Howard Hughes Medical Institute Grants Program

- Goals are to strengthen science education and to cultivate the next generation of biomedical research scientists

- Award grants to universities, secondary school districts, museums and biomedical research laboratories

- University of Maryland has received seven such grants in support of undergraduate biology education, totaling $9.9M
1992 Grant
- Provide research experiences for undergraduate students
- Renovation of 5 key upper-division laboratory courses

1998 Grant
- Create a freshman seminar to facilitate entry into research
- Strengthen undergraduate research experiences
- Provide opportunity for travel to professional meetings

- Continue existing undergraduate research programs
- Support wide-scale curriculum enhancements
Catalyst Seminar

• One-credit course offered in the spring of the freshman year

• Workshops on the culture of science, scientific writing, preparing and evaluating grant proposals, responsible conduct in science, and locating research opportunities

• Research overviews by faculty

• Attendance at the annual HHMI Undergraduate Research Symposium
Catalyst Seminar Outcomes

• 584 talented freshmen have participated
• Strong faculty participation (~15 each year)
• 87 Catalyst Seminar participants have gone on to receive HHMI Undergraduate Research fellowships
• Follow-up of Catalyst Seminar participants shows:
  • 93% conducted research or completed an internship
  • 90% retention in STEM majors
  • 83% graduated in 4 years
Undergraduate Research Fellowship Program

• Provides ~10 fellowships per year to students conducting faculty-mentored independent research in biology and related areas

• Students receive $6,000 stipend, $1,500 for research supplies

• Fellowships are renewable for up to 3 years
Fellowship Program Outcomes

- Over 500 students have received fellowships
- 144 faculty from 13 campus departments in 6 colleges have served as mentors
- Students have co-authored more than 250 papers in peer-reviewed journals
- Highlights for recent years
  - ~30% of recipients were freshmen or sophomores
  - 47% continued their fellowships beyond the initial year
  - 45% graduate with departmental honors
  - >20 students received prestigious national scholarships for undergraduate and post-graduate studies (Goldwater, NSF, Jack Kent Cooke)
Capstone Program

- 103 students have made a total of 155 presentations of the results of their work at regional, national and international professional meetings

- 23 have received awards for their presentations
  - American Society of Plant Biologists
  - Animal Behavior Society
  - Entomological Society of America
  - Society for Behavioral Neuroendocrinology
  - Frank and Sarah McKnight Prize in Undergraduate Physics or Quantitative Biology
  - UMBC Undergraduate Research Symposium
Where are they now?

- Medical School (37%)
- MD/PhD Program (10%)
- Veterinary, Dental, Pharmacy Programs (4%)
- Employed outside the Life Sciences (4%)
- Science Education (2%)
- Employed in the Life Sciences (7%)
- Graduate School in the Life Sciences (30%)
- Other (6%)
Where are they now?

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