



# caBIG Program Update

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## Message from NCICB >

It is my pleasure to announce that fifty National Cancer Institute designated Cancer Centers have agreed to participate in the pilot phase of the caBIG initiative. These Centers have agreed to work collaboratively to test the feasibility of establishing a cancer based biomedical informatics network. The network will enable the sharing of tools, standards and data that meet common needs and will leverage the combined strengths and talents found within each Center.

The participating Centers have been organized together to work within five established Workspaces as members of Working Groups or project teams. These initial Workspaces will focus on addressing areas of need that were identified by the Cancer Center Community. These areas include Clinical Trials Management, Integrative Cancer Research, Tissue Banks and Pathology, Vocabularies and Common Data Elements, and Architecture. Centers have also agreed to participate in Strategic Level Working Groups that will initially address longer-term issues related to data sharing, intellectual property, training and strategic planning for caBIG. The specific roles that Centers have agreed in principle to play during the pilot phase are outlined in the Workspace Update sections of this communication.

All Workspaces will be initiated in February 2004 during a combined 2-3 day Workspace Kick-off Meeting.

Members of Strategic Level Working Groups will also be invited to participate. The meeting will include a caBIG Orientation Session and reviews of Workspace projects, priorities, and strategic directions. Additional details, including logistical information for this meeting will be provided to all participating Centers in January 2004.

In order to continue moving the caBIG initiative forward, the NCICB is currently in the midst of securing operational and logistics support for the caBIG initiative. The operational contractor is essential and will serve as the Master Contractor responsible for overseeing Workspace and Working Group activities including budgets, contracts and scheduling. The logistics contractor will provide the necessary logistical support for Workspace and Strategic Level Working Group meetings and activities. It is anticipated that these contractors will join the caBIG Project Team in January 2004. We will continue to provide updates as these details are finalized.

On behalf of the National Cancer Institute Center for Bioinformatics and the caBIG Project Team, I wish to thank the participating Cancer Center staff for their enthusiasm and continued support for the caBIG initiative.

Sincerely,

Kenneth H. Buetow, Ph.D.  
Director  
NCI, Center for Bioinformatics

## Contact

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## Workspace Updates >

### caBIG Clinical Trial Management Systems Workspace



This Workspace will address the Cancer Center community need for consistent, open and comprehensive tools for clinical trials management. These systems will be assembled whenever possible out of existing caBIG-compatible systems and software from a variety of sources, ensuring that maximum leverage will be gained from existing infrastructure.

**The City of Hope and University of Pittsburgh Cancer Centers** have agreed in principle to serve as development sites that will construct additional software or adapt existing software that will address unmet needs in this Workspace.

**Duke University, Case Western Reserve University—Ireland, University of California Irvine—Chao Family, University of Pennsylvania—Abramson and Wake Forest University Cancer Centers** have agreed in principle to participate in the deployment, testing and validation of caBIG compatible tools as adoption sites. They will also apply these tools to help bring valuable resources to the grid.

**University of California San Francisco, University of Iowa—Holden, University of Minnesota, University of Nebraska—Eppley, University of Wisconsin, Northwestern University—Robert H. Lurie, Vanderbilt University—Ingram and Yale University Cancer Centers** have agreed in principle to join the development and adoption centers to assist and enhance the functioning of the Workspace as members of the Clinical Trial Management Systems Working Group.

Potential Workspace projects may include the adoption of caBIG compliant systems for clinical trials data collection and management as well as the evaluation and testing of new systems currently under development. The Workspace may also develop and test interoperable modules focused on adverse event monitoring and reporting, patient recruitment and retention, chemotherapy and patient management, collection and data management of quality-of-life information, study protocol design, monitoring and reporting on ongoing studies and IRB management.

The specific projects that will be undertaken in this Workspace will be delineated in detail by Workspace participants during the implementation phase of each Workspace.

It is anticipated that the initial Working Group meeting for this Workspace will be held in February 2004. Centers participating in this Workspace will be provided with additional details and logistics information in January 2004.

### caBIG Integrative Cancer Research Workspace



This Workspace will provide tools and systems to enable integration and sharing of information among cancer researchers. These tools will facilitate the integration of data not only from different Centers but also data of different types. This will enable translational and integrative cancer research by providing for the integration of clinical and basic research information between “bench and bedside” as well as from “bench to bench.”

