



New Awards  
for Science Education  
to HHMI Professors

**2017** Competition



# New Awards for Science Education to HHMI Professors

## 2017 COMPETITION

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The Howard Hughes Medical Institute announces a new competition for HHMI professors. We expect to appoint up to 15 HHMI professors and award each professor a five-year grant to support their science education activities.

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The Howard Hughes Medical Institute plays a powerful role in advancing biomedical research and science education in the United States. HHMI's program in biomedical research rests on the conviction that scientists of exceptional talent, commitment, and imagination will make fundamental discoveries for the betterment of human health if they receive the resources, time, and freedom to pursue challenging questions. The Institute's science education program supports initiatives with the power to transform education in the life sciences for all students. Our objectives are to recruit and develop talented students who will be the future leaders of science and science education, and to promote scientific literacy among all students. Just as today's researchers solve complex questions by working across scientific disciplines and integrating tools from these disciplines, HHMI seeks to support undergraduate science education by integrating a variety of tools and approaches that will engage students in science.

Through this competition, HHMI expects to appoint up to 15 new HHMI professors. The five-year, nonrenewable grants will enable the professors to develop and implement science education activities.

The HHMI Professors Program identifies highly accomplished research scientists who have compelling ideas to advance science education, and provides them with flexible support to try out these ideas. The program empowers and raises the visibility of scientists with high research credibility as exemplars of and advocates for excellence in science education.

HHMI professors:

- are highly visible scientists who are deeply engaged with the research community;
- identify and pursue significant questions in science education in a rigorous manner;
- advance their chosen research field into new areas of inquiry and effectively integrate their scientific research with education;
- develop new tools and methods that lead to creative approaches in science education, bringing to bear concepts or techniques from other disciplines when appropriate;
- effectively forge links between the research community and the science education community, and in so doing, positively affect their colleagues; and
- demonstrate great promise for future original and innovative contributions.

## Rationale and background

The leading research universities in the United States are home to some of the world's best scientists and recruit the nation's most accomplished young people. With a strong commitment to the highest quality of scholarship, the best science faculty at research universities also provide leadership in the development, implementation, and dissemination of innovations in science education. In an era of increasing pressures on research funding, new emphases on student enrollment and retention, new technologies for delivering education and measuring student learning, and new scholarship in discipline-based education research, science faculty members are

challenged to navigate an increasingly complex landscape. Science faculty members who are able to successfully advance their research and teaching goals through creative integration of the two are a valued asset to their departments and important exemplars for their colleagues. The HHMI Professors Program provides grants to faculty members whose primary research and scholarship is aimed at advancing scientific discovery in the laboratory or the field. By supporting advances in science education conducted by leaders in the scientific research community, this program seeks to develop models for how scientists can engage in undergraduate education. HHMI professors are encouraged to consider ways through which they can build meaningful connections with the growing community of education researchers whose scholarship is in understanding how science is taught and learned.

Fifty-five scientists have been appointed HHMI professors and have received grants to foster innovations in undergraduate science education ([www.hhmi.org/grants/professors](http://www.hhmi.org/grants/professors)). The HHMI professors are an accomplished group, including members of the National Academy of Sciences, the National Academy of Engineering, the American Academy of Arts and Sciences, and recipients of the Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring.

## This competition

Through this competition, HHMI expects to appoint up to 15 new HHMI professors who will receive grants to enable them to develop and implement science education activities. The 2017 HHMI professor competition places no restrictions on the number of applications from an eligible institution. Eligible scientists may apply directly; prior institutional endorsement is not part of the application process. Each HHMI professor will receive a five-year, nonrenewable grant totaling \$1 million. In addition to the grants to individual professors, this opportunity includes the option for teams of two eligible scientists from the same institution to apply for collaborative awards, each team award totaling \$1.5 million over five years.

It is anticipated that the competition for these appointments will be extremely keen. Those candidates with outstanding records in scientific research and who

have shown evidence of significant originality and accomplishments in science education are encouraged to apply. HHMI seeks to support a community of professors that represents the depth and breadth of our scientific talent pool and capitalizes on the energy and perspective of our top scientists, including those traditionally underrepresented in the sciences.

## Eligibility

To be eligible, an applicant will:<sup>1</sup>

- be a full-time, tenured faculty member of a baccalaureate degree-granting natural science department (biological/life sciences, chemistry/biochemistry, physics, earth/geosciences, astronomy) at one of the eligible research universities (see Appendix A). Applicants from non-natural science departments (for example, computer science, mathematics, and engineering) will be considered if their research has direct impact on a natural science field. If the institution does not offer tenure, applicants with a full-time faculty appointment that reflects significant institutional commitment may be eligible.
- be currently appointed full time, and will have held the full-time appointment in their current home department for at least three consecutive years;
- have an assigned role in the development or implementation of the undergraduate curriculum in their home department as part of the responsibilities of their faculty appointment (teaching undergraduate courses, chair of the department curriculum committee, etc.); and
- be the principal investigator of one or more active, national, peer-reviewed research awards of at least three years duration, such as an NIH R01 grant, an NSF research grant, or an American Cancer Society research grant. Mentored awards, career development grants, and training grants do not qualify.

