

Core Bioinformatics curriculum development and Research Support

Presented by Susan Brown, W. Kelley Thomas, Teresa Shippy

Description: This workshop is designed to present our approaches to developing bioinformatics content that is adaptable from short workshops to full courses as part of the INBRE goal to engage large numbers of undergraduate students in authentic scientific discovery using modern tools of genetics and bioinformatics. The core of these modules focus on introducing students to BASH, and the bioinformatics tools that they can run in BASH. We will describe the modules, tutorial, and class materials developed at UNH and adapted for use by KINBRE. The workshop will include a time for discussion.

Session theme or topic: Bioinformatics

Session format (Lecture, facilitated discussion, panel discussion, Q&A): Facilitated Discussion, Lecture

3 anticipated participant learning outcomes:

- Using available bioinformatics modules
- Creating bioinformatics modules
- Adapting current curricula to include bioinformatics

Intended audience: Students, Faculty

Name, title, Institution/bio for each facilitator/presenter:



Susan Brown
Professor
Kansas State University

Susan J Brown PhD, 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.



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.

Photo coming

Teresa Shippy
Bioinformatics 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.