**The Burnham Institute, Dartmouth—Norris Cotton, Duke University, Georgetown University—Lombardi, University of California San Francisco,**

### caBIG Clinical Trial Management Systems Workspace

### caBIG Integrative Cancer Research Workspace

University of Chicago, University of Iowa—Holden, University of North Carolina—Lineberger, Cold Spring Harbor, Memorial Sloan—Kettering, Fox Chase, Thomas Jefferson University—Kimmel and Washington University—Siteman Cancer Centers have agreed in principle to participate by developing, enhancing and integrating existing tools relevant to this Workspace. They will also apply these tools to help bring valuable resources to the grid. These tools will enable clinical-genomic data integration, genomic-proteomic profiling and visualization, data-mining, multi-platform microarray data integration, and provide for mutational and sequence analysis.

New York University, Memorial Sloan-Kettering, Oregon Health and Science University, Wistar, University of South Florida-H. Lee Moffitt and University of Pennsylvania-Abramson Cancer Centers have expressed an interest and have agreed in principle to participate in the deployment, testing and validation of caBIG compatible tools in this workspace.

Vanderbilt University—Ingram, Columbia University—Herbert Irving, Meyer L. Prentis-Karmanos, University of Michigan, and Northwestern University—Robert H. Lurie Cancer Centers have agreed in principle to enhance the functioning of the Workspace by joining the above-mentioned Cancer Centers as members of the Integrative Cancer Research Working Group.

It is anticipated that the initial Working Group meeting for this Workspace will be held in February 2004. Centers participating in this Workspace will be provided with additional details and logistics information in January 2004.

## caBIG Tissue Banks and Pathology Tools Workspace



This Workspace will provide for the development, and implementation of tissue and pathology tools. These systems will facilitate integration and provide access to information from geographically-separate locations.

Washington University—Siteman and the University of Pittsburgh Cancer Centers have agreed in principle to develop or enhance software and provide solutions relevant to this workspace.

Northwestern University—Robert H. Lurie, University of North Carolina—Lineberger, Dartmouth-Norris Cotton, University of Pennsylvania—Abramson, and Thomas Jefferson University—Kimmel Cancer Centers have agreed in principle to participate in the deployment, testing and validation of caBIG compatible tools in this Workspace. They will also apply these tools to help bring valuable resources to the grid.

Virginia Commonwealth University—Massey, Jackson Laboratory, Johns Hopkins—Sidney Kimmel, Indiana University, University of Arizona and the University of Alabama at Birmingham Cancer Centers have agreed in principle to enhance the functioning of the Workspace by joining the above-mentioned Cancer Centers as members of the Tissue Banks and Pathology Working Group.

Potential Workspace projects may include specimen tracking, virtual tissue and specimen repositories, transparent data federation, and features supporting association between heterogeneous data sets.

## caBIG Tissue Banks and Pathology Tools Workspace

The specific projects that will be undertaken will be delineated in detail by Workspace participants during the implementation phase of each Workspace.

It is anticipated that the Kick-off Meeting for this Workspace will be held in February 2004. Centers participating in this Workspace will be provided with additional details and logistics information in January 2004.

### **caBIG Vocabularies and Common Data Elements Workspace**



This Cross Cutting Workspace will be responsible for evaluating and integrating systems for vocabulary and ontology content development, as well as software systems for content delivery. They will develop standards for the representation of ontologies and vocabularies used throughout the caBIG system, as well as assessments of existing systems proposed for use within caBIG. Workspace participants will also be responsible for vocabulary and ontology content development, when specific and required content does not exist in a form usable by caBIG.

**Albert Einstein, Fred Hutchinson, Jackson Laboratory, Mayo Clinic, University of California—Davis, University of Hawaii and the University of Pittsburgh Cancer Centers** have agreed in principle to participate in this Workspace as developers. They will evaluate, integrate and develop content as needed for this Workspace and interact with many of the other Workspaces as part of their activities.

It is anticipated that the Kick-off Meeting for this Workspace will be held in February 2004. Centers participating in this Workspace will be provided with additional details and logistics information in January 2004.

### **caBIG Architecture Workspace**

This Cross Cutting Workspace will assist in bringing new architectural developments and standards to caBIG, will act as an interface to IT communities developing novel architectures, will develop architectural white papers describing new opportunities, and will provide architectural expertise and solutions to the other Workspaces.



