Big Genomic Data Skills Training for Professors
The Jackson Laboratory for Genomic Medicine (JAX-GM)
Farmington, Connecticut

May 21-25, 2018

SAMPLE SCHEDULE

Monday, May 21
8:00am Registration
8:30am Welcome and Introduction
9:00am Introduction to Data Science with Biological Emphasis
10:00am Introduction to High Throughput Sequencing Technologies
11:00am Hands on Work: Setting up Computing Infrastructure and Introductions to Galaxy, Genome Space, IGV, Gene Pattern, R, and Slack. Setting up of basic tools.
12:00pm Lunch
1:00pm Introduction to Linux
2:30pm Essential Statistical Analysis
3:30pm Break
4:00pm Curricular Discussion – Presentation and Discussion of UG courses in Genomics, presentation of previous and existing syllabi
5:00pm RNA-sequencing Seminar
6:00pm Light Dinner
7:00pm Evening Lecture

Tuesday, May 22
8:30am RNA-sequencing Introduction
9:00am Module #1: RNA-sequencing as Measurement Tool; Hands-on Work
10:00am Break
10:30am Module #1: Hands-on Work continued
12:00pm Lunch
1:00pm Module Debrief: Lessons learned, Q & A.
1:30pm Gene Set Enrichment and Pathway Analysis
2:30pm Hands-on Work; Advanced and Derived RNAseq Analysis
4:00pm Break
4:30pm Module #2: Variant Discovery in Genomic Sequence; Hands-on Work; Mutation and Functional Analysis in R
Wednesday, May 23
8:30am    Debrief on Module #2 Variant Calling: Lessons learned, Q & A.
9:00am    Exome Sequencing for Variant Discovery
10:00am   Module #3: Exome Sequencing Variant Discovery in Galaxy
12:00am   Lunch
1:00pm    Introduction to Microbiome
2:00pm    Hands-on Work: Microbiome
3:30pm    Break
4:00pm    Curricular Discussion #2
4:30pm    Cloud Resources and Galaxy

Thursday, May 24
8:30am    Data in Context
9:30am    Network Modeling
10:30am   Network Modeling short exercises
12:00am   Lunch
1:00pm    Data Standards and Best Practices Data Problems: When bad things happen in genomic analysis
2:00pm    Introduction to ChIP-seq
4:00pm    Break
4:30pm    Module Debriefing on Exome, Microbiome, Network, and ChIP-seq; Open Discussion on Participant Needs and Data
5:30pm    Reception Dinner

Friday, May 25
8:30am    Integrated Modeling of Genetic and Genomic Data
9:30am    Running UG Courses in Genomics
11:00am   Cloud Environments and Web Service Grants
12:00pm   Lunch
1:00pm    Collaborative Discussion, Next Steps, and How to Support UG Implementations