



HHMI-supported Undergraduate Research Course

- Now Accepting Applications -

HHMI is partnering with institutions across the US to offer undergraduate students an authentic research experience in the context of a Course-based Research Experience (CRE).

HHMI is currently offering the Science Education Alliance - Phage Hunters Advancing Genomics and Evolutionary Science (SEA-PHAGES) CRE, a two-semester CRE designed to replace the traditional introductory biology lab sequence. SEA-PHAGES students begin with isolating bacteriophages from local soil samples, progress through a variety of microbiology techniques to purify and characterize their viruses, isolate genomic phage DNA, and engage in the bioinformatics analysis and annotation of their phage genomes. Because each phage is unique, students name their phages. Collectively, the data generated by the SEA-PHAGES students lead to new insights about the genetic complexity and evolution of bacteriophages, and have uncovered novel mechanisms underlying the interactions between these viruses and their host bacteria. Since 2008, the SEA-PHAGES project has produced over 70 publications, which include peer-reviewed scientific and pedagogical articles, as well as genome announcements. Many of these papers include as co-authors SEA-PHAGES students and faculty. The SEA-PHAGES program was recently highlighted in Science Magazine:
<http://www.sciencemag.org/news/2017/07/competition-helps-college-students-find-place-science>

SEA-PHAGES is currently offered at over 100 institutions across the US, and includes both 2-year and 4-year institutions. In the fall of 2016, 4,133 students, primarily freshmen, participated in the program.

Institutions interested in offering SEA-PHAGES can apply to become members of the program. Schools accepted into the program are provided extensive support, including:

- Training of instructors at two one-week workshops:
 - (i) phage discovery methods held at the HHMI laboratory on the campus of the University of Maryland Baltimore County, and
 - (ii) bioinformatics methods held at HHMI headquarters in Chevy Chase, Maryland.
- The detailed course design and materials, including manuals, protocols, software, and year-round technical support.
- Participation by students and faculty representatives of the SEA at the annual SEA Symposium held at HHMI Janelia Research Campus in Ashburn, Virginia.

Member institutions are expected to provide the following:

- At least 2 instructors, who will be trained by HHMI in all aspects of the course.
- Course scheduling so that each lab section meets at least twice per week for at least 2 hours per meeting.
- Appropriate lab space and equipment, as well as project consumables.
- Appropriate computing equipment.

Oct 31, 2017, is the application deadline to join the program and begin offering the course in the Fall of 2018. More details about the program, including the application forms, are available at www.hhmi.org/SEA. For more information, please contact us at SEA@hhmi.org