



MMHCC Newsletter January 2008

MouseLine

caBIG™ Pilot Phase Report is released

NCI is pleased to release its report on the pilot phase of the caBIG™ initiative. The report, which covers the period 2003 to 2007, summarizes progress made during the first three years of this pioneering endeavor. The Report presents the goals and strategic direction of the caBIG™ initiative, delineates its accomplishments and shortcomings, and sets the stage for broader adoption as it realizes the potential for transforming biomedical research and care in coming years. Participants and interested stakeholders will benefit from learning the results of the NCI's investment in an informatics infrastructure to enhance and accelerate research, the lessons learned about developing and managing this innovative and complex endeavor, and the scientific and technical opportunities available to all key constituencies in the broader biomedical enterprise. The report is available at <https://cabig.nci.nih.gov/overview/pilotreport>.

The caBIG™ Pilot Phase Report Executive Summary is attached to this newsletter.

Meetings

March 10 – 11, 2008

CHI-MicroRNA in Human Disease and Development: MiRNA as Diagnostic Biomarkers and Targets for Therapeutic Development

Cambridge, Massachusetts

Meeting Information: <http://www.healthtech.com/2008/mrn/index.asp>

April 12 - 16, 2008

AACR-99th Annual Meeting

San Diego, California

Meeting Information: <http://www.aacr.org/home/scientists/meetings--workshops/annual-meeting-2008.aspx>





Notices and Funding Opportunities

Registration Open for 2008 NIH Regional Seminars in Program Funding and Grants Administration

NOT-OD-08-022

National Institutes of Health

<http://grants.nih.gov/grants/guide/notice-files/NOT-OD-08-022.html>

Rapid Access to Intervention Development (RAID)

NOT-CA-08-004

National Cancer Institute

<http://grants.nih.gov/grants/guide/notice-files/NOT-CA-08-004.html>

Short Term Courses in Developmental Epigenetics (T15)

RFA-HD-08-002

National Institute of Child Health and Human Development

<http://grants.nih.gov/grants/guide/rfa-files/RFA-HD-08-002.html>

Design, Synthesis, and Preclinical Testing of Potential Treatment Agents for Drug Addiction (R01)

PAS-08-041

National Institute on Drug Abuse

<http://grants.nih.gov/grants/guide/pa-files/PAS-08-041.html>

Nanoscience and Nanotechnology in Biology and Medicine (R01 and R21)

PA-08-052, PA-08-053

Multiple Institutes

<http://grants.nih.gov/grants/guide/pa-files/PA-08-052.html>

<http://grants.nih.gov/grants/guide/pa-files/PA-08-053.html>

Cancer Prevention Research Small Grant Program (R03)

PAR-08-055

National Cancer Institute

<http://grants.nih.gov/grants/guide/pa-files/PAR-08-055.html>

Understanding and Preventing Brain Tumor Dispersal (R21)

PAS-08-049

National Institute of Neurological Disorders and Stroke

National Cancer Institute

<http://grants.nih.gov/grants/guide/pa-files/PAS-08-049.html>





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NCI Mouse Repository Status Report

Currently, the Mouse Repository maintains 32 strains as live colonies and distributes 63 strains as frozen embryos. In FY 2007, the Mouse Repository distributed 1,799 live mice and completed 28 embryo shipments. The live animal distribution increased by 30% compared to FY 2006 while the embryo shipments remained the same. Although most of the mice were shipped within the United States, the Repository also sent animals to Australia, Canada, as well as several European and Asian countries.

To learn more about the Repository and the available services go to <http://mouse.ncifcrf.gov>

Job Opening

Department of Health and Human Services (DHHS)
National Institutes of Health (NIH)
National Cancer Institute (NCI)
Center for Biomedical Informatics
And
Information Technology (CBIIT)

INTERN FOR ANIMAL MODEL AND MICROARRAY DATA CURATION

The Center for Biomedical Informatics and Information Technology (CBIIT), located in Rockville, MD, provides professional, industrial quality software development and data management services to the clinical and basic science research communities. Our partners include national leaders in all areas of cancer research, including cancer genomics, proteomics, early detection, therapy evaluation and prevention. Our contractors and staff include senior scientists, bioinformaticians, as well as professional software architects and engineers.

