

Quick Introduction and Introduction to the UC Davis Bioinformatics Core

The **mission** of the Bioinformatics Core facility is to facilitate outstanding omics- scale research through these activities:

Data Analysis

The Bioinformatics Core promotes experimental design, advanced computation and informatics analysis of 'omics' scale datasets that drives research forward.

Research Computing

Maintain and make available high-performance computing hardware and software necessary for todays data-intensive bioinformatic analyses.

Training

The Core helps to educate the next generation of bioinformaticians through highly acclaimed training workshops, seminars and through direct participation in research activities.

UC Davis Bioinformatics Core in the Genome Center

Core Facility Manager

Dr. Matthew Settles

Faculty Advisor

Dr. Ian Korf

Data Analysis Group

Genomics Bioinformatics

Dr. Joseph Fass
Dr. Monica Britton
Nikhil Joshi

Proteomics Bioinformatics

Metabolomics Bioinformatics

Dr. Jessie Li

Biostatistics

Dr. Blythe Durbin-Johnson

Undergraduate Assistants

Research Computing Group

System Administration

Michael Casper Lewis
Richard Feltstykke

Database/Web Programming

Adam Schaal

Undergraduate Assistant

Contacts

- Website: <http://bioinformatics.ucdavis.edu/>
- Computing Issues, including but not limited to
User account questions, equipment failure/malfunction, software install, software failures (not related to use)
helpdesk@genomecenter.ucdavis.edu
- Bioinformatics related questions, including but not limited to
bioinformatic methods questions, software use, data questions
bioinformatics.core@ucdavis.edu
- Bioinformatics training and workshop related questions
training.bioinformatics@ucdavis.edu
- Mailing lists: <http://bioinformatics.ucdavis.edu/contact-us/>

Goals

- End to End understanding of single cell RNA sequencing
- Experimental design
 - Technologies
 - Cost estimation
 - Analysis Workflow
- To work through a complete experiment, starting from raw data to completion, including making a few figures.
- Goal is 30-40% lecture/discussion 60-70% hands-on

Workshop Info

- Internet
 - If your home institution is on eduroam, you should be on already
 - <http://itcatalog.ucdavis.edu/service/eduroam>
 - UCD Guest Wireless
 - <http://itcatalog.ucdavis.edu/service/wireless-guest-access>
- Schedule is loose, we will try and have short breaks, lunch is ~12-1pm then a technology talk
 - Monday – Takara
 - Tuesday – Illumina
 - Wednesday - 10X Genomics

Workshop Info

- Workshop materials posted on github
<https://ucdavis-bioinformatics-training.github.io/2017-September-Microbial-Community-Analysis-Workshop/>
- Course will be conducted on our server and cluster
 - ganesh.genomecenter.ucdavis.edu
 - Cluster usage will be under a workshop reservation
- Everyone should have a username/password combo in their badge.

Schedule at a glance

Wednesday Tuesday 5th

Introductions

Morning Hands on: Intro to Command Line (Joe)

Morning Talk: “What is Bioinformatics?” (Matt)

Early Afternoon Hands on: Running Jobs on the Cluster (Joe)

Late Afternoon Hands On: Installing workshop software and setting the environment

Afternoon Talk: “Intro to Microbial Sequencing” (Matt)

Thursday August 6th

dbcAmplions: Processing Sequence Reads Through abundance Tables

Afternoon Talk: “Host Microbe Systems Biology Core” (Matt)

Schedule

Friday September 8th

Morning Hands on: Intro to R (Jessie)

Morning Talk: “Oligotyping” (Peter Henry)

Afternoon Hands on: Microbial Community Analysis with R (Matt)

Closing