Kamilah Williams (second from left) won the George Herbert Ryden Prize in Social Sciences for her dissertation, "Does Information Sharing Matter? Cross-Country Evidence on Foreign Banks."

FIVE RECEIVE DISSERTATION PRIZES AT UD

Article by Karen Roberts | Photo by David Barczak, Wenbo Fan and Jessica Eastburn | May 25, 2018

From Fraktur to bioinformatics research, student scholars shine

Five graduating doctoral students received prizes at the University of Delaware’s doctoral hooding ceremony, held Friday, May 25, for their dissertations. The culmination of long hours of research, meticulous documentation and analysis, these scholarly works present students’ original findings to a field of study, and to the world.

Honorees and their awards are Alexander Ames, Wilbur Owen Sypherd Prize in Humanities; Kamilah Williams, George Herbert Ryden Prize in Social Sciences; Axel Moore, Allan P. Colburn Prize in Engineering and Mathematical Sciences; Christopher Long, Theodore Wolf Prize in Physical and Life Sciences; and Felix Francis, Interdisciplinary Research Prize. Descriptions of their work are featured below.
Theodore Wolf Prize in Physical and Life Sciences

Christopher Long won the Theodore Wolf Prize in Physical and Life Sciences for his dissertation, *Interrogating Bacterial Metabolism via the Mapping of Fluxomic Responses to Gene Knockouts and Adaptive Evolution*.

Long studied the ways that strains of E. coli bacteria adapted and recovered in laboratory tests when the researchers “knocked out” the bacteria’s ability to use enzymes critical to metabolizing sugar for energy.

Maciek Antoniewicz, Long’s adviser and Centennial Professor of Chemical and Biomolecular Engineering, said Long is “one of the world’s experts in the field” of 13C metabolic flux analysis, an important tool in metabolic engineering that enables scientists to measure the cellular variations in a microorganism’s central metabolism.

Long describes several new methods for the in-depth analysis of the normal functions that take place in a cell, and his study reveals previously unknown bottlenecks and areas of flexibility in an organism’s metabolism. His results constitute a significant new resource for the biological community, particularly in systems metabolic engineering, that can be directly applied to develop new models and strains [of bacteria] to engineer desired products.

In a letter of endorsement, Eric Furst, professor and chair of chemical and biomolecular engineering, wrote: “His description of the metabolism of [the marine bacterium] Vibrio natriegens will help engineers harness these fast-growing species for next generation bioprocessing, including pharmaceuticals such as antibiotics, nutrients, renewable fuels and other specialty bio-derived chemicals.”

Long also was praised as a “wonderful teaching assistant” who devoted time to helping undergraduate students, others in the laboratory and colleagues throughout the broader discipline.