The CBIIT is recruiting for an intern to extract animal model data from primary scientific literature and enter this data into the Center's Cancer Model Database (caMOD). Additionally, this intern will enter microarray data associated with these models into the Center's microarray database (caArray). These efforts will require follow up with the laboratory personnel who generated the data and thus good communication skills and attention to detail are required.

The duration of the internship is one year and will be awarded through NCI's Cancer Research Training Award (CRTA) Program. The successful candidate will have a Bachelor's degree in biomedical sciences and one year of laboratory research experience. Basic knowledge of computers and databases is required. Experience working with animal models is an advantage. Work will be performed in the CBIIT Rockville office.

More information about CBIIT is available at <http://ncicb.nci.nih.gov>. Applicants should send their resume to Dr. Juli Klemm at the CBIIT office, klemmj@mail.nih.gov.

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To unsubscribe from this newsletter please send an email to Dr. Betty Tarnowski tarnowsb@mail.nih.gov. Send meeting announcements and other information you would like to have included in this newsletter to Ulli Wagner: ulrike@mail.nih.gov





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tarnowsb@mail.nih.gov Send meeting announcements and other information you would like to
have included in this newsletter to Ulli Wagner: ulrike@mail.nih.gov





The caBIG™ Pilot Phase

Report: 2003-2007

Executive Summary



EXECUTIVE SUMMARY

In 2003, the National Cancer Institute (NCI) conceived of the cancer Biomedical Informatics Grid (caBIG™) initiative as part of its mission to advance research on cancer and improve clinical outcomes for patients. The NCI recognized that the ability to connect people, organizations, and data through information technology would be critical to realizing the potential of Molecular (also known as “personalized”) Medicine.

Over time, the need for a “worldwide web of cancer research,” as caBIG™ has been described, has become increasingly urgent. Cancer continues to be a major problem globally, and the vast amount of data that researchers must collect, analyze, and store continues to expand as the pace of discovery accelerates.

The caBIG™ initiative has been an unprecedented effort. At the time of its launch, there was no such interconnected standardized biomedical informatics platform in place anywhere within the biomedical research community that could be used as an organizational or technical model. In that context, caBIG™ was—and continues to be—highly ambitious, especially in light of the cultural shifts within the research community that are required to make it a reality.

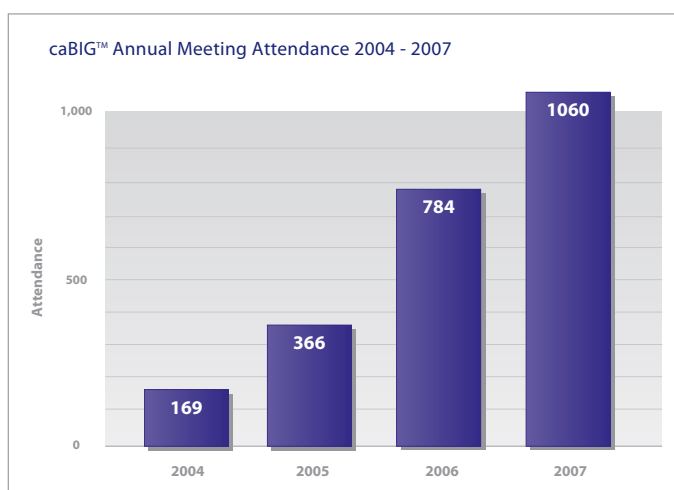
caBIG™ Goals and Outcomes

The caBIG™ initiative was formally launched in February 2004 as a three-year Pilot, overseen by the NCI Center for Bioinformatics (NCICB).¹ The objectives of the Pilot Phase were twofold: to test the ability of a complex informatics initiative to achieve measurable goals and deliverables toward enhancing cancer research, and to assess the opportunities and challenges of connecting a disparate biomedical community on a national and eventually international scale. Those objectives have been met, often beyond the expectations of the community, as follows:

- **Goal:** Illustrate that a spectrum of Cancer Centers with varying needs and capabilities can be joined

in a common grid of shared data, applications, and technologies.

