Barry M. Goldwater Scholarship

https://goldwater.scholarsapply.org

**Deadline:** national deadline: approx. January 28, 2016; *campus deadline:* December 18, 2015

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**Fields of Study**

Any area of science, engineering or mathematics. Open sophomores or juniors.

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**Description**

The purpose of the Barry M. Goldwater Scholarship program is to “foster and encourage excellence in mathematics, the natural sciences, and engineering.” The Goldwater Foundation seeks scholars who are committed to a career in science, mathematics, or engineering, display intellectual intensity, and have the potential for significant future contribution in his or her chosen field.

The Goldwater Scholarship provides a grant toward the last year or last two years of undergraduate tuition and living expenses for students in science, mathematics, and engineering who are planning careers in research. WPI may nominate up to four candidates, who may be either juniors or sophomores at the time of nomination.

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**Criteria for Selection**

- Strong candidates have had the opportunity to participate in research. In their materials, the nominees discuss their research experience and request that one of their recommendations be completed by the individual who supervised the work. The research experience should be significant and demonstrate that they are “making meaning from science.” The research might involve learning effective benchmark practices, but the candidate’s commitment to and passion for science and engineering are important.

- Students who may not have had opportunities for research will demonstrate intellectual curiosity in other ways, perhaps through independent investigation of a theory or issue related to their fields of interest.

- Many strong candidates have competed for and been awarded internships in research facilities or worked as lab assistants in local industry or at their postsecondary institutions. Other related types of employment are also helpful.

- Abilities and potential are also shown by a candidate's meeting significant responsibilities, involvement in mathematics/science/engineering student organizations, related employment, independent investigation and research, early participation in graduate
courses, or other accomplishments outside the classroom. Among recent scholars, 25-30% have published their research, and 50% have made professional presentations.

- Strong candidates will provide evidence that demonstrates their individuality.
- Nearly all Goldwater Scholars intend to pursue doctoral degrees; this is now almost a prerequisite. Students who plan a career in secondary math/science education are not considered strong candidates for the Goldwater Scholarship.
- Nearly all Goldwater Scholars have a 4.0 GPA, or very close to it. According to the Foundation, the mean GPA among Scholars is 3.95 with a very small standard deviation.
- Strong letters of recommendation are essential and critical. At least one letter of recommendation must come from a faculty member who has supervised the student's research.
- Candidates must prepare a carefully thought out, well-researched response to the essay question. The essay topic should directly relate to the student’s area of academic study and should represent an area where the student’s knowledge is notable. Many students cite actual research experience in which they are or have been involved. In addition to actual experiences, evidence of additional investigation into the study of the topic must be demonstrated.

Application Procedure

The application materials include official forms with essays, transcripts, and three letters of recommendation. Several short essay questions ask about a student’s research experiences, personal interests, as well as academic and other accomplishments. In addition, the application requires a two page essay on a research topic of interest to the student.

WPI will select up to four students as nominees for the Goldwater Scholarship through an on-campus competition. Interested sophomores or juniors should speak to the Goldwater Faculty Representative, Prof. Ranalli, during the fall. To be considered for nomination, please submit a preliminary application that includes the following:

1. Complete the Goldwater application, available from the Goldwater website. Print the application form to PDF to submit via email for the WPI nomination process.
2. Outline of a 1-2 page essay on a significant research problem in your field of study that is of particular interest to you.
3. Unofficial WPI transcript. An official transcript will be required of nominees as well as transcripts from any other colleges/universities attended. (The unofficial transcript on Bannerweb printed to PDF is sufficient.)
4. Names and email addresses of three faculty members or research supervisors who have agreed to write recommendation letters if you should be nominated. Do not put the names of these recommenders into the Goldwater online application at this preliminary stage.
For the 2015-16 competition, these materials should be submitted to Prof. Tina-Marie Ranalli, Dept. of Humanities and Arts, (tranalli@wpi.edu) by December 18, 2015. Students selected as nominees should expect to work with the Goldwater Faculty Representative to revise their applications. The letters of recommendation and final application will submitted to the national competition near the end of January.

In the national competition, applications are screened in a primary and secondary review. The primary review is done by state of legal residence. All applicants who list Massachusetts, for example, as their legal residence are reviewed together by the same team regardless of where they go to school. The reviewing team determines in advance of the review that the reviewers do not have a conflict of interest in reviewing applications from that state. During the primary review, applicants are designated as scholars, scholars at large, honorable mentions and unsuccessfuls. Those designated as scholars become scholars without additional review. Those designated as honorable mention become honorable mentions without additional review. In the secondary review, those designated scholar at large are assembled into a national pool and reviewed by two additional reviewers working independently. Depending on the scores assigned in the secondary review, some scholars at large will be designated as scholars. All the scholars at large who do not become scholars will become honorable mentions.

