HOWARD HUGHES MEDICAL INSTITUTE

**SEA-PHAGES GIFT Workshop**

December 8-10, 2014 | HHMI Headquarters

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| **Learning Objectives** | By the end of this workshop, GIFT members will be able to:* Assemble DNA sequencing reads from different sequencing platforms and using different file types.
* Assess the quality of an assembly in terms of depth of coverage, discrepant areas, physical ends of the molecule, and completeness of the genome.
* Design sequencing or PCR primers to provide additional sequencing data where needed, and incorporate new data into an existing assembly.
* Generate a final sequence file in the fasta format that is ready for addition to PhagesDB, distribution to SEA-PHAGES schools, and submission to GenBank.
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| **Pre-****req** | Participants will bring a computer with at least 4 Gb of RAM and the 2014 SEA Virtual Machine installed.A three-button mouse is required. |

| **Monday | December 8** | ***Time*** | ***Location*** | ***Topic*** |
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| 2:00-4:00p | *Conference Center* | **Registration** *(Guests may get lunch in the Dining Room between 11:30a-1:30p by showing their registration badge to the cashier)* |
| 4:00 | *D115* | **Intro and Welcome to the GIFT** |
| 4:30 | *D115* | **The Command Line, and Finishing Software** |
| 5:00 | *D115* | **Basics of Sequencing** |
| 5:30 | *Dining Room* | *Dinner* |
| 6:45 | *D115* | **Genome Assembly** |
| 8:15 | *Pilot* | **Social** |

| **Tuesday | ­­December 9** | ***Time*** | ***Location*** | ***Topic*** |
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| 7:15a | *Dining Room* | *Breakfast* |
| 8:00 | *D115* | **The Basics of Finishing** |
| 8:30 | *D115* | **Intro to Consed** |
| 9:30 | *D115* | **Consed/Assembly Exercises** |
| 10:00 | *Great Hall* | *Break* |
| 10:30 | *D115* | **First Finishing Steps** |
| 11:30 | *D115* | **Genome Ends** |
| 12:30p | *Dining Room* | *Lunch* |
| 1:30 | *D115* | **Find Your Ends!** |
| 2:15 | *D115* | **Work on your Genome** |
| 3:00 | *Great Hall* | *Break* |
| 3:15 | *Small Auditorium* | **Identifying and Fixing Weak Assembly Areas** |
| 5:30 | *Dining Room* | *Dinner* |
| 7:00 | *Small Auditorium* | **Consed: Advanced Features and Alternative Workflows** |
| 8:15 | *Pilot* | **Social** |

|  | ***Time*** | ***Location*** | ***Topic*** |
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| 7:15a | *Dining Room* | *Breakfast* |
| 8:00 | *D115* | **Cabinet of Genomic Oddities** |
| 9:00 | *D115* | **A Flowchart for Genome QC** |
| 10:15 | *Great Hall* | *Break* |
| 10:30 | *D115* | **Final Genome Check, Final Genome File** |
| 12:00p | *D115* | **Marching Orders** |
| 12:30 | *Dining Room* | *Adjourn/Lunch* |