QIIME (+ Linux) Workshop 2016

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Day 1: Introduction to Linux

Date: July 8th, 2016, 9 am – 1 pm
Instructors: Jessica Kirkpatrick (HPCBio), Jenny Drnevich (HPCBio)
Assistant: Shoham Das
Location: 607 IGB

Class Materials:
- Presentation
- Linux cheat sheet
- Getting on a UNIX-based terminal
- Appendix
- Class Video

Additional Linux Resources:
- Beginner Linux - self-guided tutorials for extra practice
  - Tutorial from the book *UNIX and Perl to the RESCUE!*
  - Parts 1 and 2 cover UNIX
    - http://korflab.ucdavis.edu/Unix_and_Perl/current.html#part2
  - SIB tutorial
    - If it asks you to log in, just log in as a “guest user”
    - Click on “UNIX elearning module” at the bottom to get started
  - University of Surrey tutorial
    - http://www.ee.surrey.ac.uk/Teaching/Unix/
  - Ryan’s Tutorials
    - http://ryanstutorials.net/linuxtutorial/
- Linux Books
  - *UNIX and Perl to the RESCUE!* by Keith Bradnam & Ian Knorf
  - *Developing Bioinformatics Computer Skills* by Cynthia Gibas & Per Jambeck
  - *Linux Pocket Guide* by Danial J. Barrett
  - *Beginning Shell Scripting* by Eric Foster-Johnson, John C. Welch, & Micah Anderson
  - *Learning the bash Shell* by Cameron Newham
  - *bash Cookbook* by Carl Albing, JP Vossen, & Cameron Newham
- Linux-related Software

Day 2: Introduction to QIIME & Preprocessing

Date: July 11th, 2016, 9 am – 1 pm
Instructors: Jessica Kirkpatrick (HPCBio), Chris Wright (CBC), Jenny Drnevich (HPCBio)
Assistant: Shoham Das
Location: 607 IGB

Class Materials:
- Slides:
  - Chris Wright’s presentation
  - Introduction to QIIME and pre-processing: presentation
- Example dataset files:
  - Condensed sequencing report
  - FASTQC report for forward reads of archaea dataset

Additional Files
- Upstream analysis homework
- Class Video
- Detailed QIIME tutorial

Day 3: Basic QIIME Analyses

Date: July 13th, 2016, 9 am – 1 pm
Instructors: Jessica Kirkpatrick (HPCBio), Jenny Drnevich (HPCBio)
Assistant: Shoham Das
Location: 607 IGB

Class Materials:
- Slides:
  - Basic analyses in QIIME: presentation

Additional Files
- Full analyses homework
- Full analyses homework ANSWER KEY
The following software allows remote access from a Windows computer to a Linux based terminal. Mac already has a UNIX-based terminal pre-installed. You can find it in Applications -> Utilities -> Terminal
- **MobaXterm**: [http://mobaxterm.mobatek.net/](http://mobaxterm.mobatek.net/)
- **PuTTY**: [http://www.putty.org/](http://www.putty.org/)

### Biocluster Resources
- Biocluster help page
- Campus cluster help page
- How to submit a cluster job
- qsub script generator

### Day 4: Statistical Analyses

**Date**: July 15th, 2016, 9 am – 1 pm

**Instructors**: Jenny Drnevich (HPCBio), Jessica Kirkpatrick (HPCBio)

**Assistant**: Shoham Das

**Location**: 607 IGB

### Class Materials:

### Slides:

- [Statistical Analyses in QIIME - updated](#)

### Additional Links

- [Class Video](#)
- [QIIME 2.0 site; blog announcement](#)
- [McMurdie and Holmes, 2014](#)
- [Bioconductor workflow for full microbiome analyses](#)