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## March/April 2016 CRL Highlights

The Center for Research and Learning (CRL) publishes *CRL Highlights* to keep the academic community and the community at large informed about research activities, opportunities and development on the IUPUI campus.

Editor:  
Carolyn Key

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### Abstract Deadline

**Abstract-submission deadline for IUPUI Research Day: Monday, March 21**

» <http://research.iupui.edu/events/researchday2016/abstracts.php>



Undergraduate students collaborating on research project

### Summer MURI and UROP Fellows applications open through Friday, April 1

Relish investigating intriguing issues? Looking for a summer research experience? Apply now for programs through the IUPUI Center for Research and Learning! You may apply for Undergraduate Research Opportunities Program (UROP) and Multidisciplinary Undergraduate Research Institute (MURI) through April 1!

» <http://crl.iupui.edu/>

**Dr. Kathryn Wilson presenting CRL RISE scholarship certificate to Melanie Scheive February 26, 2016**



Dr. Kathryn Wilson presenting CRL RISE scholarship certificate to Melanie Scheive February 26, 2016

Apply through April 1 for funding to help you earn the "R" portion of the RISE to the IUPUI Challenge initiative! This scholarship is designed for those with little to no prior research experience. Students typically identify a mentor with whom they work to write a proposal for a substantive independent research or creative project to be finished by the end of the following academic year. \$1,500 goes to the student's bursar account and \$500 to the mentor for research supplies or equipment.

➤ [http://crl.iupui.edu/awards/Awards/index\\_rise.asp](http://crl.iupui.edu/awards/Awards/index_rise.asp)



## Attention IUPUI freshmen: Scavenger hunt!

You are invited to an IUPUI Research Day scavenger hunt on Friday, April 8, at the Campus Center. Pick up an entry form at the Center for Research and Learning (CRL) booth and hunt for letters during the two poster sessions. Scientific questions will direct you to select posters where presenters will give you one or more letters. Once you have collected all letters put them into the correct order to reveal a slogan. Write the slogan onto your entry form and return it to the CRL booth. Forms with the correct answers will enter a drawing for JagTag cards worth \$100 (one per session), \$50 (one per session), and \$25 (three per session). You must be present at the time of the drawing. Note: This activity is **exclusively for IUPUI freshmen**. To learn more about the IUPUI Research Day program go to:

➤ <http://research.iupui.edu/events/researchday2016/schedule.php>



Derrick D. Brownie

## Welcome to administrative specialist Derrick Brownie

With family in several states across the country, Derrick D. Brownie was born and raised in Indianapolis, originally living downtown and currently residing on the northwest side. Growing up, Derrick enjoyed staying active, particularly jogging.

Derrick graduated from Pike High School, where, aspiring to a career in the film industry, he had a daily movie segment on the morning school news as well as a blog covering film reviews. During his junior year he began working part time at a local health-food store where he gained knowledge on holistic health and well-being. For the past three years, Derrick has been working at IU School of Medicine as a receptionist/administrative support specialist in the Office of Student Affairs, including two years serving as administrative assistant to the deans of medical student education. This past year he served as the main support for the department, assisting with all IUSOM events.

In his new capacity, Derrick supports Dr. Dominique Galli with the Multidisciplinary Undergraduate Research Institute (MURI), IUPUI Undergraduate Research Opportunities Program (UROP) and the Indiana Clinical and Translational Sciences Institute (CTSI) programs, as well as helping CRL with reception coverage and assisting with a variety of other duties.

Derrick enjoys communicating with people and putting his multitasking skills to good use. He also brings to his new position experience liaising with the campus registrar's office and supporting service learning. Eager to learn, proactive and always ready to take on new challenges, Derrick plans to attend IUPUI. An Army brat, he envisions himself traveling and learning more about different cultures. While still passionate about the film industry, Derrick lately has taken a keen interest in information technology and marketing.



