



PATRIC/RAST Workshop

August 14 – 16, 2017

LOCATION

Argonne National Laboratory
Building 240, Room 1404/1405
Argonne, IL 60439

AGENDA

Monday, August 14, 2017

9:00 am **Register for PATRIC Account, Overview (www.patricbrc.org)**

10:00 am **Assemble a Genome in PATRIC and Data Upload**

- Uploading reads and read libraries
- Selecting assembly methods for comparison
- Queuing jobs and retrieving results
- Analyzing assembly output and comparisons

11:00 am ***Break***

11:15 am **Annotate a Genome in PATRIC Using RASTtk**

- Uploading or selecting contigs in workspace
- Selecting genome metadata and annotation options
- Queuing jobs and retrieving results
- Previewing an annotated genome

12:00 pm **Lunch**

1:00pm **Proteomic Comparison**

- Selecting genomes for a study
- Visualizing compared genomes
- Downloading and analyzing the results

2:00 pm **Break**



PATHOSYSTEMS RESOURCE INTEGRATION CENTER

- 2:15 pm** **Comparative Genomics: Protein Families and Pathways**
- Creating a genome group
 - Comparing by region, genes, proteins
 - Comparing pathways
 - Visualizing with heatmap viewer and downloads
 - Finding specific differences, downloading and saving results into private workspace
- 3:45 pm** **Running PATRIC's Tree Building Service**
- Creating ingroup genomes
 - Creating outgroup genomes
 - Submitting Tree-building job
 - Downloading newick file
 - Viewing the tree
- 4:30 pm** **Question and Answer Session and Hands-on Work**
- 5:00 pm** **Day 1 Adjourn**

Tuesday, August 15, 2017

- 9:00 am** **BLAST at PATRIC**
- Choosing BLAST database
 - Adjusting parameters
 - Submitting BLAST job
 - Downstream analysis of BLAST results
- 9:45 am** **Similar Genome Finder service**
- Uploading genome sequence
 - Submitting job
 - Viewing results
- 10:00 am** **Break**
- 10:15 am** **RNA-Seq Pipeline, Downloading Data into PATRIC and Differential Expression**
- Uploading RNA-seq data
 - Selecting genomes and mapping
 - Downloading and using data in PATRIC



- 11:15 am** **Expression Import Service**
- Uploading data
 - Identifying reference genomes
 - Submitting import job
 - Monitoring job progress
- 12:00 pm** **Lunch**
- 1:00 pm** **Comparative Transcriptomics: Exploring public expression data and private data in PATRIC**
- Locating expression import job
 - Exploring public gene expression in datasets available in PATRIC
 - Manipulating expression filter
 - Manipulating heatmap
 - Expression and correlation for specific genes in PATRIC
- 2:00 pm** **SNP and MNP Variation service**
- Uploading reads data
 - Selecting genomes and mapping
 - Downloading and using data in PATRIC
- 3:00 pm** **Tn-Seq Service**
- Uploading data
 - Running the service
 - Submitting the Tn-Seq job
 - Downloading and exploring the data in PATRIC
- 3:30 pm** **Building a Metabolic Model**
- Building metabolic reconstruction, FBA model construction
 - Analyzing media types, gap filling, growth, predicting essential genes, knock outs, etc.
 - Comparing models of genomes
- 4:30 pm** **Question and Answer Session and Hands-on Work**
- 5:00 pm** **Day 2 Adjourn**



Wednesday, August 16, 2017

9:00 am Introduction to PATRIC Command Line Interface (CLI)

11:00 am Break

11:15 am Work with Your Private Data

12:00 pm Lunch

1:00 pm Work with Your Private Data

3:00 pm Question and Answer Session and Hands-on Work

4:00 pm Workshop Concludes