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HHMI Awards \$80 Million for Undergraduate Science Education at Research Universities

Undergraduate biology education is in the midst of a revolution, and 44 research universities will receive \$80 million from Howard Hughes Medical Institute (HHMI) to help them address the challenges of a rapidly changing and increasingly interdisciplinary science. The grants will support programs that encourage graduate students and postdoctoral fellows to hone their teaching skills. Other programs will bring emerging scientific disciplines such as genomics and computational biology into the undergraduate curriculum and encourage minorities to pursue careers in science.

The four-year grants to universities in 28 states and the District of Columbia range from \$1.2 million to \$2.2 million each. A panel of scientists and educators reviewed proposals from 189 institutions.

Biology is progressing so rapidly and interfacing with so many other disciplines that undergraduate teaching runs the risk of substituting quantity for quality, says HHMI President Thomas R. Cech, a Nobel Prize-winning biochemist. Through these grants, the Institute is providing resources to help universities bring their undergraduate science teaching up to the level of their research programs.

The dichotomy between research and teaching concerns Peter J. Bruns, vice president for grants and special programs. One barrier to linking research and education is the lack of opportunities for graduate students and postdoctoral fellows who are the future professors to acquire teaching skills and experience, says Bruns, who was a professor of biology at Cornell University before he joined HHMI.

The new grants support programs that can become models for bringing undergraduate teaching and research closer together, as well as exposing undergraduates to emerging fields in biology and to the increasingly interdisciplinary nature of the life sciences. They also support efforts to attract minorities to science and to encourage them to choose scientific careers. Programs include interdisciplinary laboratory courses in areas such as bioinformatics, proteomics and tissue engineering, as well as new faculty,

laboratory equipment, curriculum development and student research opportunities.