



Summer 7-16-2013

Eckley Scholars Devote Their Summers to Research

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Recommended Citation

Hill, Kim, "Eckley Scholars Devote Their Summers to Research" (2013). *News and Events*. 2149.

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Eckley Scholars Devote Their Summers to Research

July 16, 2013

BLOOMINGTON, Ill. – How do exercise and skilled reaching therapy impact recovery of stroke victims? What impact do school nurse-administered educational programs have on the health outcomes of their students? How has religiosity affected the rise of populist radical right parties in Europe?

These and other questions are being investigated by five Illinois Wesleyan University students who were selected as **Eckley Summer Scholars and Artists**.

The program was established by the late President Emeritus Robert S. Eckley, his wife Nell and the Eckley Family Foundation. The Eckley Summer Scholars and Artists Endowment — one of a growing number of summer research opportunities for students — supports summer research and creative activity, enabling four or five students to stay on campus over the summer to work under the direction of faculty mentors.

“Fellowships like those provided by the Eckleys allow students to really immerse themselves in their projects and grow intellectually in their work,” said Rebecca Roesner, chair and associate professor of chemistry and mentor to Eckley Scholar Xuewen (Maggie) Zhou '14.

Following are the Eckley Scholars, their projects and faculty mentors:

Maggie Zhou '14, Wuhan, China

In the chemical industry, catalysts are used to increase the rates and lower the temperatures of reactions, thereby saving both energy and money. Catalysts are not consumed in the reactions, prompting chemists to find ways to recycle catalysts for repeated use. Chemistry major Maggie Zhou '14 is working in Rebecca Roesner's lab this summer to design and synthesize molecular receptors to capture polyoxometalates — catalysts with large, spherical, cage-like structures — that are widely used in industrial chemistry as environmentally benign agents. Using the principles of host-guest chemistry, Zhou said she is building a receptor that fits on a polyoxometalate like earmuffs on a person's head. The “muff” parts are large, ring-shaped molecules (macrocycles) containing carbon, nitrogen and hydrogen atoms connected by a “headband” of carbon and hydrogen atoms. Zhou may utilize the results of her summer's work in the future, as she is considering a career in chemical engineering.

Maggie Zhou



Timothy Mueller '14, Oconomowoc, Wis.

Psychology major Timothy Mueller will spend part of his summer in the lab gaining insights into spontaneous and trained stroke rehabilitation, by analyzing video of the behaviors of mice. His faculty mentor is Assistant Professor of Psychology Abigail Kerr. Because of their motor map homologies and shared dexterous digit use with humans, mice have become an important animal in which to better understand the basic mechanisms involved in both spontaneous and trained stroke rehabilitation, said Mueller. To explore cellular

Timothy Mueller

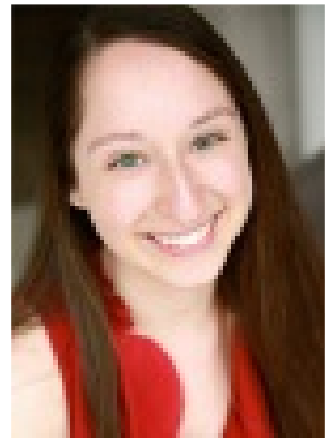


mechanisms that support stroke rehabilitation, Mueller will conduct a three-day staining procedure that labels both vascular and neuronal remodeling following stroke rehabilitation. Mueller said his Eckley research should demonstrate key mechanisms in stroke recovery that could inform the way therapy is administered following stroke. He will use his summer research as a foundation for his senior thesis in psychology, and said the Eckley Scholar program is a significant component in his plan to complete a major research project prior to entering medical school.

Sarah Menke '15, Evergreen Park, Ill.

Menke '15 is serving multiple roles to help stage Chicago's **TangleKnot** Theatre's production of Joan Holden's play *Nickel and Dimed*. Menke is assisting *Nickel's* director, Dani Snyder-Young, assistant professor of theatre arts and head of the Bachelor of Arts in Theatre Arts program at Illinois Wesleyan, in the pre-production process by researching the current working conditions of the characters described in the play, compiling research materials for the actors, and preparing lobby display materials. Menke will also assist in audience research development and will serve as assistant stage manager during performances. A theatre arts major, Menke hopes eventually to work in applied theatre — the use of drama for a greater purpose such as education, conflict resolution, community building or making social change. Menke said the Eckley fellowship will allow her the opportunity to reach out to existing groups and organizations and develop events centered around the *Nickel* performances in July and August.

Sarah Menke



Molly Guenette '14, Chicago

After job shadowing a school nurse as part of her pediatric nursing clinical experience, nursing major Molly Guenette '14 became intrigued with the impact school nurses have on their students. Under the direction of Lisabeth Searing, assistant professor of nursing, Guenette is reviewing best practices set by the National Association of School Nurses and developing a survey to help discover how nurse-run educational programs within the schools and job satisfaction affect students' use of and attitudes toward alcohol, drug and tobacco use, as well as nutritional behaviors and mental health. Although the literature review is not complete, Guenette said her preliminary research indicates nurse-to-student ratio is an important factor. "The sheer number of hours a nurse has to devote to the students is making a difference in those students' health choices," she said. Guenette will continue her work over the next academic year for her senior honors research.

Molly Guenette



Ryan Winter '14, Wheaton, Ill.

In the last few decades, populist radical right (PRR) parties have found increasing success in countries across Europe, from the anti-immigrant French National Front to the anti-Roma Jobbik Party in Hungary. Given the strong Christian message of these parties, Ryan Winter '14 was surprised to discover that their voters are actually relatively nonreligious, and that few scholars have explored the impact of religion on the PRR's success. Working under the mentorship of Associate Professor of Political Science Kathleen Montgomery, Winter's research covers 14 countries across Europe. He hopes to explore whether radical right voters are less religious than other voters and if this gap in religiosity persists when controlled for factors such as gender, age and education levels. With majors in political science and history, Winter's ultimate goal is to build research experience and to gain a better understanding of the purpose religious language fulfills for radical right-wing populist parties.

Illinois Wesleyan students have multiple ways to conduct original **research** at the undergraduate level through opportunities such as the Eckley Summer Scholars program, the John and Erma Stutzman Peace Fellows program, the Andrew W. Mellon Foundation Humanities Scholars and the Elizabeth Weir Action Research Fellowships. Many students also showcase their scholarship and creative activity in undergraduate research journals and at the annual John Wesley Powell Research Conference.

Ryan Winter



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