caBIG® Program Update

Board of Scientific Advisors Meeting

June 20-21, 2011

Outline

- Report of the BSA Ad Hoc Working Group -- recommendations and NCI responses

- caBIG® Next Steps

- caBIG® Budget Adjustments

caBIG® Report and Response

Summary of BSA Working Group Recommendations

- "The caBIG® effort appears diffuse, has drifted from its core mission, and has been unevenly successful."

- Recommended that NCI refocus the program to those aspects broadly recognized as successful and important

Summary of BSA Working Group Recommendations

- Key aspects broadly recognized as successful and important:

    - Development of community-driven standards for data exchange and interoperability

    - Support for the development, maintenance, enhancement, and dissemination of software tools developed by the academic research community

    - Establishment of community dialog on interoperability of clinical and research software tools

    - Moratorium on non-core software development projects

    - Budget should be reviewed and adjusted to reflect recommendations

caBIG® Program Response

- NCI agrees that:

  - caBIG® must be refocused on the core components of 'creation and management of standards for data exchange and support of community-based software tools'

  - Central tenet of program is 'development, maintenance, enhancement, and dissemination of software tools by the academic research community'

  - Newly formed Scientific Advisory Group (SAG) will meet as soon as possible to engage participation of researchers ; first meeting planned for July 2011

  - Must continue exploring strategies to maintain open-source community

  - All non-core development is to be phased out

  - Budget must be scrutinized and adjusted for new scope

caBIG® Next Steps

Next Steps and Priorities

- NCI remains committed to caBIG®, but will refocus the effort and retain key pieces identified as important to the cancer research community

- Key effort will be facilitating community-developed informatics that provide insight in cancer biology and clinical research

- The SAG will foster collaboration with the community, help set priorities, and ensure timely communications

- There is continued support for academic IT efforts, with priorities developed in partnership with NCI Scientific Divisions

- Support is through grants, where appropriate, and dedicated funding as necessary

National Cancer Institute

caBIG® Guiding Principles

- Collaborate more closely with the cancer research community, with oversight by the SAG

- Retain stewardship of the development of community-driven technical standards and interoperability frameworks

- Foster the academic research community's biomedical informatics development efforts through peer-reviewed, investigator-initiated, and high-priority, targeted efforts executed through the NCI Scientific Divisions

- Meet community-identified software development and support needs through partnerships with external open-source development communities

caBIG® Scientific Advisory Group

- Dan Masys, Chair - Vanderbilt University

- Andrea Califano – Columbia University (BSA)

- Jean Wang – UC San Diego

- Joe Gray – University of Oregon (BSA)

- Rebecca Kush – Clinical Data Interchange Standards Consortium

- Gaddy Getz - MIT

- Lynn Vogel – MD Anderson Cancer Center

- Robert Comis - Coalition of Cancer Cooperative Groups

- Paul Fearn – Fred Hutchinson Cancer Center

- Lincoln Stein – University of Ontario

- Brian Athey – University of Michigan

- One additional invitation is pending

caBIG® Community-Generated Tools

- caBIG® will continue to provide support to academic groups through its Knowledge Center program, to provide community support for the tools and infrastructure they provide

- All community tools are open-source, and the software will continue to be made available through NCI web sites (the Support Service Providers program – with 20 SSPs to date – will continue to be available to the community for support of local installation and customization)

- Areas assessed by the SAG as important will have additional development through external open-source community effort

- The caBIG® community will continue to develop and maintain the standards and interoperability specifications necessary to keep the parts working together

Academic Development of Novel Informatics Capabilities

- caBIG® will collaborate with NCI Scientific Divisions to foster efforts addressing current and evolving needs

- Possible projects include:
  - Integration and analysis of multi-dimensional data
  - Storage and distribution of "Big Data"
  - Data visualization and interpretation
  - Natural language processing
  - Analysis of *in vivo* images
  - Development of new approaches for generating evidence

- These examples are subject to review by the SAG

Community-defined Standards and Interoperability

- caBIG® will develop pre-competitive specifications used to drive creation of software by academic and commercial developers

- Possible projects include:
  - Vocabularies/Ontologies
  - Common data elements
  - Information models
  - Interoperability conformance and compliance frameworks

- These examples are subject to review by the SAG

Informatics Capabilities
as Part of the Larger Grid

Through the caBIG® program, NCI will:

- Help with long-term dissemination and support of community-developed software by maintaining infrastructure to store software, along with its documentation, and associated metadata

- Support academic institutions by ensuring resources are available for local installation, customization and ongoing extension, through its Knowledge Center Program

- Partner with external open-source development community organizations to provide long-term support for software extension and enhancement outside the NCI mission

Informatics Capabilities
as Part of the Larger Grid

- NCI will transfer stewardship of community-developed tools to external, open-source community including:

  - Molecular analysis
  - Management of high-dimensional molecular characterization data
  - Biospecimen management
  - Clinical research tools
  - *In vivo* imaging
  - Multi-center, genetically informed, adaptive clinical trials (caBIG® will maintain standards and test for compliance)

caBIG® Budget Adjustments

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- Original FY 2011 appropriated budget was $45 million

- ARRA funding from FY 2009/2010 was $103 million

- New scope requires FY 2011 appropriated funding at $33 million

- ARRA funds reduced to $43 million

- Further adjustments of appropriated and ARRA funds are being evaluated

- Funding plans for future years will depend on NCI's budget level

Questions