2016 CRL awardees John Flood, Dr. Jeremy J. Wilson, Olivia Howald, Mohammed Al-Juboori and Jared Thomas

## CRL honors nine at February award luncheon

At a private luncheon in the University Club on Friday, February 26, the IUPUI Center for Research and Learning (CRL) honored eight students and a faculty member, Dr. Jeremy J. Wilson of the Department of Anthropology. Interim Vice Chancellor for Research Simon J. Atkinson conferred upon Jared Richard Thomas of the Purdue School of Science at IUPUI the inaugural Richard E Ward Undergraduate Research Opportunities Program Recognition Award. A Bridges to the Baccalaureate and IUPUI Diversity Scholars Research Program (DSRP) scholar, Jared is a biotechnology major with minors in computer science and philosophy and an aspiring bioethicist. He reminisced, "Dr. Ward was the one who inspired me to continue on when I was in Bridges." Having won poster presentation awards at the 2015 Indiana University Undergraduate Research Conference (IUURC) and the Annual Biomedical Research Conference for Minority Students (ABRCMS) in 2014, Jared says about his mentor, Randall J. Roper, Ph.D., of the Department of Biology, "I don't think without Dr. Roper I would have been this successful. I did a lot of stuff that I've always wanted to do." In the Roper laboratory, Jared investigates the complexity of Down syndrome, of which work he remarks, "It's like a *symphony* to me!"

Due to the transition between Dr. Ward, the previous executive director, who retired July 31, 2015, to current Interim Executive Director Dominique M. Galli, CRL omitted last year's award event; hence for 2016 the Bowling-Jones-Russo Memorial Undergraduate Research Award was presented individually to two students. Mrs. Barbra Bowling presented these two awards to Mohammed Haider Malik Al-Juboori of the Purdue School of Engineering and Technology at IUPUI and Olivia Kay Howald of the Purdue School of Science at IUPUI.

Sophomore biology major Olivia Howald, who is minoring in chemistry, wasted no time in getting involved in undergraduate research. Through the Department of Biology Freshman Work Program, she was matched with then-new faculty member Lata Balakrishnan, Ph.D., whom she helped set up her laboratory. For over a year now, Olivia has been conducting basic-science research in this lab, originally on replication protein A (RPA), collaborating with John J. Turchi, Ph.D., Professor of Medicine and the Tom and Julie Wood Family Foundation Professor of Lung Cancer Research, who created the inhibitor TDRL-551. Currently, Olivia is continuing research she began during her 2015 Undergraduate Research Opportunities Program (UROP) Summer Fellows project, looking at the acetylation of DNA polymerase beta enzyme, which is involved in base excision repair. She loves science and is exploring her options for graduate school.

A biomedical engineering major aspiring either to an M.D.-Ph.D. program or a Ph.D. in neuroscience, Mohammed Al-Juboori works in the laboratory of Steven Pressé, Ph.D., in the Department of Physics, conducting basic science on the parasitic bacterium *Bdellovibrio* and how it attacks *E. coli*. Relishing interdisciplinary research, what Mohammed appreciates most about this work is the computer enhancing the research and in turn the research informing the computational modeling. Employing a Nikon microscope, painstaking videography and Superflow beads, they were able to ascertain that the hunter bacterium finds its prey by means of chemotaxis and calcium HEPEs. During summer 2015, Mohammed studied concussion-related epilepsy under the Stark Neurosciences Research Institute's Xiaoming Jin, Ph.D. Mohammed describes working in the Jin lab with a mouse model and LASER, "As you stimulate the neurons, it's like a galaxy, it's beautiful. It's a chain reaction, like a shooting star, as the calcium and potassium go back and forth!"

Culminating the ceremony, retired Assistant Vice Chancellor for Research and Founding Executive Director of CRL Kathryn J. Wilson presented certificates to the inaugural cohort of RISE to the IUPUI Challenge Undergraduate Research Scholarship Awardees, Nhan Hieu Do (Engineering and Technology), John Scott Flood (IU School of Liberal Arts at IUPUI), Evan John Rouse (Science), Michael Roy (alumnus, Liberal Arts) and Melanie Elizabeth Scheive (Science).

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➤ <http://crl.iupui.edu/awards/index.asp>



Dr. Jeremy Wilson guiding students at a recent dig site

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## Archaeologist digs deeply to foster undergraduate researchers

Assistant Professor of Anthropology Jeremy J. Wilson, winner of the 2016 Kathryn J. Wilson Award for Outstanding Leadership and Mentoring of Undergraduate Research, began mentoring college students five years ago with a Center for Research and Learning (CRL) Multidisciplinary Undergraduate Research Institute (MURI) project at the Lawrenz Guns Club site in the central Illinois River valley. Subsequently, Dr. Wilson has mentored 64 individual undergraduate research projects, with 70% of his mentees presenting their research findings at professional conferences, including two MURI projects with eight participants.