The Foundation considers honorable mention a step below being named a scholar, and the designation does not come with scholarship funds. There are frequently almost the same number of honorable mentions as there are scholars.

Typically, 1,200 well-qualified students compete for these awards, which are announced in late March or early April.

Additional Information

The eligible fields are diverse, and include all areas of science, mathematics and engineering. The Goldwater website provides examples of possible undergraduate majors and career objectives. Students may propose MD/PhD programs, but the Foundation reports it receives too many applications from applicants who cannot justify the need for the MD degree to do the research they want to do and too many who clearly intend to practice medicine instead of doing research. A substantial number of scholars each year plan to earn the MD/PhD (indeed, more than will be able to obtain admission to these programs). The competition does not receive as many applications in pure Physics, Chemistry, or Mathematics. Applications from “practitioners” are not competitive. The competition tends to favor an interest in pure research.

Sophomores may apply and do receive awards, but juniors are often stronger applicants. In 2015, the Goldwater Foundation had 350 (29%) sophomore nominees and 56 (21.5%) sophomores recommended as scholars. A substantial number of sophomores are designated as honorable mentions. Frequently, sophomore applicants will be designated as premature applicants with a suggestion that they reapply the next year after having taken advanced courses or having done more research, etc. This information is transmitted to the faculty representative.
Meaningful research experience is often crucial but not required. For either a sophomore or a junior, it is not correct that they must have at least one substantial research experience. Having research experience is a compelling way of showing that the individual intends to have a research career but it is not the only way.

Goldwater Scholars have very impressive academic qualifications that have garnered the attention of prestigious post-graduate fellowship programs. Recent Goldwater Scholars have been awarded 86 Rhodes Scholarships, 123 Marshall Awards, 123 Churchill Scholarships, and numerous other distinguished fellowships such as the National Science Foundation Graduate Fellowships.

The Goldwater website posts the official application materials: [http://www.act.org/goldwater/](http://www.act.org/goldwater/)

**Recent WPI Goldwater Scholars:**

2015  
Katherine Amato '16, Biochemistry, New York  

2014  
Keith Gagnon '15, Biomedical Engineering, West Hartford, Connecticut  
Timothy DeFreitas '15, Bioinformatics and Computer Science, Pacifica, California, Honorable Mention  

2013  
Kristin E. Poti '14, Biology/Biotechnology and Spanish, Worcester, Massachusetts, Honorable Mention  

2012  
Jennifer Mann '13, Biomedical Engineering, Chelmsford, Massachusetts  

2011  
Sarah Mattessich '12, Biomedical Engineering, Woodbridge, Connecticut  

2010  
Andrew Black '11, Chemical Engineering, Bridgewater, Massachusetts  
Andrew Capulli '11, Biomedical Engineering, Hampstead, New Hampshire  

2008  
Daniel J. Smaltz '09, Chemistry, Paxton, Massachusetts  
Douglas K. Tischer '09, Biochemistry, San Anselmo, California  
Shawn P. Carey '09, Biomedical Engineering, Southington, Connecticut, Honorable Mention  

2007  
Lynn A. Worobey '08, Biomedical Engineering, Westerly, Rhode Island  
Charles A. Gammal III '08, Electrical and Computer Engineering and Mechanical Engineering, Westborough, Massachusetts, Honorable Mention
2006
Sanjayan Manivannan '07, Mechanical Engineering and Mathematics, North Smithfield, Rhode Island

2005
Molly L. Conforte '06, Biomedical Engineering, Lovell, Maine

2004
Matthew J. Black '05, Chemical Engineering, Bridgewater, Massachusetts
Helen A. Hanson '06, Engineering-Physics, Middletown, Connecticut
David J. LeRay '05, Mechanical Engineering and Mathematics, Everett, Massachusetts

2003
Ann C. Skulas '05, Chemistry, Vine Grove, Kentucky
Ravi Srinivasan '04, Mathematics, Worcester, Massachusetts

2002
Jack N. Waddell '03, Physics, Pace, Florida

2001
Yakov Kronrod '02, Mathematics and Computer Science, Malvern, Pennsylvania

1994
Erik Alldredge '95, Physics, Carson City, Nevada