



## Project Information & Associate Application

Submission Deadline: Oct 31, Annually

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### Institution Information

Institution Name

Institution City

Institution State

Academic Year Structure

[Quarter, Semester, Other]

If Other, Specify

### Carnegie Classification-Basic

Academic Year Start Date

Academic Year End Date

### Applicant Contact Information

*The named person should be an instructor that will be significantly involved in preparing and teaching the course. The named person will serve as the primary recipient of course-related communications from HHMI that are intended for all key institutional personnel involved in the PHAGES course.*

First Name

Middle Name

Last Name

Title

Department

Preferred Phone Number

Primary Email Address

Where did you learn about the SEA-PHAGES project and the open application cycle?

### Institution Official Authorizing the Course

*The named person should be a member of your institution leadership with oversight of faculty teaching assignments. Typically, this person is the Dean or Department Chair. This person will also provide a letter of support to accompany the Full Application.*

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### Course Information

Course Type

*The content of the two-semester PHAGES project is designed to **fully replace**, rather than be integrated with, the content of standard introductory biology laboratory courses. Indicate if the PHAGES project will be implemented as a new course or used to modify/replace an existing course at your institution. Please also provide a brief description, including if and how students will be able to complete the PHAGES research project in two consecutive semesters.*

Are there prerequisite courses

[Yes/No]

*This course is designed for students that are enrolled in introductory undergraduate biology and/or chemistry courses with no other pre- or co-requisites.*

If Yes, Specify

#### Academic Level

*The course is aimed at undergraduates who are new to college level science and have had little or no research experience. Please indicate if the course will be offered at the freshman, sophomore, junior or senior level.*

#### Targeted student population

*SEA institutions vary in the student populations targeted, if any, for the PHAGES course.*

*Examples of targeted student populations include honors students, STEM majors, or non-science majors*

#### Student Participation in the SEA-PHAGES sequence

*The SEA-PHAGES research project is divided into two consecutive components, a Phage Discovery “wet lab” component and a Phage Genomics “bioinformatics” component. The two components should be formally scheduled for two consecutive semesters and as one cohesive research project. Describe how the two components of SEA-PHAGES will be offered to enable and encourage participation of students in both Phage Discovery and Phage Genomics in consecutive semesters and as a cohesive research project.*

#### Additional Information

*Use this space to provide additional information and/or explanations for how the course will be implemented at your institution, including if you plan to offer the course across multiple campuses at your institution.*

### Commitment in Number of Years to offering SEA-PHAGES

*Because it will require significant effort to become familiar with the SEA-PHAGES project and implement it successfully in the context of a course, we would like to have schools commit to implementing the SEA-PHAGES project for at least two years.*

Do you have plans to add additional sections after Year 1?

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### Support Staff

*HHMI recommends that each section of students offered the PHAGES course be staffed with multiple personnel; that might mean two faculty members or a faculty member and at least one well-prepared Teaching Assistant. TAs assigned the PHAGES course have included students, lab managers, research assistants and faculty members.*

Describe the types of support staff you will have for SEA-PHAGES, as well as their roles in supporting project implementation.

## COURSE COMPONENT I: PHAGE DISCOVERY

*Typically, the Phage Discovery component is offered during the Fall semester and the Phage Genomics component in the Spring semester.*

Academic Term(s) Phage Discovery will be offered

Number of sections in Year 1 for Phage Discovery

Number of students per section for Phage Discovery

*Based on successful implementations of the course, we recommend allocating 60 lab hours per semester (or per component). The course should be scheduled so that each laboratory section (excluding lecture) of the course meets at least twice per week for at least 2 hours per meeting. Meeting for at least two hours at each lab period is important so that students can complete a given experiment, and meeting twice a week for labs is critical for maintenance of viable bacteria and phages, and for continuity of the research.*

Number of weeks dedicated to Phage Discovery Lab (excluding lectures)

Number of meetings per week for Phage Discovery Lab (excluding lectures)

Number of hours per week for Phage Discovery Lab (excluding lectures)

Number of credits earned for Phage Discovery Lab

Describe how the number of credits earned for Phage Discovery Lab compare to that earned for similar courses at your institution.

