

Colorado State University, August 1- 7, 2021

Pre-Workshop Clinic (10 AM- 4 PM)-Smith Alumni Center August 1, 2021

Registration (6:00 – 6:30 PM) Smith Alumni Center

Sunday August 1, 2021

Welcome and Opening Reception (6:30-9:30 PM)

August 1, 2021

Smith Alumni Center

6:30-6:45	Welcome and Opening Remarks Jill Pecon Slattery and Sue VandeWoude
6:45-8:00	15 Attendee Presentations Attendees Sue as MC
8-8:45	Introduction to Group Projects Bob Fitak
6:30-9:30	Refreshments and Social Time

Day 1: NGS Data Overview, Genome Mining

August 2, 2021

Smith Alumni Center

7:00 - 8:00	Breakfast	Ram's Horn Dining Center
8:15-8:25	Step 1: What are my NGS tools for wildlife disease research? Jill Pecon-Slattery	
8:25-8:35	Introduction to computers Joe Strecker	
8:35-10:00	Intro to genomics and NGS Mark Stenglein	
10:00-10:20	Coffee Break	
10:20-12:15	Command Line and BLAST Bob Fitak and Mark Stenglein	
12:15-1:15	Lunch Provided Onsite	
1:15-2:30	15 Attendee Presentations Sue as MC	
2:30 -3:15	BLAST exercises Bob Fitak and Mark Stenglein	
3:15-5:00	Data: Quality Control and Processing (Lecture and Lab) Mark Stenglein and Bob Fitak	
5:00-7:00	Free Time and Dinner	Ram's Horn Dining Center
7:15-9:00	Optional individual sessions with instructors	Smith Alumni Center

Day 2: Genome Assembly, Whole Genome Alignments, Metagenomics

August 3, 2021

Smith Alumni Center

7:00 – 8:00	Breakfast	Ram's Horn Dining Center
8:15-8:25	Step 2: Best Practices of Quality Genomes for Host And Pathogen-Where Are We? Jill Pecon-Slattery	
8:25-9:30	Mapping to Reference Genome: Good, Bad Ugly Mark Stenglein and Bob Fitak	
9:30-10:00	CSU Flash talk Nicole Sexton/Anna Fagre	
10:00-10:20	Coffee Break and Meet Invited Speaker	
10:20-11:15	Mapping Exercises Bob Fitak and Mark Stenglein	
11:15-12:15	Genome Assembly Lecture Mark Stenglein	
12:15-1:15	Lunch Provided Onsite	
1:15-3:15	Genome Assembly Exercises Mark Stenglein and Bob Fitak	
3:15-3:35	Coffee Break	
3:35-4:15	Genome Assembly Exercises (Continued) Mark Stenglein and Bob Fitak	
4:15-4:35	Introduction to Metagenomics and Disease Mark Stenglein	
4:35-5:00	Group Project Time	
5:00-7:00	FREE TIME AND DINNER	Ram's Horn Dining Center
7:15-9:00	Optional individual sessions with instructors	Smith Alumni Center

Day 3: Comparative Genomic and Phylogenomic Inferences

August 4, 2021

Smith Alumni Center

7:00-8:00	Breakfast	Ram's Horn Dining Center
8:15-8:25	Step 3: Comparing Differences Within and Between Genomes Jill Pecon Slattery	
8:25-8:45	Targeted Pathogen Sequencing Erick Gagne	
8:45-9:00	Best Practices in Multiple Sequence Alignments Jill Pecon-Slattery	
9:00-9:30	Alignment Computer Lab: Part 1 Geneious MSA programs, Mafft, Zoonomia and progressive cactus discussion Jill Pecon Slattery and Erick Gagne	
9:30-10:00	CSU Flash Talk Sue VandeWoude/Laura Bashor	
10:00-10:20	Coffee Break and Meet Invited Speaker	
10:20-10:50	Alignment Computer Lab: Part 2 Geneious MSA programs, Mafft, Progressive Cactus Jill Pecon Slattery and Erick Gagne	
10:50-12:00	The Basics Of Phylogenomic Trees And Interpretation Erick Gagne	
12:00-12:15	Group Projects Sessions	
12:15-1:15	Lunch Provided Onsite	
1:15-3:15	Phylogenomic Reconstruction Lab Using PAUP: jModeltest ML, ME MP, MCMC demo Jill Pecon-Slattery, Erick Gagne	
3:15-3:35	Coffee Break	

