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# Illinois Wesleyan Students Selected for NSF Research Internships

July 13, 2016

BLOOMINGTON, Ill.— Illinois Wesleyan University [physics](#) students are gaining valuable research experience this summer as recipients of nationally competitive National Science Foundation Research Experiences for Undergraduates internships.

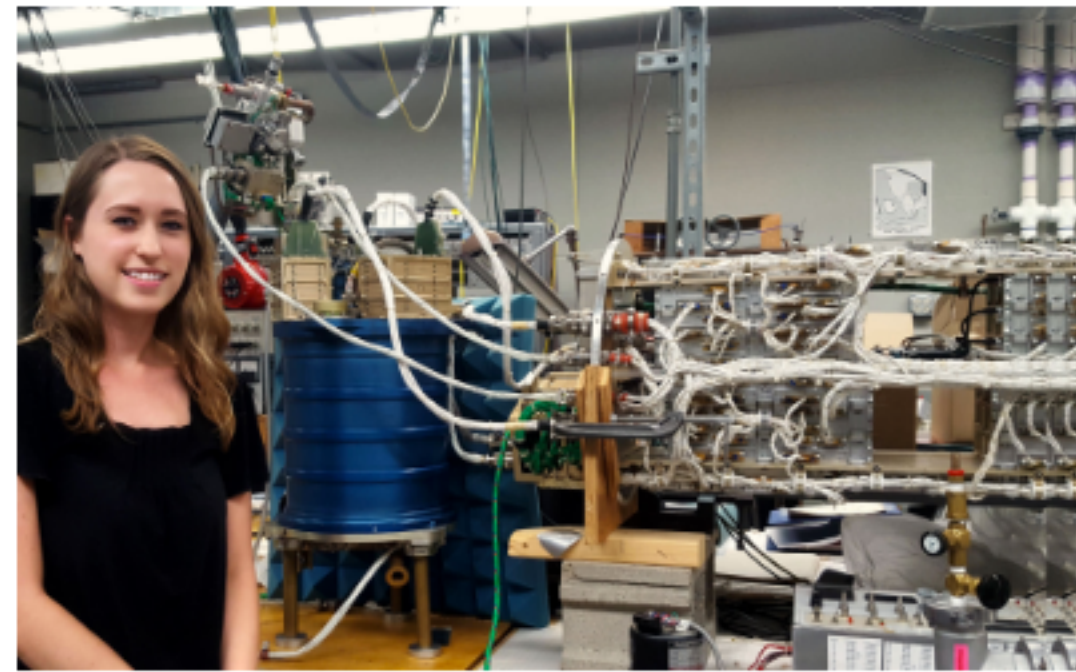
Fiona Breyer '17 is a research assistant at the University of Wisconsin-Madison, and Zhenghao (Andy) Ding '17 is working in Professor David Weitz's lab at Harvard University.

The Research Experiences for Undergraduates (REU) program involves students in meaningful ways in ongoing research programs or in research projects specifically designed for the REU program. Students are granted stipends and in many cases, assistance with housing and travel.