How many hours of supervised “open labs” will be allotted for Phage Discovery, and who will supervise these open labs?

*In addition to the recommended meeting times, it is helpful to create supervised “open lab” opportunities for students, which is critically important if it is not possible to have formal lab sessions of at least four hours per week. Ideally, these additional lab sessions will be structured in a manner that reflects the additional effort, for example, by offering additional course credit.*

How will your institution access **transmission** electron microscopy equipment for this course?

*Institutions are responsible for paying the costs of imaging.*

## COURSE COMPONENT II: PHAGE GENOMICS

Typically, the Phage Discovery component is offered during the Fall semester and the Phage Genomics component in the Spring semester.

Academic Term(s) Phage Genomics will be offered

Number of sections in Year 1 for Phage Genomics

Number of students per section for Phage Genomics

*Based on successful implementations of the course, we recommend allocating 60 lab hours per semester (or per component). The course should be scheduled so that each laboratory section (excluding lecture) of the course meets at least twice per week for at least 2 hours per meeting.*

Number of weeks dedicated to Phage Genomics Lab (excluding lectures)

Number of meetings per week for Phage Genomics Lab (excluding lectures)

Number of hours per week for Phage Genomics Lab (excluding lectures)

Number of credits earned for Phage Genomics Lab

Describe how the number of credits earns for Phage Genomics Lab compare to that earned for similar courses at your institution.

How many hours of supervised “open labs” will be allotted for Phage Genomics, and who will supervise these open labs?

*In addition to the recommended meeting times, it is helpful to create supervised “open lab” opportunities for students, which is critically important if it is not possible to have formal lab sessions of at least four hours per week. Ideally, these additional lab sessions will be structured in a manner that reflects the additional effort, for example, by offering additional course credit.*

How will your institution provide computing equipment to faculty, staff, and students to run the software required for the course?

*The following are minimum computer configurations: Windows XP/Vista/7 or Mac OS X 10.5; 1.6 GHz/x64 dual-core processor; 4 GB RAM; 128 MB video memory; 20 GB free hard-drive space. The software requirements are likely to require the support of the institution’s IT staff.*

## Assessment of Learning Gains

*All institutions implementing the PHAGES course will be expected to participate in SEA-PHAGES-designed assessments, including the PITS survey for which further information will be provided to SEA schools in the fall. In addition, institutions are welcome to conduct their own course assessments using appropriately selected and validated assessment tools.*

Do you plan to assess the course outcomes?

If Yes, describe.

Do you plan to do longitudinal tracking?

If Yes, describe.

## Faculty Member #1

*Faculty members are defined as persons that will be preparing and teaching the course. Teaching assistants should **not** be listed as faculty. For each semester, at least two instructors should be assigned the SEA-PHAGES course. The persons teaching the Phage Discovery semester can be but do not have to be the same as the persons teaching the Phage Genomics semester. When the persons teaching the two semesters are not the same, coordination between instructors is critical to ensure continuity and cohesiveness of the research and research experience. You may list up to 5 instructors in total.*

First Name

Middle Name

Last Name

Title

Department

Preferred Phone Number

Primary Email Address

Describe Tenure Status

Teaching Effort, hours

*HHMI recommends that teaching the SEA-PHAGES course represents a significant portion of each faculty member's teaching load; per week, the instructor team should allot at least 4 hours of contact time with each section of students in the laboratory and at least 2 hours for laboratory preparation. Provide the number of hours that the instructor will dedicate to teaching each PHAGES component and the instructor's total teaching load, in hours, for each corresponding semester.*

Phage Discovery Lab

Total Teaching load for corresponding semester

Phage Genomics Lab

Total Teaching load for corresponding semester

Role Description

*Use this space to provide additional information regarding the role(s) of the faculty instructor in implementing the PHAGES course.*

