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Illinois Wesleyan Senior Earns Two Postgraduate Fellowships

BLOOMINGTON, Ill. — Illinois Wesleyan University senior Joseph Binder, a Decatur, Ill., native, has been awarded two fellowships for postgraduate study.

Binder was one of 1,020 college students (of 8,939 applicants) to receive the National Science Foundation Graduate Research Fellowship, which is awarded to students annually who are near the beginning of graduate study (usually college seniors or first-year graduate students) in the mathematical, physical, biological, engineering, and behavioral and social sciences.

He is one of 169 total students (of 3,200 applicants) and only 26 chemistry students to receive a three-year fellowship from the National Defense Science and Engineering Graduate Fellowship program.

Binder plans to attend graduate school to pursue a doctorate in chemistry next year, studying means to improve industrial chemistry using biological principles.

Part of the NSF fellowship application is a research proposal for investigating a field related to a student's graduate study objectives.

Binder's interest in chemical analysis led him to build on his previous polyoxometalate work with IWU chemistry professor Rebecca Roesner and he described a possible project to modify his polyoxometalate structures to catalyze a variety of reactions more effectively.

Another section of the application asked him to describe his experiences in making a "broader impact," and Binder wrote about leading chemical demonstrations at local schools with the chemistry club and helping with fourth grade science classes at Fox Creek Elementary School for teacher Amy Schumacher, the wife of Binder's IWU track and cross country coach Chris Schumacher.

Roesner has been Binder's research advisor for three years with his polyoxometalate research and chemistry professor Timothy Rettich is his current research advisor.

Joseph Binder

A 2000 graduate of **St. Teresa High School in Decatur**, Binder is majoring in chemistry and physics at Illinois Wesleyan. In February 2004 he was one of 60 college students to be recognized for excellence by the USA Today on the newspaper's annual all-USA College Academic team, earning third team honors.

In October 2003 he was one of 49 college students to be recognized for excellence by the Lincoln Academy of Illinois and, in April 2003, he was awarded one of 300 national scholarships from the Barry M. Goldwater Scholarship and Excellence in Education Foundation.

At the 2002 John Wesley Powell Research Conference at IWU, Binder won an award for his poster, "Derivatization of Keggin-Type Polyoxometalates." He is a member of the national scholastic honoraries Phi Beta Kappa, Phi Kappa Phi and Phi Eta Sigma.

He is also a member of the University's chapter of the American Chemical Society (ACS) Student Affiliates, serving as the group's vice president this year. He has served as president of the IWU Quiz Bowl team for three years and is a member of the Society of Physics Students.

He is a Presidential Scholar, has earned the 2001 CRC Press Freshman Chemistry Achievement Award and the 2002 ACS Polymer Education Committee Award for Outstanding Organic Chemistry Student.

Binder has been a three-year varsity cross country runner, serving as the team's captain in 2003, and has also participated in track for four seasons.

National Science Foundation Graduate Research Fellowship

In reviewing applicants, the NSF looks at academic record, recommendations, general and subject GRE scores, intellectual merit and broader impact. The intellectual merit criterion includes the applicant's ability to conduct scholarly research and effectively communicate ideas, while the broader impact evaluation considers the applicant's experience and potential in communicating science to a broad audience, integrating women and minorities in the scientific community, and benefiting society in general. The award includes three years of stipend and tuition support for graduate study at any institution.

National Defense Science and Engineering Graduate Fellowship

The National Defense Science and Engineering Graduate Fellowship program awards about 100 three-year fellowships each year to students early in their graduate studies in science and engineering fields related to national defense. Each Department of Defense research agency, including the Army Research Office, the Office of Naval Research, and the High Performance Computing Modernization Program, sponsors awardees, including the Air Force Office of Scientific Research, which sponsored Binder's award.