UCDAVIS Bioinformatics Core

Quick Introduction and Introduction to the UC Davis Bioinformatics Core

UCDAVIS 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.

UCDAVIS Bioinformatics Core

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 Feltstykket

Database/Web Programming

Adam Schaal

Undergraduate Assistant

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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

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Workshop Info

- Internet
  - If your home institution is on eduroam, you should be on already **hopefully**
  - Guest Wireless
- Schedule is loose, we will try and have short breaks, lunch is ~12-1pm then a technology talk
  - Monday – Takara
  - Tuesday – 10X Genomics
  - Wednesday - Illumina

Workshop Info

- Workshop materials posted on github
  https://ucdavis-bioinformatics-training.github.io/2017_2018-single-cell-RNA-sequencing-Workshop-UCD_UCB_UCSF/

- Course will be conducted on the UCD Bioinformatics Core's 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.

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Schedule at a glance

Day 1

Introductions

Logging in Introductory material (command line)

Technology talk (Eric Chow, UCSF)

Lunch and Technology talk by Takara

Continued Introductory material (command line/cluster)

Generating Expression Tables (10X data)

Day 2

Introduction to R

Dataset Description

Lunch and Technology talk by 10X Genomics

Analysis with Seurat

Day 3

Continued analysis with Seurat

Lunch and Technology talk by Illumina

Continued analysis with Seurat