## Faculty Member #2

*Faculty members are defined as persons that will be preparing and teaching the course. Teaching assistants should **not** be listed as faculty. For each semester, at least two instructors should be assigned the SEA-PHAGES course. The persons teaching the Phage Discovery semester can be but do not have to be the same as the persons teaching the Phage Genomics semester. When the persons teaching the two semesters are not the same, coordination between instructors is critical to ensure continuity and cohesiveness of the research and research experience. You may list up to 5 instructors in total.*

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Phage Discovery Lab

Total Teaching load for corresponding semester

Phage Genomics Lab

Total Teaching load for corresponding semester

Role Description

*Use this space to provide additional information regarding the role(s) of the faculty instructor in implementing the PHAGES course.*

### Faculty Member #3

*Faculty members are defined as persons that will be preparing and teaching the course. Teaching assistants should **not** be listed as faculty. For each semester, at least two instructors should be assigned the SEA-PHAGES course. The persons teaching the Phage Discovery semester can be but do not have to be the same as the persons teaching the Phage Genomics semester. When the persons teaching the two semesters are not the same, coordination between instructors is critical to ensure continuity and cohesiveness of the research and research experience. You may list up to 5 instructors in total.*

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Teaching Effort, hours

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Phage Discovery Lab

Total Teaching load for corresponding semester

Phage Genomics Lab

Total Teaching load for corresponding semester

Role Description

*Use this space to provide additional information regarding the role(s) of the faculty instructor in implementing the PHAGES course.*

## Faculty Member #4

*Faculty members are defined as persons that will be preparing and teaching the course. Teaching assistants should **not** be listed as faculty. For each semester, at least two instructors should be assigned the SEA-PHAGES course. The persons teaching the Phage Discovery semester can be but do not have to be the same as the persons teaching the Phage Genomics semester. When the persons teaching the two semesters are not the same, coordination between instructors is critical to ensure continuity and cohesiveness of the research and research experience. You may list up to 5 instructors in total.*

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Teaching Effort, hours

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Phage Discovery Lab

Total Teaching load for corresponding semester

Phage Genomics Lab

Total Teaching load for corresponding semester

Role Description

*Use this space to provide additional information regarding the role(s) of the faculty instructor in implementing the PHAGES course.*

**Faculty Member #5**

*Faculty members are defined as persons that will be preparing and teaching the course. Teaching assistants should **not** be listed as faculty. For each semester, at least two instructors should be assigned the SEA-PHAGES course. The persons teaching the Phage Discovery semester can be but do not have to be the same as the persons teaching the Phage Genomics semester. When the persons teaching the two semesters are not the same, coordination between instructors is critical to ensure continuity and cohesiveness of the research and research experience. You may list up to 5 instructors in total.*

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Describe Tenure Status

Teaching Effort, hours

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Phage Discovery Lab

Total Teaching load for corresponding semester

Phage Genomics Lab

Total Teaching load for corresponding semester

Role Description

*Use this space to provide additional information regarding the role(s) of the faculty instructor in implementing the PHAGES course.*

## Letter of Support

A letter of support must be prepared by the institution official authorizing the course. The letter of support should include a description of institutional support for the following:

- Scheduling of course
- Assignment of instructors
- Funding and provisions for classroom/lab space and supplies, including computer equipment and IT support
- Implementation of SEA-PHAGES-sponsored assessments
- Commitment towards continued course implementation beyond Year 1.

You may provide 2 additional letters of support. Please limit each letter to two pages.

## Application and Review Dates

Applications to join the program and begin offering the SEA-PHAGES course in the following academic year can be submitted any time before October 31, annually. Feedback or acceptance notifications will be communicated to applicants within 3 weeks of when the application is received, after which applicants may accept the invitation or modify and resubmit their application before the October 31 deadline.

We anticipate accepting 20 institutions per cohort and recommend that institutions interested in joining the program begin the application process as early as possible. Early applicants benefit from additional opportunities to revise and resubmit their applications, and once accepted, to begin scheduling the course and securing intramural and/or extramural support.