- **Outcome:** As of June 2007, there were over 190 organizations participating in the caBIG™ community (See Appendix B for complete listing). This community includes 51 Cancer Centers; federal agencies; and academic, not-for-profit, and industry entities, represented by close to 1,000 individuals.



- **Goal:** Demonstrate that Cancer Centers, in collaboration with NCI, will develop new enabling software tools and systems to support multiple research organizations.
- **Outcome:** More than 300 software components have been delivered during the Pilot Phase, including over 40 end-user applications and a wide range of infrastructure components such as data standards and software development toolkits. Over 45 biomedical datasets have been delivered in caBIG™ compliant formats, derived from clinical and molecular studies, and are in use at several cancer research sites. These components were derived from over 5,000 analysis and requirement-gathering task orders issued to the community. Due to the availability of this software at the close of the Pilot Phase, activities were under way in June 2007 to provide installation and support services

¹ In 2007, NCI Center for Bioinformatics (NCICB) became part of the new overarching Center for Biomedical Informatics and Information Technology (CBIIIT).

for a wide range of adopting organizations, including a dedicated rollout of key tools, infrastructure, and interoperability framework to NCI Cancer Centers. The future availability of these tools and datasets over caGrid will enable an increasing number of investigators to share knowledge as it emerges.

- **Goal:** Demonstrate that Cancer Centers will actively use the grid and realize greater value in their cancer research endeavors by using this network to support powerful collaborations that are dependent on the sharing of data.
- **Outcome:** When caGrid (the data transmission network upon which caBIG™ works) was launched, several nodes (i.e., connection points where research organizations log onto the caBIG™ system) and software tools were available. As of June 2007, caGrid was extensively being used as a testing platform for the many caBIG™ software applications that will be grid-enabled to support the cancer research community in the Enterprise Phase.
- **Goal:** Create an extensible infrastructure that will continue to be expanded and extended to members of the cancer research community beyond the NCI-designated Cancer Centers.
- **Outcome:** NCICB has actively collaborated with NCI programs (such as SPOREs,² The Cancer Genome Atlas,³ the Cooperative Groups,⁴ and Cancer Genetic Markers of Susceptibility⁵); other NIH Institutes and Centers (such as National Institute of Neurological Disorders and Stroke,⁶ National Human Genome Research Institute,⁷ National Heart, Lung and Blood Institute⁸ and National Center for Research Resources⁹); other NIH-funded programs (such as Biomedical Informatics Research Network,¹⁰ and Clinical and Translational

Science Awards¹¹); other research grid initiatives and other international informatics initiatives (including a formal agreement with the UK's National Cancer Research Institute¹²). Wherever possible, interoperability with such initiatives has been sought, and caBIG™ tools and infrastructure are consistently made available for either adoption or further development.

Recognition of caBIG™

- 40+ Peer-Reviewed Publications¹³
- ComputerWorld Honors Program 2006¹⁴
- Three reports from The NIH National Center for Research Resources, 2006¹⁵

Central Tenets of caBIG™

Interoperability is central to caBIG™; that is, compatibility among information technology tools used to collect, analyze, and share data. This compatibility provides a means of linking together all the scientists, clinicians, patients, and other participants so that they can conduct more dynamic, collaborative, and ultimately more successful research.

Among the hallmarks of the caBIG™ initiative has been the building of community. From initial outreach to Cancer Centers to identify the most pressing research needs, to the organization of community-based workspaces encompassing multiple disciplines to organize activities to address those needs, to the process for development and testing of software tools, caBIG™ has been of and for the cancer community.

² <http://spores.nci.nih.gov/>.

³ <http://cancergenome.nih.gov/index.asp>.

⁴ <http://www.cancer.gov/cancertopics/factsheet/NCI/clinical-trials-cooperative-group>.

⁵ <http://cgems.cancer.gov/>.

⁶ <http://www.ninds.nih.gov>

⁷ <http://www.genome.gov>

⁸ <http://www.nhlbi.nih.gov>

⁹ http://www.ncrr.nih.gov/clinical_research_resources/.

