



ABSTRACT

The Bio-Information Technology (Bio-IT) Facility of the Biotechnology Resource Center (BRC) provides desktop and network support, LIMS development and support, and software access and licensing support, to the BRC core facilities, to individual investigators and academic units of the university community, and to outside investigators. The facility also provides consultation for bio-IT solutions and offers seminars, educational workshops and training on software tools.



OVERVIEW

Services provided: The facility manages infrastructure and systems for the BRC cores, provides desktop and network support, production and management of Laboratory Information Management Systems (LIMS), software licensing management, and specialized bio-IT consulting and services.

Administration: The Bio-IT Facility is part of the Biotechnology Resource Center of the Cornell University Institute of Biotechnology.

Open to all: The resources and services of the facility are open to all investigators at Cornell University and Cornell-affiliated institutions. The facility also provides services to external investigators at both academic institutions and commercial enterprises. In association with the NY State Center for Advanced Technology (CAT) in Life Science Enterprise, NY State companies receive a discount on facility services.



RESOURCES

Server/compute infrastructure

- File, database, business, web and application servers and cloud resources
- Heavily virtualized environment, leveraging central campus services, commodity cloud services as well as our own hypervisors for maximum efficiency and flexibility
- Desktop management and disaster recovery resources, leveraging central campus services
- Two core facility machine rooms (~500 sq. ft.); access to centralized campus data center for co-location
- ~500 TB of storage managed across several tiers/classes of storage, including both BRC-owned and leased resources
- User authentication and authorization, leveraging central Cornell active directory
- Software license management and monitoring server (Sassafras KeyServer)

Campus partnerships

- Integration with the BRC Bioinformatics Facility's BioHPC Lab resource for data distribution and management and ongoing collaborations to meet the information technology and informatics needs of the research community
- Partnership with the Cornell Center for Advanced Computing (CAC) for access to CAC-managed storage and compute resources and national resources
- Relationships with other campus IT service providers and consultants: Libraries, Cornell Institute for Social and Economic Research (CISER), Cornell Restricted Access Data Center (CRADC), OSP Research Data Management Service Group (RDMSG) and Cornell Information Technologies (CIT)

Networking

- Gigabit wired network and wireless coverage, tied to redundant 10 GB campus backbone
- High speed leased fiber between Cornell Ithaca and Weill Cornell Medical campuses in NYC, NY and Doha, Qatar
- Campus connectivity to Commodity internet, Internet 2, and NYSERNet via high speed, redundant interconnects

Desktop / Network Support



- Full service desktop and network support for the Institute of Biotechnology and BRC plus individual laboratories and academic departments
- Desktop, server and cloud configuration and management
- Physical and virtual server co-location. Cloud provisioning and orchestration
- Security and Information technology policy compliance support
- Server, web and application hosting
- Data management solutions and consulting



Services include evaluating desktop and network needs, procuring and implementing appropriate computational infrastructure, and providing comprehensive IT support for desktops and networks. Specialize in providing solutions for challenging laboratory environments, including legacy equipment, large data volumes/velocities and complex data management needs.

LIMS Database Development and Support

Develop, procure, deploy and support Laboratory Information Management Systems (LIMS)

LIMS functions include:

- online ordering
- sample submission tracking and automation
- instrument use scheduling
- instrument interlock
- data results distribution
- billing and reporting

Online Ordering



Process Tracking and Management



Reagents



Protocols and Process Status



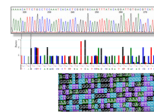
Data Processing and Backup



Instrument Systems



Robotics



Data Return

Order Status & Data Distribution



Invoices and Billing



Scheduling



Reporting



The Bio-IT Facility provides LIMS development and support services for all of the BRC core facilities and for other research centers at Cornell University and Cornell-affiliated institutions.

Software Access and Licensing Support



Support scheduling and access to analysis software and hardware. Manage software and hardware procurement and license tracking.



The Bio-IT Facility procures, implements, maintains and provides centralized access to many commercial and free software packages, including general application software packages and specialized data analysis software tools. The core facility purchases and distributes 'site licenses' and 'floating' network licenses for commercial software and provides remote access to software tools. Some of the commercial software is available by monthly subscription only. Trial subscriptions are available. Some commercial software is available at no additional charge to users of the BRC core facilities.

Consultation, Workshops and Training

- Consultation on bio-IT tools and applications. We routinely meet research requirements for IT solutions by leveraging close relationships with vendors and with partners like Cornell Central Information Technology (CIT) and the Cornell Center for Advanced Computing (CAC).
- Seminars and educational workshops on software tools.
- Coordinated project design consultation and data handling support available with the BRC Bioinformatics, genomics, genomics diversity, proteomics and mass spectrometry, imaging, and advanced technology assessment core facilities.

Contact Information

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For questions about the Biotechnology Resource Center please contact BRC_director@cornell.edu

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Facility Users

The facility provides bio-IT services for a broad range of investigators and academic units at Cornell University, including:

