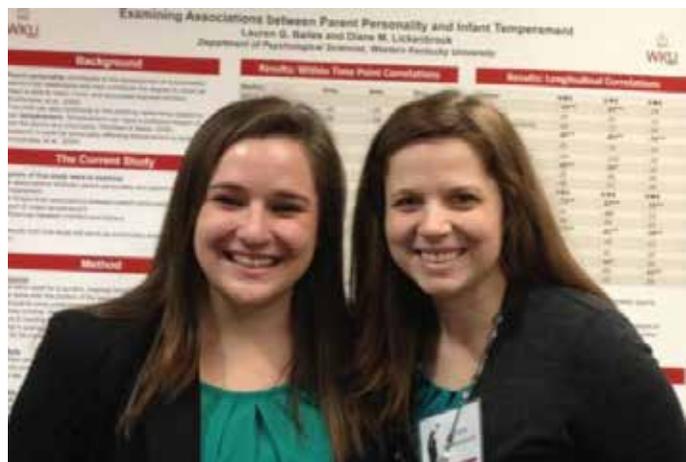
Photo at right: pictured from left to right are Benjamin McDonald, Sara Carrizosa, and Jared Walden with their poster titled *"Graphene Inorganic Hybrids with Nanoscale Cobalt Oxide Polymorphs and Nanoparticles: High Performance Supercapacitors and Enzymeless Glucose Detection"*



WKU senior Hayden Hickey is pictured below with his research poster. Hayden presented his research titled *“Is Workplace Justice Blind? Social Media Use in Employee Selection”* during the Posters At The Capitol event held on February 25th in Frankfort.



Congratulations to senior Lauren Bailes for receiving a competitive travel award from the International Congress on Infant Studies! Lauren’s research is titled *“Examining Associations between Parent Personality and Infant Temperament.”* She is pictured below with her mentor, Dr. Diane Lickenbrock.



In 2014 Dr. Jason Crandall, Professor of Exercise Science along with Dr. Matthew Shake of Psychological Sciences and Dr. Guangming Xing of Computer Science, received a Kentucky Commercialization Fund grant from Kentucky Science and Engineering Corporation to create a mobile application for the health promotion program called Bingocize.

The Bingocize app engages older adults in a fun activity that can improve physical functioning, health knowledge, and even elements of cognition. This innovative program incorporates bingo, health education, and exercise. Bingocize has been successfully implemented at facilities across western and south central Kentucky and in seven other states. Pilot testing of the mobile app is currently underway at senior centers in the area.

story excerpted from *The Lane Report’s Research Kentucky 2016*

GET PSYCHED! JOIN WKU PSYCHOLOGY CLUB!

Meeting Dates
 Monday, March 21
 Monday, April 4
 Monday, April 18
 Monday, May 2

All meetings are held in GRH 3005 and will be at 4:30 unless otherwise noted. Hope to see you there!

WKU’s Cognition Laboratory in Gary Ransdell Hall is seeking individuals ages 60 and over to participate in graduate thesis research on learning and memory. Volunteers will be compensated with a small monetary stipend for their participation and parking is available immediately adjacent to Gary Ransdell Hall. If you or anyone you know would be interested in participating, please call the Cognition Lab at 270-745-5288.

Danielle Lowry & Jessica Arnold
 Psychological Sciences Graduate Students
 Graduate Research Assistants, Cognition Laboratory