HHMI Pilots a "SEA" Change

EXPERIMENTAL COURSE TO BRING GENOMICS TEACHING AND RESEARCH TO UNDERGRADUATES ACROSS THE NATION

STUDENTS AT THE UNIVERSITY OF Pittsburgh will participate in an important experiment during the upcoming academic year as they identify and characterize previously unknown bacteriophages, viruses that infect bacteria. Even as they engage in hands-on research themselves, these undergraduates will be helping HHMI pilot-test a course in genomics that ultimately will be made available to colleges and universities nationwide.

"Our goal is to leverage the knowledge and experience of educators supported by HHMI over the past two decades to create a national course that will make it possible for undergraduates to have an authentic research experience," says Tuajuanda Jordan, a senior program officer who heads HHMI's newly created Science Education Alliance (SEA).

The SEA aims to be a national resource for science education by developing and supplying materials and methods to the undergraduate education community, and by assembling and supporting educator networks working on common activities.

The genomics course builds on the work of two HHMI professors—Graham F. Hatfull at the University of Pittsburgh and Sarah C.R. Elgin at Washington University in St. Louis (see "Genomics for All," page 40)—and the efforts of several other grantees: Brad Goodner, HHMI undergraduate program director at Hiram College in Ohio, and A. Malcolm Campbell, director of the HHMI-supported Genome Consortium for Active Teaching at Davidson College in North Carolina.

"We're making explicit connections between teaching and research," says Jordan.

Students will isolate bacteriophages; progress through DNA isolation, cloning, and sequencing; and ultimately annotate, finish, and compare the genomic sequences using vetted, interactive computer programs and public databases. Bacteriophages are a proven starting point for student genome analysis since they are plentiful, highly diverse, easily isolated directly from nature, and have relatively simple and small genomes. HHMI will provide reagent kits and pay for all costs associated with genomic sequencing and annotation.

Jordan says the long-term goal is to provide students with a rigorous research experience that results in the complete genomic characterization of at least 12 unique bacteriophages per year, leading to peer-review publications with student co-authors in mainstream scientific journals and science education-focused journals. Making the genetic data available through scientific literature and national databases has real-life value: researchers believe that gene recombinations between bacteriophage and host are responsible for the toxins of diseases such as cholera and diphtheria.

Based on the pilot-course experience, Jordan and her collaborators will develop a resource guide for the course and design a training workshop for faculty to be held next summer. Formal recruitment of the first 12 participating institutions to offer the course—six universities and six colleges—will begin this coming fall. By 2011, Jordan hopes that more than 700 students will be taking the course at 36 institutions. ■

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TUAJUANDA JORDAN

Paul Fetters

Wellcome Trust, HHMI Establish International Postdoctoral Fellowships

Postdoctoral researchers in HHMI and Wellcome Trust laboratories wanting to do their research abroad may now have that opportunity, thanks to an overseas exchange program the two institutes recently established. Designed to promote scientific collaboration and research opportunities for scientists at the beginning stages of their careers, the program will enable postdocs to study and work for up to a year in any of the HHMI laboratories in the United States or in one of a number of the Wellcome Trust laboratories in the United Kingdom. Travel and living expenses for participants will be paid and assistance will be provided for obtaining visas and work authorization. For applications and further information, visit www.hhmi.org or www.wellcome.ac.uk.

HHMI Forges Partnerships to Support Postdoctoral Research

Over the next three years HHMI will contribute about $9 million to fund postdoctoral scholarships provided by the Jane Coffin Childs Memorial Fund, the Helen Hay Whitney Foundation, the Damon Runyon Cancer Research Foundation, and the Life Sciences Research Foundation. Each organization will competitively select the fellows, who will conduct research in the labs of HHMI investigators. "By funding this program, HHMI anticipates that these organizations will be able to offer 16 additional fellowships each year to help advance the careers of promising young scientists," says Jack E. Dixon, HHMI's vice president and chief scientific officer. The fellowships will have three-year terms and fellows will be employed by HHMI.