Wilson expanded his leadership in undergraduate research through garnering one of the first two NSF Research Experiences for Undergraduates (REUs) at IUPUI, a three-year grant that emphasized underrepresented students, providing funds to bring them to the field and IUPUI. Explaining that, "REUs are like MURI on steroids," Wilson remarks, "It was a good feeling to be able to do that, especially with Native American students long underrepresented in archaeology." He continues, "We do targeted excavations complementary to geophysical research and imaging of what's beneath the ground's surface, which limits the impact to sites." Pointing out that career opportunities for such students could include becoming a tribal historic preservation officer (THPO), analogous to a state historic preservation officer (SHPO), he elaborates, "They can use this training and these technologies to *protect* archeological sites as much as to do research on them."

Wilson quotes the late Alfred L. Kroeber (1876-1960), "Anthropology is the most humanistic of the sciences and the most scientific of the humanities," commenting that his own emphasis is on the former of the two. "Training students to conduct original research at the undergraduate level can serve as a springboard to do research in graduate school or propel them into professional careers," Wilson notes. He continues, "It's in doing research you can get a technical skill set that is applicable outside academia."

Noting that most of the training that his colleagues and he provide is multidisciplinary—Wilson has collaborated with geologists, geochemists, and geographers—he argues, "To do really good research you've got to get other experts involved, not just tangentially, but to immerse them in the projects and interacting with the students on a sustained level, actually working side-by-side!"

On the 2016 IUPUI Research Day, which is Friday, April 8, in the Campus Center, Wilson's undergraduate mentees actually will be among the 10,000 attendees at the 81st annual meeting of the Society for American Archeology (SAA) in Orlando. His students will present their research posters at this single largest conference of archeologists in the world.

➤ [http://crl.iupui.edu/awards/Awards/index\\_kjw.asp](http://crl.iupui.edu/awards/Awards/index_kjw.asp)

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## Jacqueline Hill wins Joseph T. Taylor Academic Achievement Award

Jacqueline "Jaki" Hill, IUPUI Diversity Research Scholar and junior in the



Vicki Bonds presents award to Jaki Hill

Media Arts and Science program at the IU School of Informatics and Computing, is the 2016 recipient of the Dr. Joseph T. Taylor Academic Achieve Award. Diversity Scholars Research Program (DSRP) Director, Vicki Bonds, presented the award to Jacqueline at the annual Dr. Martin Luther King Jr. Celebration Dinner, sponsored by the IUPUI Black Student Union. "I was shocked, and really honored," says Jacqueline, "It was surreal. I can't believe it".

Jacqueline has conducted research with Dr. Joseph DeFazio in the area of serious games for health education for the last three years. Dr. Defazio and Jacqueline are currently working on a joint publication and Defazio describes Jacqueline as "an outstanding student, engaged in her academics". Jacqueline is active in multiple student organizations, clubs, and programs: SIGGRPAH, Anime Club, Concept Art Society, Students in Technology for Academic Research, the Norman Brown Leadership Program, and DSRP. Ms. Bonds says, "Jacqueline is remarkable student who balances her academics, research, and service to the IUPUI campus and community extremely well." Furthermore, Jacqueline received recognition for her academic accomplishments and service in media arts and science, made the School of Informatics and Computing Dean's list every semester, honored as the Housing and Residence Life 'Park Place Best Team Member', and participated a member of the 2D Art team for the augmented reality game created by the School of Informatics and Computing students during PopCon. Jacqueline is passionate about her field and plans to pursue a career as a 3D sculpture or character design artist for games and films.

» <https://soic.iupui.edu/news/award-winning-student-creating-game-for-kids-with-diabetes/>



Leslie Hulvershorn, M.D., M.Sc., working with two undergraduate researchers

## Faculty members: Post your research openings for undergraduate students on new CRL webpage

Faculty mentors, if you are looking for undergraduate students to work with you on your research project you now can post a notice on the IUPUI Center for Research and Learning (CRL) website. Please describe your project in two to three sentences, including the discipline and skill set that you seek and whether this is a paid or volunteer position. You can provide your e-mail address and/or phone number as contact information.

» <http://crl.iupui.edu/programs/URP/index.asp>



Kimberly Ho-A-Lim presenting her research findings

## Save the Date for the 2016 Indiana University Undergraduate Research Conference!

Plan to showcase your work at the 22nd annual Indiana University Undergraduate Research Conference (IUURC), which will take place at IUPUI on Friday, December 2, 2016, in the Ruth Lilly Learning Center of the Riley Outpatient Center. Students from every IU campus will present their fascinating and relevant research findings during poster sessions and talks covering all academic fields.