BMS Bootcamp: Coding Workshop Resources

Programming and Pizza: Python/R: http://bit.ly/programmingandpizza
Thurs, Sept 21 4-6pm in Mission Hall 1302

Challenge Yourself

1. Write a script which randomly generates a DNA sequences of a given length. Expand your script to give the complementary sequence. Remember to follow the pipeline: choose your algorithm, choose your language, prototype, debug, and keep records.
2. Try the "Python Village" challenges and beyond at http://rosalind.info/problems/locations/
3. Dive deeper into the expression dataset we analyzed: http://www.cureffi.org/2013/08/23/gene-expression-analysis-qc-pipeline-in-r
4. Expand even further using the command line, R, GO analysis, and a more statistical approach (uses our same dataset): http://bioinfo.vanderbilt.edu/zhanglab/lectures/AB2015_Project1_complete.docx

Campus Resources

Library: https://www.library.ucsf.edu/help/classes
Cell Hackers: https://www.facebook.com/cellhackers
Bioinformatics Core: http://cores.ucsf.edu/bioinformatics-analysis.html
BMI Program Courses: http://bioinformatics.ucsf.edu/degree-program/courses
Mini-courses: http://minicourses.ucsf.edu/

Online Resources

General
Online interpreter: http://repl.it
Before writing your first script: http://electronician.hubpages.com/hub/Programming-Basics-for-Beginners
Whenever you have a question, someone else has already answered it at: http://stackoverflow.com/
Don't fear the command line: https://www.codecademy.com/courses/learn-the-command-line

Python Intros
20-minute intro to Python: https://docs.python.org/2/tutorial/
Crash course in Python for Scientists: http://nbviewer.ipython.org/gist/rpmuller/5920182
Video tutorial for Python: https://beta.oreilly.com/learning/analyzing-data-with-python
Join the community: https://www.python.org/community/

Python Courses
Video lectures: https://www.coursera.org/course/pythonlearn
Interactive tutorials: https://www.codecademy.com/tracks/python
Online book: http://learnpythonthehardway.org/book/
Full series, including databases, tools, python, and command line: https://www.coursera.org/specialization/genomics/41

R Intros
20-minute intro to R: https://cran.r-project.org/doc/contrib/Torfs+Brauer-Short-R-Intro.pdf
Statistics introduction: https://www.teamleada.com/tutorials/introduction-to-statistical-programming-in-r
Intro to Bioconductor: http://manuals.bioinformatics.ucr.edu/home/R_BioCondManual
Join the community: http://www.r-bloggers.com/

R Courses
1-month course: https://www.coursera.org/course/rprog, which uses swirl http://swirlstats.com/
Interactive tutorial: https://www.datacamp.com/courses/free-introduction-to-r
Interactive book: http://tryr.codeschool.com/

Package Managers
Homebrew for Mac: http://brew.sh/
Chocolatey for Windows: https://chocolatey.org/
Synaptic for Ubuntu: https://apps.ubuntu.com/cat/applications/synaptic/