**Cold Spring Harbor, Duke University, Georgetown University—Lombardi, Fred Hutchinson, Ohio State University—Arthur G. James/Richard J. Solove, University of Chicago, University of Pittsburgh, University of Wisconsin, and Washington University—Siteman Cancer Centers** have agreed in principle to participate in this Workspace as Working Group members. They will ensure consistent application of the caBIG development principles to the distributed groups performing integration and implementation activities throughout the caBIG project.

It is anticipated that the Kick-off Meeting for this Workspace will be held in February 2004. Centers participating in this Workspace will be provided with additional details and logistics information in January 2004.

### **caBIG Vocabularies and Common Data Elements Workspace**

### **caBIG Architecture Workspace**

## Strategic Level Working Group Updates >

### caBIG Data Sharing and Intellectual Capital

This Strategic Level Working Group will address issues related to data sharing and intellectual capital associated with caBIG and develop recommendations to the caBIG Oversight Board. This process will include the suggestion of standards and drafting of policy documents, as well as writing of white papers which will help assist in clarifying caBIG's stand on issues surrounding intellectual property. They will also provide expert guidance regarding specific areas of concern raised within caBIG Workspaces and individual Project Teams associated with these issues.

**University of Arizona, City of Hope, Cold Spring Harbor, Fred Hutchinson, Jackson Laboratory, Johns Hopkins—Sidney Kimmel, Oregon Health and Science University, Thomas Jefferson University—Kimmel, University of Iowa—Holden, University of North Carolina—Lineberger, University of Michigan, University of Minnesota, University of Pittsburgh and Washington University—Siteman Cancer Centers** have agreed to participate as members of this Strategic Level Working Group.

It is anticipated that the Strategic Level Working Groups will participate in the combined Workspace Kick-off Meeting scheduled for February 2004. Centers will be provided with additional details and logistics information regarding this meeting in January 2004. Strategic Level Working Group Meetings will formally commence soon after.

### caBIG Strategic Planning

This Strategic Level Working Group will assist the caBIG Oversight Board with strategic planning and vision development activities. Participants will provide strategic insights regarding caBIG's potential role, relationship and interface with other initiatives. The products of these endeavors will include white papers and planning documents that will help identify and prioritize additional activities for the caBIG project as a whole.

**City of Hope, Cold Spring Harbor, Duke University, Fox Chase, Fred Hutchinson, MD Anderson, St Jude Children's Research Hospital, University of Alabama at Birmingham, University of Colorado, University of Iowa—Holden, University of Pennsylvania—Abramson, University of Pittsburgh, University of Southern California—Norris, University of Vermont, Washington University—Siteman and Yale University Cancer Centers** have agreed to participate as members of this Strategic Level Working Group.

It is anticipated that the Strategic Level Working Groups will participate in the combined Workspace Kick-off Meeting scheduled for February 2004. Centers will be provided with additional details and logistics information regarding this meeting in January 2004. Strategic Level Working Group Meetings will formally commence soon after.

### caBIG Training

This Strategic Level Working Group will help define the framework and standards against which individual Workspaces and Project Groups can develop and communicate about tools and solutions. Participants may be involved in creating frameworks for online or interactive training, developing templates and skeleton documents for technical manuals, and specifying means for cooperating groups within the Workspaces to collaborate. The group may also be involved in structuring workshops or training sessions at meetings to promote and facilitate the use of caBIG throughout the cancer research community.

**Cold Spring Harbor, Institute for Cancer Prevention, Johns Hopkins—Sidney Kimmel, Mayo Clinic, Oregon Health and Science University, University of California Davis, University of Chicago, University of Iowa—Holden, University of Pennsylvania—Abramson, and University of Pittsburgh Cancer Centers** have agreed to participate as members of this Strategic Level Working Group.

It is anticipated that the Strategic Level Working Groups will participate in the combined Workspace Kick-off Meeting scheduled for February 2004. Centers will be provided with additional details and logistics information regarding this meeting in January 2004. Strategic Level Working Group Meetings will formally commence soon after.

## FAQs >

Questions and answers to common issues raised by caBIG participating Centers

### **What was the process for determining the roles each Center will play in the pilot phase of caBIG?**

From the start of the informational seminars in July and August of 2003, and continuing through the Cooperative Development Meetings (CDM), there was widespread participation within the community. The collection of information about the needs, capabilities, and projects that are of interest to the Cancer Centers was the focus of this selection. With the information collected and summarized by Booz Allen Hamilton, the NCICB staff (assisted by Booz Allen bioinformatics, medical and information technology experts) assembled a program that met the expressed needs of the Cancer Centers, but also stayed within the budget allocated to the program. The result was a balance of community participation, immediate action to address needs, and the creation of a long-term sustainable strategic framework.

