PATRIC

PATHOSYSTEMS RESOURCE INTEGRATION CENTER

PATRIC Workshop

August 14-17, 2017

LOCATION
Argonne National Laboratory
Building 240, Room 1406/1407
Argonne, IL 60439

AGENDA
Monday, August 14, 2017

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

10:00am   **Assemble a Genome in PATRIC and Data Upload**
Fangfang Xia
- Uploading reads and read libraries
- Selecting assembly methods for comparison
- Queuing jobs and retrieving results
- Analyzing assembly output and comparisons

11:00am   *Break*

11:10am   **Annotate a Genome in PATRIC Using RASTtk**
Rebecca Wattam
- Uploading or selecting contigs in workspace
- Selecting genome metadata and annotation options
- Queuing jobs and retrieving results
- Previewing an annotated genome

12:00pm   *Lunch*

1:00pm   **Proteomic Comparison**
Rebecca Wattam
- Selecting genomes for a study
- Visualization of compared genomes
- Download and analysis of results

2:00pm   *Break*

2:15pm   **Comparative Genomics: Protein Families and Pathways**
Rebecca Wattam
- 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

3:45pm   **Running PATRIC's tree building service**
Rebecca Wattam
- Creating ingroup genomes
- Creating outgroup genomes
- Submitting Tree-building job
- Downloading newick file
- Viewing the tree

4:30pm   **Question and Answer Session and Hands on Work**

5:00pm   *Adjourn*

Tuesday, August 15, 2017

9:00am   **BLAST at PATRIC**
Rebecca Wattam
- Choosing BLAST database
- Adjusting parameters
- Submitting BLAST job
- Downstream analysis of BLAST results

9:45am   **Similar Genome Finder service**
Robert Olson
- Uploading genome sequence
- Submitting job
- Viewing results

10:00am   *Break*

10:15am   **RNA-Seq Pipeline, Downloading Data into PATRIC and Differential Expression**
Andrew Warren
- Uploading RNA-seq data
- Selecting genomes and mapping
- Downloading and using data in PATRIC

11:15am   **Expression import service**
Andrew Warren
- Uploading data
- Identifying reference genomes
- Submitting import job
- Monitoring job progress

12:00pm   *Lunch*

1:00pm   **Comparative transcriptomics: Exploring public expression data and private data in PATRIC**
Andrew Warren
- 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

2:00pm   **SNP and MNP Variation service**
Fangfang Xia
- Uploading reads data
- Selecting genomes and mapping
- Downloading and using data in PATRIC

3:00pm   **Tn-Seq service**
Andrew Warren
- Uploading data
- Running the service
- Submitting the Tn-Seq job
- Downloading and exploring the data in PATRIC

3:30pm **Building a metabolic model**
Robert Olson
- Building metabolic reconstruction, FBA model construction
- Analyzing media types, gap filling, growth, predicting essential genes, knock outs, etc.
- Comparing models of genomes

4:30pm **Practice Question/Answer**

5:00pm *Adjourn*

Wednesday, August 16, 2017

9:00am **Introduction to PATRIC command line interface**
Robert Olson

11:00am *Break*

11:15am **Work with your private data**

12:00pm *Lunch*

1:00pm **Work with your private data**

3:00pm **Practice Question/Answer**

4:00pm *Adjourn*