## Application

Prospective applicants first submit an Intent to Apply online at [www.hhmi.org/hhmiprofs2017](http://www.hhmi.org/hhmiprofs2017). The deadline to submit an Intent to Apply is July 1, 2016. Eligible applicants will then be granted access to the competition website and will submit their applications electronically

<sup>1</sup>In order to qualify for an award, applicants must meet all eligibility criteria by September 1, 2017.

according to instructions on the competition website. The deadline for applications is October 6, 2016. The elements of the application will include the following (please refer to the competition website for details):

- curriculum vitae and current and pending research support;
- statement of the applicant's significant scientific achievements;
- statement of the applicant's significant achievements in undergraduate science education;
- narrative detailing how the proposed activities will advance the applicant's research and teaching goals, incorporate evidence-based practice, and impact science education within the applicant's department, home university, and the broader scientific community (NOTE: Two applicants may link their applications in order to collaborate on a single project);
- statement of how the appointment as HHMI professor will enhance the applicant's identity as a scientist-educator and empower her/him to be an advocate for effective science education;
- up to two scientific publications; and
- proposed budget.

## Evaluation criteria

A panel of distinguished scientists and educators will review the proposals. The criteria by which the applications will be evaluated will include the following:

- the quality and impact of the applicant's research scholarship;
- the quality and impact of the applicant's previous efforts in undergraduate science education; and
- the anticipated impact of the proposed activities, including the impact on the applicant's colleagues and home department.

We plan to convene a symposium in October 2017, at which the finalists will present summaries of their proposed activities. All of the finalists must be available to travel to HHMI headquarters in Chevy Chase, MD, from October 2 to October 4, 2017.

Please send all inquiries to [profcomp@hhmi.org](mailto:profcomp@hhmi.org).

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## Key Dates

Access to online Intent to Apply and application site:  
**April 11, 2016** – [www.hhmi.org/hhmiprofs2017](http://www.hhmi.org/hhmiprofs2017)

Deadline to submit Intent to Apply: **July 1, 2016**

All application materials submitted: **October 6, 2016**

Symposium for finalists: **October 2–4, 2017**

Awards begin: **January 1, 2018**

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## BIBLIOGRAPHY

Anderson, W.A., U. Banerjee, C.L. Drennan, S.C.R. Elgin, I.R. Epstein, J. Handelsman, G. F. Hatfull, R. Losick, D.K. O’Dowd, B.M. Olivera, S.A. Strobel, G.C. Walker, and I.M. Warner. 2011. Changing the culture of science education at research universities. *Science* 331: 152-153. <http://www.sciencemag.org/content/331/6014/152.full.pdf?sid=31e5ea03-8d16-41ef-81a1-435b26bc59f6>

Brewer, C., D. Smith, et al., 2011. *Vision and Change in Undergraduate Biology Education: A call to action*. American Association for the Advancement of Science. <http://visionandchange.org/files/2011/03/Revised-Vision-and-Change-Final-Report.pdf>

Committee on the Status, Contributions, and Future Directions of Discipline-Based Education Research. S.R. Singer, N.R. Nielsen, and H.A. Schweingruber, editors. 2012. *Discipline-Based Education Research: Understanding and Improving Learning in Undergraduate Science and Engineering*. National Research Council, National Academies Press. [http://www.nap.edu/openbook.php?record\\_id=13362](http://www.nap.edu/openbook.php?record_id=13362)

Committee on Underrepresented Groups and the Expansion of the Science and Engineering Workforce Pipeline, F.A. Hrabowski, III, Chair. 2011. *Expanding Underrepresented Minority Participation: America’s Science and Technology Talent at the Crossroads*. National Academy of Sciences. [http://www.nap.edu/catalog.php?record\\_id=12984](http://www.nap.edu/catalog.php?record_id=12984)

PCAST STEM Undergraduate Education Working Group, S.J. Gates, Jr., J. Handelsman, G.P. Lepage, and C. Mirkin, Co-chairs. 2012. *Engage to Excel: Producing One Million Additional College Graduates with Degrees in Science, Technology, Engineering, and Mathematics*. President’s Council of Advisors on Science and Technology. [http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-engage-to-excel-final\\_feb.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ostp/pcast-engage-to-excel-final_feb.pdf)

