



INTRODUCTION TO MICROBIAL COMMUNITY ANALYSIS
Wednesday, November 14 – Friday, November 16, 2018

The Jackson Laboratory for Genomic Medicine
Farmington, Connecticut

Course Organizers:

Julia Oh, Ph.D., The Jackson Laboratory,
Mark Adams, Ph.D., The Jackson Laboratory and
Kelly LaRue, Ph.D., The Jackson Laboratory

For more information please contact

Amanda Lazarus amanda.lazarus@jax.org (logistics) or Kelly LaRue kelly.larue@jax.org (content)

At the end of this workshop, participants will be able to:

- Explain what the microbiome is and why it is an important research topic
- Identify pitfalls in experimental design
- Contrast the information that can be provided by several microbiome analysis methods
- Execute basic genomic analysis scripts
- Describe new opportunities and future directions of microbiome research

Workshop Assistants: Lauren Long, Bioinformatics Analyst II; Jacqui Benjamino, Postdoctoral Associate – Adams Lab; Preeti Bais, Computational Scientist; Sandeep Namburi, Cloud Systems Analyst; Anne Deslattes Mays, Principal Computational Scientist; Akintunde Emiola, Postdoctoral Associate – Oh Lab; Wei Zhou Bioinformatic Analyst I; Neil Kindlon, Programmer Analyst III;

Wednesday, November 14

9:00 am

Optional Workshop

Introduction to Unix

Dave Mellert, Ph.D., Systems Analyst

Helpers: Anne Deslattes Mays, Ph.D. and Neil Kindlon

- 12:00 pm Lunch on your own
- 1:00 **Optional Workshop**
Introduction to R
Sandeep Namburi, Cloud Systems Analyst
Helpers: Anne Deslattes Mays, Ph.D. and Neil Kindlon
- 4:30 **Participant Introductions**
- 5:00 **Participant Poster Session and Social Hour**
- 6:00 pm Dinner on your own

Thursday, November 15

- 8:30 **Course introduction**
Julia Oh, Ph.D., Assistant Professor
- 8:45 am **Introduction to microbiota and the microbiome**
Mark Adams, Ph.D., Director of Microbial Genomic Services
- 9:30 **Methods and study design**
Julia Oh, Ph.D., Assistant Professor
- 10:30 Break
- 10:45 **Intro to 16S analysis**
Mark Adams, Ph.D., Director of Microbial Genomic Services
- 12:00 pm Lunch provided – set up for computational sessions if necessary
- 1:00 **Workshop**
16S analysis exercise and making basic microbiome plots in R
Jethro Johnson, Ph.D., Postdoctoral Associate - Weinstock Lab
Helpers: Preeti Bais, Jacqui Benjamino and Lauren Long
- 4:00 **Brainstorming session**
- 5:00 **Social Hour**
- 6:00 Dinner on your own

Friday, November 16

8:30 am	Microbial isolates and comparative genomics Mark Adams, Ph.D., Director of Microbial Genomic Services
9:30	Shotgun metagenomic analysis Julia Oh, Ph.D., Assistant Professor
10:30	Break
11:00	Workshop Shotgun metagenomic analysis Jethro Johnson, Ph.D., Postdoctoral Associate - Weinstock Lab Helpers: Preeti Bais, Wei Zhou and Akintunde Emiola
12:00 pm	Lunch provided
1:00	Workshop continued Shotgun metagenomic analysis Jethro Johnson, Ph.D., Postdoctoral Associate - Weinstock Lab Helpers: Preeti Bais, Wei Zhou and Akintunde Emiola
2:00	Statistical Analyses Julia Oh, Ph.D., Assistant Professor
3:30	Break
3:45	Introduction to special topics Julia Oh, Ph.D., Assistant Professor
4:00	Special topics: Single cell metagenomics Akintunde Emiola, Ph.D., Postdoctoral Associate – Oh Lab
4:20	Special topics: Metagenomic SNP tracking and more Wei Zhou, Ph.D., Bioinformatic Analyst I
4:40	Special topics: Viral metagenomics Brandon Albright, Ph.D., Postdoctoral Associate – Weinstock Lab
5:00	Dinner on your own

YOUR VIRTUAL MACHINES WILL REMAIN OPEN UNTIL SATURDAY, NOVEMBER 17 11:59 PM