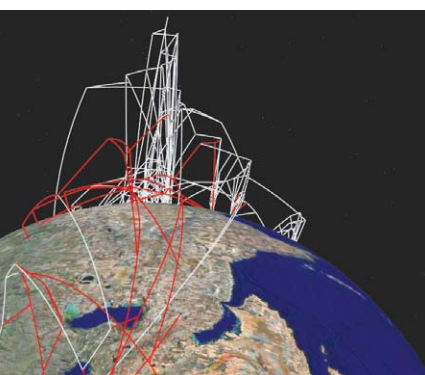


Scholarship initiative to boost bioinformatics statewide

below: A prime example of bioinformatics research, this visualization depicts the westward spread of strains of the avian influenza virus (H5N 1) since its origins in Asia. (Janies et al. 2007)



Ohio ranks first in the Midwest and fourth-best nationally in the biosciences, according to a 2008 Business Facilities Magazine report. And, while Ohio annually produces more than 18,000 bioscience graduates, the labor needs of the industry remain unmet, especially in the growing specialty of bioinformatics. Bioinformatics merges biology, computer science and information technology into a single biosciences discipline that relies on supercomputing to analyze large amounts of data.

A new statewide scholarship initiative created the Ohio Consortium for Bioinformatics to attract and graduate 345 bioinformatics students over five years. The consortium is funded by the Ohio Board of Regents through the Choose Ohio First program, one component of the Ohio Innovation Partnership created by the Ohio General Assembly to attract and graduate more than 2,000 students in science, technology, engineering and mathematics.

To support the effort, the Ohio Supercomputer Center is developing cyberinfrastructure applications for bioinformatics and supplying software and other resources. The Ralph Regula School of Computational Science is developing a shared bioinformatics curriculum, and industries will provide internship, co-op and mentorship opportunities.

Ohio University's Lonnie Welch, Ph.D., and OSC's Terry Lewis lead the consortium's steering committee. In 2006, they co-founded the Ohio Collaborative Bioinformatics Conference (OCCBIO), an annual interdisciplinary forum they coordinate to promote discussion of methods, research findings and experiences.

These initiatives will make Ohio a national leader and position the state to better compete for federal research funding from sources such as the National Institutes of Health, National Science Foundation and Department of Defense. ■

Project lead: Lonnie Welch, Ph.D., Ohio University

Research title: Ohio Consortium for Bioinformatics, Choose Ohio First scholarship program

Funding source: Ohio Board of Regents

OSU scientists make BIG contributions to cancer research

Project lead:

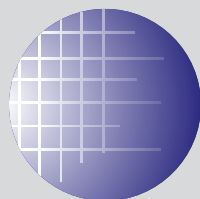
The Ohio State University
Department of Biomedical
Informatics

Research title:

High performance
algorithms for scientific
applications

Funding source:

National Cancer Institute



caGrid

As the Knowledge Center for caGrid, researchers at The Ohio State University's Comprehensive Cancer Center are using their expertise to develop software infrastructure and hardware resources that may speed cancer research discoveries. The Knowledge Centers are part of the National Cancer Institute's Cancer Biomedical Informatics Grid (caBIG™) program, an information network that provides cancer researchers, physicians and other participants with the ability to share basic-science, clinical-trials, imaging and other research data and analyses. The caGrid Knowledge Center provides expertise and serves as a resource on the network's infrastructure for the caBIG community, including assistance with community projects to ensure effective use of caGrid.

In close coordination with the caBIG leadership, OSU's Department of Biomedical Informatics team works as the lead developer for the caGrid infrastructure. In addition to providing development assistance, BMI provides technical oversight and guidance for caGrid architecture and implementation. The team has developed several core components of caGrid, including the GAARDS security infrastructure, the Introduce toolkit for caGrid service development and deployment, the caGrid data services infrastructure and the metadata management infrastructure.

OSC supports this effort by providing the caGrid infrastructure and key bioinformatics software on its IBM Cluster 1350, as well as dedicating significant supercomputer cycle allotments to bioscience users around Ohio and the nation. The availability of this resource at OSC, along with key bioinformatics applications/tools and the caGrid system, enables researchers to carry out analyses and information integration at scales that were previously impossible. ■