### **The area which a Center was asked to participate in is a bit different from that which they proposed. Why is that?**

The Cancer Center pilot proposals were meant to be a guideline, along with the CDM visit information, for the integration of Center participation on the caBIG project as a whole.

The final projects, which had many different Centers participating should

be expected to incorporate many of the ideas developed in the proposals, but may differ in the details. As the caBIG project matures, many of the details or proposals currently not undertaken may be incorporated into the Grid, based on Cancer Center interest and needs.

### **Who is the Master Contractor and what will their role be?**

The Master Contractor will be responsible for overseeing Workspace and Working Group operations and activities including budgets, contracts and scheduling. The Master Contractor will provide funding to Workspace participants via subcontracting mechanisms and will be directly accountable to the caBIG Oversight Board and NCICB. Individual managers who will oversee the operations of each Workspace will also be appointed by the Master Contractor. It is anticipated that the Master Contractor will join the caBIG Project Team in January 2004.

### **What approach and to what standards are caBIG associated software development activities expected to comply with?**

It is anticipated that caBIG software development activities will provide industrial-level and quality software that has been produced using the latest methodologies. These activities will include full testing, validation and documentation exercises.

caBIG software products will be required to interoperate with existing caCORE software and systems and will be developed according to established and mature caCORE standards and technologies.

The Architecture Workspace will play a role in helping caBIG development efforts to be compliant with caCORE requirements and in establishing future design requirements, standards and interface specifications to be integrated into caCORE to support caBIG.

### **What is the difference between Workspace Working Groups and Strategic Level Working Groups?**

Workspace Working Groups will provide strategic guidance and technical support for Workspace activities. Invited members will include representatives from affiliated Developer and Adopter teams as well as experts from the Cancer Research Community with knowledge and experience relevant to the Workspaces.

Strategic Level Working Groups will offer guidance regarding issues relevant to the overall caBIG initiative. Invited members will include representatives from each of the Workspaces, as well as experts from the scientific research, regulatory, policy and commercial communities with knowledge and experience relevant to caBIG activities. The Strategic Level Working Groups will not be directly involved in individual Workspace activities.

Participation in either of these types of Groups is open to any member of the Biomedical Research Community.

### **Who should the Centers send to Working Group meetings?**

Each participating Center will select participants with appropriate expertise that will contribute to and support the objectives of the Workspace or Strategic Level Working Group to

which they are assigned. Center representatives must be experts in the scope of the assigned Workspace or Strategic Level Working Group so that they can provide valuable contributions that will define Workspace priorities, specifications, deliverables, levels of effort, and schedules.

### **The Cancer Research Community is excited about having this initiative move forward at such a fast pace, but will any key elements be missed or compromised due to this pace?**

The fast pace of the project reflects the current acute needs of the Cancer Center community, and the unique opportunity to develop reusable and widely-used architecture for cancer bioinformatics. Components or systems that are not part of the pilot phase of the project are not lost. In fact many interesting projects were deliberately left for later consideration, in order to ensure that immediately useful tools would be the primary focus of the pilot. Therefore, the Workspaces are not intended to be comprehensive, and additional components and Centers will be added as needed based on input from the field.

### **Will the project summaries submitted by individual Centers be made available to others?**

Project summaries were submitted by the Cancer Centers to the NCICB in confidence. Therefore, it would be inappropriate for the NCICB to release this information without their

approval. It is up to individual Centers to release this information if they choose to do so.

### **When will a final list of participating Centers and their roles in the pilot phase be made available to other participating Centers and the public?**

The NCI Designated Cancer Centers that have volunteered to participate in the caBIG pilot have now agreed in principle to move forward and to be identified with their anticipated roles. Therefore, this information is currently being distributed and is available at the caBIG homepage at: <http://caBIG.nci.nih.gov>

### **Will the cost for caBIG impact NCI's ability to fund individual research grants?**

No individual research grant funding is at risk due to caBIG pilot expenditures. The potential long-term elimination of duplicative efforts in the Cancer Center community will ultimately provide additional support that can be utilized to support individual investigators.

