2 hour Hands On bioinformatics workshop: "Accessing and using the vast the tools of Bioinformatics."

Presented by W. Kelley Thomas, Susan Bown, Joseph Sevignhy, Teresa Shippy, Devin Thomas

Description: This workshop is designed to provide a hands-on experience accessing and using core tools of bioinformatics in the command-line environment. We will follow the program developed by New Hampshire- and Kansas-INBRE that promotes the development of broad-based core expertise in the analysis of "Big Data" that can be implemented as part of an undergraduate curriculum or in a workshop format. Participants will each work on a novel microbial genomic dataset to assemble, annotate and compare their genomes to known strains. **Participants are asked to pre-register and will receive server access and pre-workshop training materials.**

Session theme or topic: Bioinformatics

Session format (Lecture, facilitated discussion, panel discussion, Q&A):   2 hour Hands On bioinformatics workshop: "Accessing and using the vast the tools of Bioinformatics."

3 anticipated participant learning outcomes:
•   Accessing core bioinformatics resources
•   Implementing bioinformatics programs in the Command-line environment
•   Bioinformatic best practices for ensuring rigor and reproducibility

Intended audience: Students, Faculty

Name, title, Institution/bio for each facilitator/presenter:
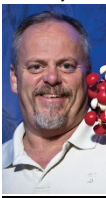
W. Kelley Thomas
Director, Hubbard Center for Genome Studies, Professor, Dept. of Molecular, Cellular, and Biomedical Sciences,
University of New Hampshire

Throughout his career, W. Kelley Thomas has worked at a disciplinary interface. From his undergraduate field biology projects, to current work applying and innovating genomic tools to study genetic errors and biodiversity. As director of the Hubbard Center for Genome Studies at the University of New Hampshire he established new DNA sequencing technologies and the associated bioinformatics tools. Nine years ago, he became involved with NH-INBRE and is the director of the Bioinformatics and Genomics Core of that program. In that role he supports genomic and bioinformatics research and training at primarily undergraduate and lead institutions in New Hampshire. Most recently, I have become focused on the need for broad-based, effective training and curriculum development in bioinformatics.

Susan Bown
Professor
Kansas State University

Sue Brown's studies in genetics, genomics and bioinformatics are inspired by a lifelong fascination with DNA. She pioneered the use of RNAi to study gene function in the red flour beetle, Tribolium castaneum. She has spent much of her career developing genetic and genomic tools for this global pest of stored grain, which is now a model organism for studies in development and pest management. She led an international consortium of researchers that sequenced the Tribolium genome, the first for a beetle. She teaches courses in genetics and bioinformatics at KSU and Directs the KINBRE Bioinformatics Core.

Joseph Sevignhy
Graduate Student, Molecular Evolutionary Systems Biology Program
University of New Hampshire

Joseph is a Ph.D. candidate in the Molecular Evolutionary Systems Biology Program at UNH. Joseph has several years of training in bioinformatics and leading workshops for developing core skills. He will lead the implementation of tools for the assembly and annotation of microbial genomes.

Photo coming

Teresa Shippy
Bioinoformatics Specialist
Kansas State University

Teresa Shippy is a bioinformatics specialist in the Kansas-INBRE Bioinformatics Core. She received her PhD in Biology from Kansas State University and then spent 10 years researching developmental genetics in the red flour beetle, Tribolium castaneum. She became interested in genomics when the Tribolium genome was sequenced and is now focused on helping other researchers with their bioinformatics needs. She has taught several bioinformatics training workshops and is also a certified instructor for The Carpentries.

Devin Thomas
Graduate Student, Computer Science Program
University of New Hampshire

Devin is a Master's student in the Computer Science Program at UNH. Devin has multiple years of experience working with regional faculty to implement curricula in bioinformatics. Devin specializes in the implementation of tools to study diversity in biological systems using molecular tools.

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