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## Goldwater Scholarship Winner

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*University of Dayton*

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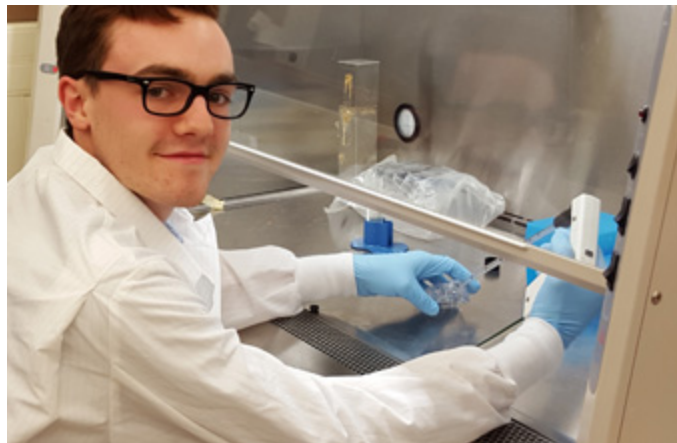
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# Goldwater Scholarship Winner

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Monday September 19, 2016

University of Dayton senior Raphael Crum has been named a 2016 Barry Goldwater Scholar, marking the second year in a row that a University student was awarded a scholarship from the federally endowed Barry Goldwater Scholarship and Excellence in Education Foundation.

Crum, a biology major from Oakwood, Ohio, received a \$7,500 award from the competitive scholarship program, created in 1986 by the U.S. Congress to honor and support outstanding students pursuing careers in the fields of mathematics, the natural sciences and engineering. He is one of 252 Goldwater Scholars selected this year from among 1,150 undergraduate students nominated by college and university faculty nationwide.

In 2015, Jonathon Sens '16, a biochemistry and biology major, was named a Goldwater Scholar.

Last year, Crum was selected as an American Physiological Society undergraduate research fellow. He was one of 24 students chosen to participate in the society's 10-week summer fellowship program. He received a \$4,000 stipend and full travel grant to present his research in April at the 2016 Experimental Biology conference in San Diego.

Crum has been working with advisor Carissa Krane, professor of biology and Schuellein Chair in the Biological Sciences, in the area of cardiovascular research.

Crum's research project examines factors and mechanisms that can result in coronary artery bypass graft failure in the human heart. He is investigating the effects of varying blood flows on the early development of graft failures. Crum is evaluating the regulation of a water

channel protein called Aquaporin 1 in the cells that line the interior of the blood vessels used in heart bypass surgery.

Through his undergraduate research experiences, Crum has developed a passion for the experimental side of science.

“Undergrad research is a big independent project, which I really like,” Crum said. “You learn a lot about yourself and what motivates you. Before I had conducted my own research I wasn’t sure if it was something I wanted to pursue as a career path, but as a result of it, it has changed my entire outlook on life and future career aspirations.”

Crum plans to pursue a doctorate of medicine and philosophy in molecular cardiology, which is a dual doctoral degree for physician-scientists. He aspires to a medical and research career, while also mentoring aspiring physicians, scientists and physician-scientists in cardiovascular medicine and science.

Named in honor of late U.S. Sen. Barry Goldwater of Arizona, the Goldwater Scholars program awards one- and two-year scholarships to cover the cost of tuition, fees, books, and room and board, up to a maximum of \$7,500 per year. Since its first award in 1989, the foundation has bestowed 7,680 scholarships worth about \$48 million. The trustees plan to award about 260 scholarships for the 2017-18 academic year.

- Cassidy Colarik '16