### **What will be the process for determining how much support each Center will receive?**

One of the primary drivers in Center selection was ensuring that all Centers, regardless of current capability and expertise, would be able to benefit from and/or participate in the caBIG project. The amounts each Center receives will depend on the specific

activities it is contracted to carry out. It is anticipated that Cancer Centers with informatics groups capable of high-quality software development will be carrying out a large portion of the development work, but Centers with expertise in specific areas of interest to caBIG will also be receiving significant support for other activities including implementation, validation, testing and Working Group participation. Specific levels of support will be outlined by subcontracts and Statements of Work that will be negotiated after the initial Kick-off meetings of each of the Workspaces.

### **How can I obtain information regarding additional frequently asked questions and obtain updates regarding the caBIG initiative?**

Additional questions and answers related to caBIG are posted on the caBIG website found at <http://caBIG.nci.nih.gov>

Centers participating in the caBIG pilot will receive regular Program Updates via email as new information regarding caBIG becomes available. Information regarding caBIG's progress will be posted on the caBIG website as well.

### **Who should I contact if I have additional questions regarding the caBIG initiative?**

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Caitlin O'Brien, MBBS, MA  
240-314-5681  
[obrienca@mail.nih.gov](mailto:obrienca@mail.nih.gov)

## Groups at a Glance >

### caBIG Clinical Trial Management Systems Workspace

Case Western Reserve University—  
Ireland

City of Hope

Duke University

Northwestern University—Robert H.  
Lurie

University of California Irvine—Chao  
Family

University of California, San Francisco

University of Iowa—Holden

University of Minnesota

University of Nebraska-Eppley

University of Pennsylvania—  
Abramson

University of Pittsburgh

University of Wisconsin

Vanderbilt University—Ingram

Wake Forest University

Yale University

### caBIG Integrative Cancer Research Workspace

Burnham Institute

Cold Spring Harbor

Columbia University—Herbert Irving

Dartmouth—Norris Cotton

Duke University

Fox Chase

Georgetown University—Lombardi

Memorial Sloan Kettering

Meyer L. Prentis-Karmanos

New York University

Northwestern University—Robert H.  
Lurie

Oregon Health and Science University

Thomas Jefferson University—Kimmel

University of California San Francisco

University of Chicago

University of Iowa—Holden

University of Michigan

University of North Carolina—  
Lineberger

University of Pennsylvania—Abramson

University of South Florida—H. Lee  
Moffitt

Vanderbilt University—Ingram

Washington University—Siteman

Wistar

### caBIG Tissue Banks and Pathology Tools Workspace

Dartmouth—Norris Cotton

Indiana University

Jackson Laboratory

Johns Hopkins—Sidney Kimmel

Thomas Jefferson University—Kimmel

Northwestern University—Robert H.  
Lurie

University of Alabama at Birmingham

University of Arizona

University of North Carolina—  
Lineberger

University of Pennsylvania—Abramson

University of Pittsburgh

Virginia Commonwealth University—  
Massey

Washington University—Siteman

### caBIG Vocabularies and Common Data Elements Workspace

Albert Einstein

Fred Hutchinson

Jackson Laboratory

Mayo Clinic

University of California—Davis

University of Hawaii

University of Pittsburgh

### caBIG Architecture Workspace

Cold Spring Harbor

Duke University

Georgetown University—Lombardi

Fred Hutchinson

Ohio State University—Arthur G.  
James/ Richard J. Solove

University of Chicago

University of Pittsburgh

University of Wisconsin

Washington University—Siteman





## **caBIG Data Sharing and Intellectual Capital—Strategic Level Working Group**

University of Arizona

City of Hope

Cold Spring Harbor

Fred Hutchinson

Jackson Laboratory

Johns Hopkins—Sidney Kimmel

Oregon Health and Science University

Thomas Jefferson University—Kimmel

University of Iowa—Holden

University of North Carolina—Lineberger

University of Michigan

University of Minnesota

University of Pittsburgh

Washington University—Siteman

## **caBIG Strategic Planning—Strategic Level Working Group**

City of Hope

Cold Spring Harbor

Duke University

Fox Chase

Fred Hutchinson

MD Anderson

St Jude Children's Research Hospital

University of Alabama at Birmingham

University of Colorado

University of Iowa—Holden

University of Pennsylvania—Abramson

University of Pittsburgh

University of Southern California—Norris

University of Vermont

Washington University—Siteman

Yale University

## **caBIG Training—Strategic Level Working Group**

Cold Spring Harbor

Institute for Cancer Prevention

Johns Hopkins—Sidney Kimmel

Mayo Clinic

Oregon Health and Science University

University of California—Davis

University of Chicago

University of Iowa—Holden

University of Pennsylvania—Abramson

University of Pittsburgh