Savkar, V. and J. Lokere. 2010. *Time to Decide: The Ambivalence of the World of Science Toward Education*. Nature Education. <http://i.zdnet.com/blogs/time-to-decide-nature-education-report-1.pdf>

Witham, K., L.E. Malcom-Piqueux, A.C. Dowd, and E.M. Bensimon. 2015. *America’s Unmet Promise: The Imperative for Equity in Higher Education*. Association of American Colleges & Universities. <https://www.aacu.org/publications-research/publications/americas-unmet-promise-imperative-equity-higher-education>

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Cover image: “Crambin,” watercolor. Credit: Irving Geiss/HHMI

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[www.hhmi.org](http://www.hhmi.org)

# Appendix A

## 2017 HHMI PROFESSORS COMPETITION

### Eligible Institutions<sup>2</sup>

#### **Alabama**

University of Alabama at Birmingham

#### **Arkansas**

University of Arkansas, Fayetteville

#### **Arizona**

Arizona State University, Tempe

University of Arizona, Tucson

#### **California**

California Institute of Technology

Stanford University

University of California, Berkeley

University of California, Davis

University of California, Irvine

University of California, Los Angeles

University of California, Riverside

University of California, San Diego

University of California, Santa Barbara

University of California, Santa Cruz

University of Southern California

#### **Colorado**

Colorado State University, Fort Collins

University of Colorado Boulder

#### **Connecticut**

University of Connecticut, Storrs

Yale University

#### **District of Columbia**

George Washington University

Georgetown University

#### **Delaware**

University of Delaware, Newark

#### **Florida**

Florida International University

Florida State University

University of Central Florida

University of Florida

University of Miami

University of South Florida, main campus

#### **Georgia**

Emory University

Georgia Institute of Technology, main campus

Georgia State University

University of Georgia

#### **Hawai'i**

University of Hawai'i, Manoa

#### **Illinois**

Northwestern University

University of Chicago

University of Illinois, Chicago campus

University of Illinois at Urbana-Champaign

#### **Indiana**

Indiana University Bloomington

Purdue University, main campus

University of Notre Dame

#### **Iowa**

Iowa State University

University of Iowa

#### **Kansas**

Kansas State University, Manhattan

University of Kansas, Lawrence

#### **Kentucky**

University of Kentucky

University of Louisville

#### **Louisiana**

Louisiana State University and

Agricultural & Mechanical College

Tulane University of Louisiana

#### **Maryland**

Johns Hopkins University

University of Maryland, College Park

#### **Massachusetts**

Boston College

Boston University

Brandeis University

Harvard University

Massachusetts Institute of Technology

Northeastern University

Tufts University

University of Massachusetts Amherst

<sup>2</sup>2015 Carnegie Classification of Institutions of Higher Education, R1: Doctoral Universities, Highest Research Activity

**Michigan**

Michigan State University  
University of Michigan, Ann Arbor  
Wayne State University

**Minnesota**

University of Minnesota, Twin Cities

**Mississippi**

University of Mississippi

**Missouri**

University of Missouri, Columbia  
Washington University in St. Louis

**Nebraska**

University of Nebraska–Lincoln

**New Jersey**

Princeton University  
Rutgers University–New Brunswick

**New Mexico**

University of New Mexico, main campus

**New York**

Columbia University  
Cornell University  
CUNY Graduate School and University Center  
New York University  
Stony Brook University  
SUNY Albany  
Syracuse University  
University at Buffalo  
University of Rochester

**North Carolina**

Duke University  
North Carolina State University, Raleigh  
University of North Carolina at Chapel Hill

**Ohio**

Case Western Reserve University  
Ohio State University, main campus  
University of Cincinnati, main campus

**Oklahoma**

University of Oklahoma, Norman

**Oregon**

Oregon State University  
University of Oregon

**Pennsylvania**

Carnegie Mellon University  
Pennsylvania State University, main campus  
Temple University  
University of Pennsylvania  
University of Pittsburgh, main campus

**Rhode Island**

Brown University

**South Carolina**

Clemson University  
University of South Carolina, Columbia

**Tennessee**

University of Tennessee, Knoxville  
Vanderbilt University

**Texas**

Rice University  
Texas A&M University, College Station  
Texas Tech University  
University of Houston  
University of North Texas  
University of Texas at Arlington  
University of Texas at Austin  
University of Texas at Dallas

**Utah**

University of Utah

**Virginia**

George Mason University  
University of Virginia, main campus  
Virginia Commonwealth University  
Virginia Polytechnic Institute and State University

**Washington**

University of Washington, Seattle  
Washington State University, Pullman

**West Virginia**

West Virginia University, Morgantown

**Wisconsin**

University of Wisconsin–Madison  
University of Wisconsin–Milwaukee