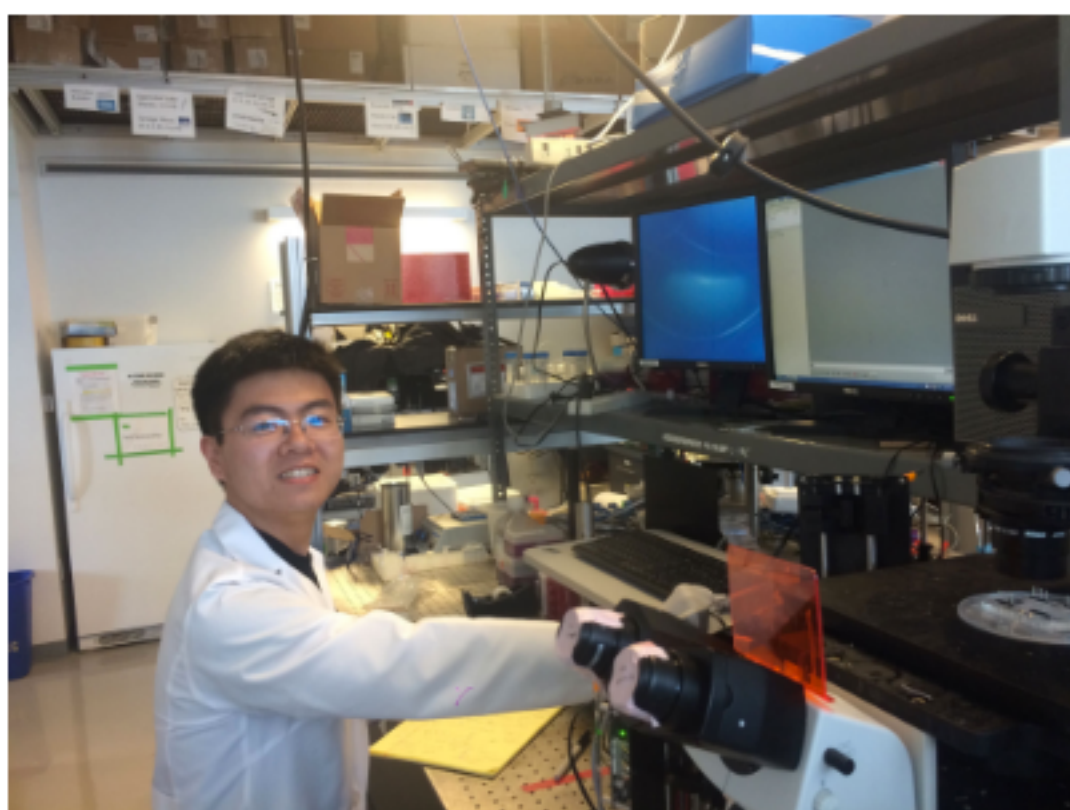
Breyer (Crystal Lake, Ill.) is working on an X-ray Quantum Calorimeter (XQC), a soft, or lower energy, X-ray spectrometer used for suborbital astrophysical observations. Breyer is working to calibrate the filters inside the XQC, the coldest man-made object to ever enter space. She said she has also successfully designed and created a working electron gun which will be used to create lower energy X-rays during ground tests of the XQC.

Breyer previously worked with Illinois Wesleyan Associate Professor of Physics [Thushara Perera](#) and his research at the intersection of physics and astronomy. "I was incredibly interested in his research and realized that physics research is something I want to continue," said Breyer. "I wasn't sure I should apply for REU programs because they are so competitive, but Dr. Perera encouraged me to apply."

In her REU position, Breyer is working in the lab of Dan McCammon, an expert in the realm of X-ray astrophysics. "This research opportunity will allow me to be a more competitive applicant when applying for jobs, and it has solidified my decision to continue doing research, potentially as a career," she said.



Fiona Breyer '17 is working on an X-ray Quantum Calorimeter during her NSF Research Experiences for Undergraduates internship.



Zhenghao (Andy) Ding '17 is working in a Harvard lab with a former colleague of Illinois Wesleyan's Gabe Spalding.

Ding has worked on microfluidics with Illinois Wesleyan's [Gabe Spalding](#). Ding said he met Harvard's Weitz, a former colleague of Spalding's, at an American Physical Society meeting, and Weitz invited Ding to join his lab group. Spalding is the B. Charles and Joyce Eichhorn Ames Professor of Physics.

"I have learned a lot of new tricks and techniques on designing, fabricating and applying microfluidic devices," said Ding, a native of Zhengzhou, a city in China's Henan province. He said he is working on single-cell immunization using microfluidic devices with a senior scientist in the Harvard group. "I did not have experiences working on biotechnology before this," said Ding. "This project has been an eye-opener for me. We are developing new techniques in this field." Results of their work will be published soon, Ding said.

Approximately two-thirds of Illinois Wesleyan students take part in some form of creative or [research activity](#) each year. Experiential learning is a hallmark of an Illinois Wesleyan education. Students can conduct research on campus or off campus through such prestigious programs as the NSF REU

program.