¹⁰ http://www.nbirn.net/index_ie6.shtm.

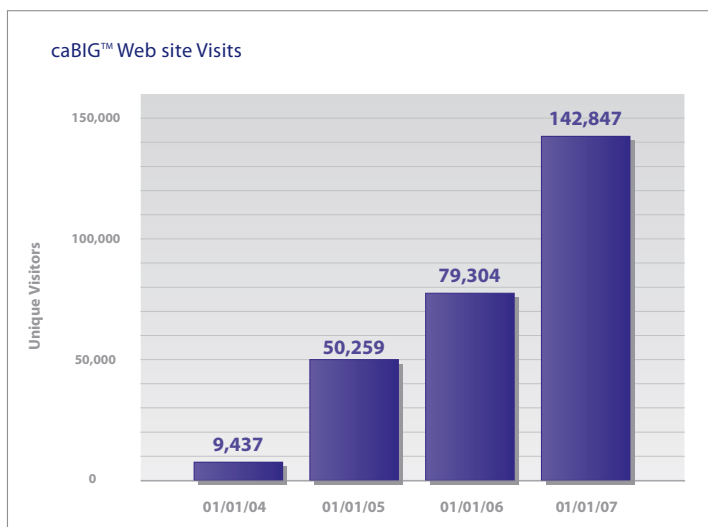
¹¹ <http://ctsaweb.org/about.html>.

¹² <http://www.ncri.org.uk/>.

¹³ http://caBIG.nci.nih.gov/Library/Library/caBIG_Scientific_Pubs.html.

¹⁴ <http://www.cwhonors.org>

¹⁵ <http://www.ncrr.nih.gov/publications/informatics/caBIG.pdf>;
http://www.ncrr.nih.gov/publications/informatics/caBIG_OpportunitiesAndChallenges_12-26-06.pdf;
http://www.ncrr.nih.gov/publications/informatics/caBIG-Plus_ConceptualView_12-26-06.pdf



Another key characteristic has been the openness of the caBIG™ initiative, as reflected in the open source nature of the standards and software and the open access to the initiative for any constituencies within the biomedical community who wished to participate. The caBIG™ initiative was also marked by the dynamic nature of its management structure and operations, which retained a highly flexible capacity to change over time as conditions in the community changed, as well as to absorb lessons learned as the program evolved.

Moving into Enterprise Phase

The caBIG™ Pilot Phase concluded in March 2007, followed by a transition to an Enterprise Phase, which has built on caBIG™ accomplishments and lessons learned. In the Enterprise Phase, an expanding number of organizations—including additional Cancer Centers, the pharmaceutical and biotech community, and the commercial IT sector—are being invited to achieve connectivity via the broader adoption of caBIG™ tools, infrastructure, and interoperability framework. caBIG™ is also sharing its experience, expertise, and tools with the larger biomedical community to serve as a model, so that other disease-focused endeavors

can advance more rapidly through a learning curve to build their informatics capabilities. It is likely that most of the tools and infrastructure of caBIG™ will be widely applicable beyond cancer.

In addressing the 2007 caBIG™ Annual Meeting, Dr. Elias Zerhouni, Director of the National Institutes of Health, noted to attendees: “I think caBIG™ is a model that I expect to be adapted by other communities, such as those in heart disease and Alzheimer’s.”

Finally, while the caBIG™ initiative benefited from the participation of numerous patient advocates, caBIG™ itself has not been visible to most cancer patients thus far. It is expected that in the future, patients will benefit from caBIG™ through its ability to facilitate selection of treatment and entry into clinical trials of experimental treatments, monitor for treatment response and adverse effects, and monitor for recurrence of disease.

Dr. John Niederhuber, Director of the National Cancer Institute, predicts that “caBIG™ will drive clinical trials of the future. It will be the way we bring genomics, proteomics, and clinical data together for each patient in a clinical trial.”



To access the full Pilot Report or the Executive Summary online, please visit:

<https://cabig.nci.nih.gov/overview/pilotreport>