

Summer 2006 WV-INBRE Bioinformatics Workshop

July 11-12

Marshall University

The first day two National Center for Biotechnology Information (NCBI) Mini-Courses will be offered: one on Entrez-Gene and one a problem-based course using NCBI Web-based resources. The second day will be the structure course. The course instructors are biologists on the User Services staff of the NCBI.

July 11 am: Entrez-Gene QuickStart

- ❖ The advantages of Entrez Gene: efficient searching options, availability of gene-specific information for all completely sequenced genomes, including bacteria and viruses.
- ❖ Use Entrez Gene to find gene-based information such as chromosome location, sequence, expression, structure, function, and homology data.
- ❖ How to obtain information about a human gene--its mRNA and genomic sequence, gene structure (exon-intron locations), function and phenotypes associated with mutations.
- ❖ Determine whether the SNPs in the coding region of a gene are known to alter the function of the protein product.

July 11 pm: Making Sense of DNA and Protein Sequences

- ❖ Find a gene within a eukaryotic DNA sequence.
- ❖ Predict the function of the implied protein product by seeking sequence similarities to proteins of documented function using BLAST and other tools.
- ❖ Find a 3D protein modeling template using a Conserved Domain Database Search.

July 12: Exploring 3D Molecular Structures Using NCBI Tools

- ❖ Find structural neighbors using VAST and functional elements within structures using the Conserved Domain Database and RPS-BLAST
- ❖ Analyze a 3D structure, highlight features such as bound ligands and active site residues, create customized annotations, and save and export a figure
- ❖ Find and evaluate a 3D modeling template for a protein by creating multiple sequence alignments using either sequence or structure similarity searches

These workshops are open to WV-INBRE participants. There is no charge to participate, however registration is required. All instruction will be held in computer labs. There will be lecture, hand-on work and problem sessions. The instructor will be able assist with advanced questions during the lab sessions. Attendance is limited to 20 per site. Registration information is given on the following page.

Some travel support is available. Details are given in the table on the following page.

Travel support information

Institution	Travel support source & contact
WV-INBRE Network Research Institutions: Alderson-Broaddus College Fairmont State University West Virginia State University West Liberty State College Wheeling Jesuit University	Support from the institution's Research Support funds. Institutional official
WV-INBRE Network Outreach Institutions: Bluefield State College Concord University Davis and Elkins College Shepherd University West Virginia Wesleyan College	Support from Outreach Core Dr. Mark Reasor Outreach Core Director (mreasor@hsc.wvu.edu).
WV-INBRE Extended Outreach Institutions: Bethany College Glenville State College Mountain State University Salem International University University of Charleston	Support from Bioinformatics Core Dr. Mary Davis Bioinformatics Core Director (mdavis@hsc.wvu.edu).

Registration Information

To register, send the information below to Dr. Mary Davis, Bioinformatics Core Director
(mdavis@hsc.wvu.edu).

Name:

Contact information: email:

Department and/or School:

College/University

Indicate role(s) in WV-INBRE:

faculty

faculty fellow

student

student intern