

# MidSouth Bioinformatics Center at UALR

July 22, 2008

ISMB 2008  
Bioinformatics Core Facilities  
Toronto, ON

# About the MBC

- Founded in 2002 with start-up package
- Supported financially through US NIH NCRRT's INBRE grant to Arkansas
  - A collaboration between the Medical School (UAMS), UALR, and UA Fayetteville
  - Focused on supporting biomedical research at seven primarily undergraduate institutions
  - Grant currently in eighth year of support
    - Renewal – if funded – would start 5/1/10

# INBRE Bioinformatics Core

- "... a statewide research and educational resource to give undergraduate faculty and students access to the computational tools needed for multidisciplinary biomedical research."
- Objectives in support of:
  - UAMS/UALR Bioinformatics Grad Program
  - Workshops and biomedical research opportunities for computational undergraduate students
  - High-end computational power
  - Bioinformatics needs of UGIs
  - Research collaboration between institutions



# MBC Budget/Staffing

- Budget of ~\$400K/yr (used to be more!)
  - Over half goes to salaries
  - Quarter goes to indirects
  - Started with ~\$200K for hardware
    - Now spend about \$30K/year on hardware/software
- Staff
  - Full-time Technical Director; half-time Admin
  - 6-8 Graduate Assistants with 4-20 hours/week work assignments

# MBC Hardware/Software

## ■ Hardware

- Mid-size servers, graphics workstations, clusters, some grid computing
- "One of each kind"

## ■ Software

- Mostly open-source software
  - Including hosting student-developed projects
- Sun/Oracle educational licenses
- Small number of commercial licenses being phased out

# MBC Support of Grad Program

- Assistance with projects (tools, websites)
- Tools for classes
  - e.g., Mr. Bayes queuing system for Phylogenetics
- Workshops for students
- Technical training (e.g., GAs)
- Limited conference travel/"road-trip" funding
- Student admissions secure website
  - Expanding into student management site



# MBC Workshops

- LAMP Workshop (Linux, Apache, MySQL, Perl), UALR, Aug 16-18
- NCTR ArrayTrack Workshop, UALR, Sep 7-8
- ARBIOS Picnic and Networking Meeting, N. Little Rock, Sep 14
- NCBI Genomics Workshop, UAMS, Sep 21-22
- MidSouth Bioinformatics Center Open House, UALR, Oct 29
- Student Road Trip for INBRE Fall Research Symposium, Fayetteville, Nov 8-10
- Perl Workshop, UA Monticello, Nov 16
- R Statistical Analysis and Programming Workshop, UALR, Mar 15
- Applications of Mass Spectrometry to Protein Identification and Proteomics: Peptide Fingerprinting and Sequencing, UAMS, Apr 4

# MBC Outreach

- Bioinformatics consulting to students, educators, researchers, including some high school students
- Support MidSouth Computational Biology and Bioinformatics Society ([www.MCBIOS.org](http://www.MCBIOS.org))
- Collaborate with the Great Plains Networks' Biosciences Group
- Work with state and regional computational/networking groups
- Develop customized bioinformatics workstations for UGs
- Provide letters of support and partial funding in collaborative grants
- <http://bioinformatics.ualr.edu>



# MBC "Issues"

- 90% of funding support from one source (NIH)
- "Limited" revenue sources from "services"
  - Usually after a "phase 0" collaboration, we might get included in follow-on funding request
- Unable to support most commercial software
  - Though we constantly get such requests
- No biotechnology in-house
  - Don't work directly with biotech cores
  - We do help with analysis

# MBC Successes

- Do a lot with very limited resources
- Support a great bioinformatics graduate program
- Connect many interested parties with resources/collaborators
- Provide a computational facility that supports most of our clients' needs
  - 60+ users/80+ projects
  - Test bed for more computationally-intensive applications which can be moved to supercomputer platforms if necessary