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## Summer Research Pays Long-Term Dividends

April 24, 2015

Illinois Wesleyan students have multiple opportunities to engage in research and creative opportunities, under the close guidance of a faculty member, thanks to the variety of summer research scholarships and fellowships that the University offers. But what happens when summer ends? For many students, long hours spent crunching numbers for data analysis and designing experiments in the laboratory come to fruition in the spring semester, when they are invited to present their work at conferences, workshops and meetings across the country.

Three of Illinois Wesleyan's 2014 summer scholars took time out to look back on their experiences and discuss how they helped forge new paths of discovery.

All three student-scholars said the importance of being able to focus solely on their projects— and the monetary stipends that enabled them to do so — made a big impact on their undergraduate experience.

“Being able to spend eight hours a day in the lab,” said biology major Lydia Rudd '16, “meant I could make so much more progress than I could during the school year.”

### Criley Research Fellow Lydia Rudd '16: From Tea to Spectroscopy

Rudd spent her summer brewing tea, but not for a job at a local coffee house. As a Criley Student Research Fellow, Rudd's brewing marathon was just one of the tasks necessary in her research on the health benefits of tea. Under the mentorship of Assistant Professor of Chemistry Manori Perera, Rudd optimized protocols needed for quantitative characterization of antioxidants in tea, and looked at various methods to study the antioxidant activity.

A more flexible summer schedule allowed Perera to take Rudd and other students to a spectrometry conference at the University of Illinois. As a member of Perera's lab group researching astronomically related molecular ions, Rudd taught herself the computer program used to study reactions under simulated space conditions.

Perera encouraged Rudd to submit an abstract for the 62<sup>nd</sup> Pacific Conference on Spectroscopy and Dynamics in Monterrey, CA. As graduate and post-doctoral students shared their findings on the latest results in the fields of chemistry, physics, and their confluence with biology, Rudd found herself among just a handful of undergraduates invited to present a poster at the conference.



Lydia Rudd '16

As a biology major, Rudd said the opportunity to become familiar with chemistry lab instrumentation helped her refine her occupational options. She had long intended to become a physician, but now Rudd is exploring a career as a perfusionist, a specialized healthcare professional who manages the physiological and metabolic needs of the patient during cardiac surgery. It's a job with a heavy emphasis on instrumentation; Rudd says her Criley research fellowship gave her the know-how and confidence to explore the field further.

“I discovered I really like the instrumentation in the lab,” said Rudd. “I may not have gotten that exposure without it [the Criley Research experience].”

### Eckley Scholar KiriLi Stauch '15: Dogs Know Their Humans

Dog owners might swear that their animals understand every human intention. Research by Eckley Scholar KiriLi Stauch '15 suggests there is real evidence to support that notion. An anthropology and psychology double major, Stauch found domestic dogs understand human intentional action at least as well as non-human primates.

In a series of studies, Stauch appeared either unable or unwilling to give a canine a treat. She found dogs spent significantly more time close to her when she was *unable* to provide the treat and



KiriLi Stauch '15

significantly more time away from her when she was *unwilling* to provide a treat. Stauch presented her findings at the Living with Animals conference in March at Eastern Kentucky University.

“Being able to focus my attention solely on research allowed me to cultivate my passion for social cognition,” said Stauch. Working closely with her faculty mentor Assistant Professor of Psychology Ellen Furlong, Stauch learned how to design, implement and run a study. It’s experience she will put to use again this summer while piloting a study on self-control in rhesus monkeys on Cayo Santiago. Located off the coast of Puerto Rico, Cayo Santiago’s population of free-ranging monkeys is a research resource supported by the National Institutes of Health and the University of Puerto Rico. Stauch’s long-term goal is to become a professor or researcher with a focus on comparative psychology.

## **Eckley Scholar Michael Kistner ’15: The State of Gridlock Politics**

If gridlock in Congress can be traced to polarization and a divided federal government, researchers might theorize the same would be true of government at the state level.

It’s not that simple, according to research conducted by political science major and Eckley Scholar Michael Kistner ’15. Using newspaper editorials to identify pressing political issues and then determining if state legislatures dealt with those issues in subsequent legislation, Kistner found that the negative effects of polarization at the national level fails to trickle down to state legislatures.

Kistner noted that previous measures of legislative productivity treated all issues as the same. He used a weighed measure to assign relative importance to issues.

“When models of legislative productivity take into account the relative importance of individual issues, they better capture the ways that varying institutional arrangements determine how responsive legislatures can be,” he said.

Kistner presented his findings at the Midwest Political Science Association’s annual conference. It’s likely one of the first of many such presentations Kistner will make, as he will enter a graduate program in political science at Princeton University this fall. “The Eckley project confirmed that this is the career path I want to follow,” said Kistner, who was guided by Professor of Political Science Tari Renner.



Michael Kistner '15