

University of Minnesota Morris Digital Well

University of Minnesota Morris Digital Well

Campus News Archive

Campus News, Newsletters, and Events

7-1-2014

McQuarrie and Kim Explore Differential Equation Models

University Relations

Follow this and additional works at: https://digitalcommons.morris.umn.edu/urel_news

Recommended Citation

University Relations, "McQuarrie and Kim Explore Differential Equation Models" (2014). *Campus News Archive*. 53.

https://digitalcommons.morris.umn.edu/urel_news/53

This News Article is brought to you for free and open access by the Campus News, Newsletters, and Events at University of Minnesota Morris Digital Well. It has been accepted for inclusion in Campus News Archive by an authorized administrator of University of Minnesota Morris Digital Well. For more information, please contact skulann@morris.umn.edu.

Contact

Melissa Weber, Director of Communications
Phone: 320-589-6414, weberm@morris.umn.edu

Jenna Ray, Editor/Writer
Phone: 320-589-6068, jrray@morris.umn.edu

McQuarrie and Kim Explore Differential Equation Models

Summary: Undergraduate summer research fosters early professional experience.

(July 1, 2014)-Barry McQuarrie, associate professor of mathematics, is one of 11 University of Minnesota, Morris professors collaborating with students in the Howard Hughes Medical Institute (HHMI) Undergraduate Summer Research Program. McQuarrie is advising Sae Sun Kim '15, Namyangju-si, South Korea, through research on differential equation models.

A key purpose of the project is to implement a method to fit a differential equation to a data set. The models resulting from their work aim to easily extract estimates of parameters from experimental data and be used across multiple disciplines.

The team has discovered a technique for its research and now needs to apply it to data. They plan to research and build a Chua circuit to demonstrate data and test different models. Kim will use Mathematica for coding and will present findings in LaTeX, a professional typesetting software that will render his work.

“These methods and programs are good for undergraduate research opportunities because they produce professional-looking results,” says McQuarrie. “It’s good technology for students to be proficient in.”

Kim’s involvement in the project not only ties in to his own academic interests, but also builds relevant skills at an early stage of his career. This valuable opportunity brings him both experiential benefits and interdisciplinary knowledge.

“This has been a great opportunity to get paid and get research experience,” says Kim. “My time with this research lets me know what’s going on in the world of mathematics and see its relationships with my own physics interests.”

In September Kim will present his discoveries from this summer at an HHMI presentation. His work will build on McQuarrie’s HHMI-funded research from this summer and the previous one.

The Undergraduate Summer Research Program is supported in part by a grant to the University of Minnesota, Morris from the Howard Hughes Medical Institute through the Precollege and Undergraduate Science Education Program. Additional information is available at morris.umn.edu/hhmi/.

Through personal and academic discovery, the University of Minnesota, Morris provides opportunities for students to grow intellectually, engage in community, experience environmental stewardship and celebrate diversity. A renewable and sustainable educational experience, Morris prepares graduates for careers, for advanced degrees, for lifelong learning, for work world flexibility in the future, and for global citizenship. Learn more about Morris at morris.umn.edu or call 888-866-3382.