

NIH Funds Next Generation Biology Workbench For Biotechnology And Bioinformatics Research At SDSC

May 5, 2005

Ashley Wood

The San Diego Supercomputer Center announced today that it has received \$2.2 million from the National Institutes of Health to provide a cutting-edge, web-based research resource free of charge to biology researchers, educators and students nationwide. The effort, dubbed the Next Generation Biology Workbench, builds on the "Workbench" concept introduced more than a decade ago by SDSC researcher Dr. Shankar Subramaniam to provide broad access to many biology software tools and data resources through a single web-based interface.

"The Next Generation Biology Workbench promises to be not only a superb resource for biology research and teaching, but a leading-edge exemplar of fully-featured Web-based computing. This is an example of computational biologists leading the way to establish new paradigms in computing for all disciplines," said Eric Jakobsson, director of the Center for Bioinformatics and Computational Biology at the National Institute of General Medical Sciences, part of NIH.

"The original Biology Workbench provided easy access to technology for biology researchers," said SDSC director Fran Berman. "Such enabling technologies provide researchers critical tools for new discovery. The Next Generation Biology Workbench continues in this tradition and will increase the usefulness and expand the number of tools available to a world-wide community of biologists."

The current workbench allows free access to 65 tools and 32 databases for more than 32,000 active users. Users access the system more than 20,000 times a month, submitting in excess of 120,000 requests for analysis, or "jobs."

"I have been using Biology Workbench on a regular basis for the last 3 to 4 years," said Vanderbilt University assistant professor, Mark de Caestecker. "It has proved (to be) an invaluable tool for the analysis and design of gene and protein constructs using in a range of different experiments in my laboratory...the Biology Workbench provides the most comprehensive and easy to use applications that I have come across."

In addition to its tools for researchers, the Next Generation Biology Workbench program will have a component for students and teachers. SDSC researchers will partner with colleagues at National Center for Supercomputing Applications to integrate this program called the Student Biology Workbench. Like the original, the Next Generation Biology Workbench will continue to be a free resource for students and teachers, offering access to data, data storage, software tools and computational resources to mine the information in many popular protein and nucleic acid sequence databases. The NIH funding will support the construction of up-to-date features such as improved user interfaces, a flexible, modular and expandable architecture.

"There have been huge leaps in the technologies used in building cyberinfrastructure since the original workbench was created," said Mark Miller, project leader. "The NIH funding will allow us to build the next generation workbench for the Biology researcher of the next decade, using advanced cyberinfrastructure tools. It will include enhanced visualization and data management capabilities, but will continue to provide access and performance to users with only a dial-up modem. This means users can pose more sophisticated questions

without access to sophisticated computing resources." A beta-release of the Next Generation Biology Workbench is planned in April, 2006.

For more information, visit the Next Generation Biology Workbench site at www.ngbw.org.

Media contacts: Greg Lund, SDSC Communications, (858) 534-8314 or Ashley Wood, SDSC Communications, (858) 534-8363