3:35-3:50	Introduction to Bayesian Statistics	
	Erick Gagne	
3:50-5:00	Phylogenomic Reconstruction Lab: MrBayes	
	Erick Gagne	
5:00-7:00	FREE TIME AND DINNER	Ram's Horn Dining Center
7:30-8:30	Plenary Speaker	Smith Alumni Center
	Colin Parrish, Cornell University	
8:30-10:00	Social Hour with Invited Speaker	

Day 4: Tree-based Inferences in Host-Pathogen Ecology and Evolution: Clocks, Transmission and Adaptation

August 5, 2021

Smith Alumni Center

7:00 – 8:00	Breakfast	Ram's Horn Dining Center
8:15-8:25	Step 5: Genomics of Host-pathogen Interaction	
8:35-9:30	Lectures: Concepts Of Molecular Clocks and their Disease Applications Erick Gagne	
9:30-10:00	CSU Flash Talk Chris Kozakiewicz	
10:00-10:20	Coffee Break and Meet Invited Speaker	
10:20-12:15	Labs BEAST Erick Gagne	
12:15-1:15	Lunch Provided Onsite	
1:15-2:00	Lecture/Discussion from Guest Speaker Colin Parrish	
2:00-2:30	Phylodynamics and NextStrain Erick Gagne	
2:30-2:45	Lecture: Intro to Selection in Host Genome Jill Pecon-Slattery	
2:45-3:15	Computer Labs: PAML / HyPhy Jill Pecon-Slattery	
3:15-3:25	Short Coffee Break	
3:25-3:50	Computer Labs: PAML and HyPhy	
4:00-6:00	HIKE-Weather Permitting Laura Bashor	
5:30-7:00	FREE TIME AND DINNER (no evening session)	Ram's Horn Dining Center

Day 5: Population Phylogenomics and Landscape Genomics

August 6, 2021

Smith Alumni Center

7:00 – 8:00	Breakfast	Ram's Horn Dining Center
8:15-8:25	Step 4: Applying Genomic Tools Across Populations Jill Pecon Slattery	
8:25-9:30	Population Genomics 101 Chris Funk	
9:30-10:00	CSU Flash Talk Coby McDonald	
10:00-10:20	Coffee Break	
10:20-11:00	Population Genomics 101 (cont) Chris Funk	
11:00-11:30	Host Population Genomics in Disease: Landscape Genomics Chris Funk	
11:40-12:15	Computer Lab: Population Genomics Chris Funk/Coby McDonald	
12:15-1:15	Lunch Provided Onsite/ Group Discussions	
1:15-3:15	Computer Lab: Population Genomics Chris Funk /Coby McDonald	
3:15-3:35	Coffee Break	
3:35-5:00	Computer Lab: Population Genomics Chris Funk / Coby McDonald	
6:00-?	Party-Down Town Fort Collins Location	

DAY 6: Putting it all together: Your Group Projects

August 7, 2021

Smith Alumni Center

7:00-8:00	Breakfast	Ram's Horn Dining Center
8:15-8:20	Step 6: Review of Our Workflow Jill, Bob, Sue, Chris, Mark	
8:20-8:50	Scenario: Group 1	
8:50-9:20	Scenario: Group 2	
9:20-9:50	Scenario: Group 3	
9:50-10:20	Scenario: Group 4	
10:20-10:50	Scenario: Group 5	
10:50-11:20	Scenario: Group 6	
11:20- 12:00	Conclusions and Farewells	