Bioinformatics Core

Jyothi Thimmapuram
Purdue University, jyothit@purdue.edu

Purdue University Office of Research and Partnerships

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Bioinformatics Core
http://www.bioinformatics.purdue.edu/
Young Hall, Rm 1022
Dr. Jyothi Thimmapuram (765-496-6252; jyothit@purdue.edu)

As a central facility providing bioinformatics services to the on- and off-campus research community, the Bioinformatics Core has developed the expertise to store and analyze various types of biological data. The Core staff provides assistance in analyzing Next Generation Sequencing data, including de novo assembly, gene prediction, annotation, mapping to reference genome, SNP and SSR detection, CNV analysis, small RNA/miRNA, RNA-Seq, ChIP-Seq/MeDIP-Seq/MNase-Seq, metagenomics and metatranscriptomics and amplicon analyses.

The core is partnering with the Purdue Cyber Center, Rosen Center for Advanced Computing and Genomics Core to provide a robust, redundant, accessible and distributed hardware computational platform. The system includes:

- multicore servers based on Virtual Machine technology for webpage and computational tool execution;
- RAID and redundant storage, along with tiered storage options for varying levels of data integrity (high performance and redundancy, moderate cost, no backup, offline, etc.), to provide the flexibility to define data retention policies that balance the needs of the researchers and system administrators;
- high-performance computing clusters for computationally intensive tasks.

The Core has internal system administration support and leverages the Information Technology at Purdue (ITaP) department for broader computational support. The campus is connected to multiple high-speed Internet backbones including Abilene/Internet2 and I-Light to facilitate data transfer.

The Bioinformatics Core has the hardware and software in place and personnel who have experience in bioinformatics, programming, and database and system administration. The Bioinformatics Core is uniquely positioned in handling various ‘-omics’ data analyses and to develop various workflows that are required for project specific analyses.

Authors: Jyothi Thimmapuram and the Purdue University Office of Research and Partnerships

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