

Learning Objectives	Participants will be able to: <ul style="list-style-type: none"> • Characterize and investigate phage genomes, including the details of gene calling, functional assignments, and preparing a final product of a submission file that meets QC requirements. • Install and use the software for annotation/analyses of phages. The software includes DNA Master, Phamerator, PECAAN, and other web-based tools. • Identify basic phage biology concepts that underlie the bioinformatic investigations. • Devise a systematic plan for implementation of phage genomics in their classroom.
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Pre-req	Participants will bring a computer with all software installed and tested. See computer requirements and software installation information at http://seaphages.org/faculty/information/#bioinformatics .
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Time	Location	Topic	
Friday, December 13	2:00-4:00p	Conference Center	Registration
	4:00	D124&D125	Welcome and Introductions
	4:30	D124&D125	Central Dogma Review
	5:30	Dining Room	Dinner
	6:45	D124&D125	Introduction to Genome Annotation* & Getting Started
	8:00	Pilot	Social

Time	Location	Topic	
Saturday, December 14	8:15a	Dining Room	Breakfast
	9:00	D124&D125	Draft Functional Annotation
	10:00	Great Hall	Break
	10:15	D124&D125	Guiding Principles* Calling the Genes*
	11:30	D124&D125	Calling the Genes*
	12:30p	Dining Room	Lunch
	1:15	D124&D125	Group Exercise: Initial Gene Calling
	2:30	Main Auditorium	Debrief: Initial Gene Calling
	3:00	Great Hall	Break
	4:00	D124&D125	Group Exercise: More Gene Calling
	5:30	Dining Room	Dinner
	6:45	D124&D125	Group Exercise: More Gene Calling
	7:45	Pilot	Social

Time	Location	Topic	
Sunday, December 15	8:15a	Dining Room	Breakfast
	9:00	D124&D125	Debrief: Specific Gene Calls
	9:30	D124&D125	Assigning Functions*
	10:15	Great Hall	Break
	10:30	D124&D125	Group Exercise: Assigning Functions
	11:00	D124&D125	Debrief: Assigning Functions
	11:30	D124&D125	Group Exercise: Formatting Concerns
	12:30p	Dining Room	Lunch
	1:15	D124&D125	Group Exercise: Special Cases: Frameshifts/tRNAs/and more
	3:00	Great Hall	Break
	4:00	D124&D125	Group Exercise: A different genome
	5:30	Dining Room	Dinner
	6:45	D124&D125	Ask Graham!
	7:45	Pilot	Social

Monday, December 16	Time	Location	Topic
	8:15a	Dining Room	Breakfast
	9:00	D124&D125	Putting it all together & compiling Notes
	10:15	Great Hall	Break
	10:30	D124&D125	Group Exercise: Notes
	11:30	D124&D125	Group Exercise: reverse genes and TAC, another genome - tRNAs
	12:30p	Dining Room	Lunch
	1:15	D124&D125	SEA Bioinformatics: Beyond the Basics
	2:00	D124&D125	Investigate Clusters
	3:00	Great Hall	Break
	4:00	D124&D125	Useful tools and Participant choice: What do you want to see again
	5:30	Dining Room	Dinner
	6:45	D124&D125	Inside the Black Box: Sequencing and Finishing Phage Genomes
7:45	Pilot	Social	

Tuesday, December 17	Time	Location	Topic
	8-9:00a	Conference Center	Room Checkout Before Breakfast
	8:15	Dining Room	Breakfast
	9:00	D124&D125	Reflection on Annotation Process
	9:30	D124&D125	Best Classroom Practices to Improve Genome Annotations
	9:35	D124&D125	Group Discussions: Best Classroom Practices to Improve Genome Annotations
	10:00	D124&D125	Reporting of Group Discussion Information
	10:30	Great Hall	Break
	10:45	D124&D125	Faculty Panel: Examples of Successful Bioinformatics Implementation
	11:45	D124&D125	Closing Remarks
12:00p	Dining Room & Conference Center	Lunch and Adjournment	