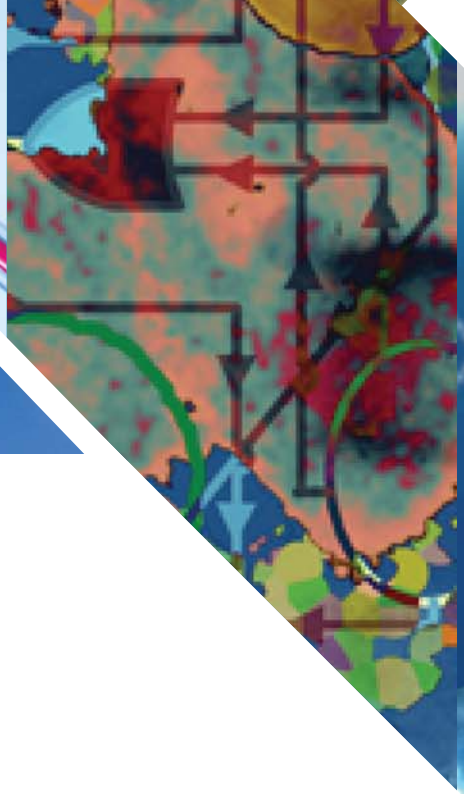
NIH LINCS PROGRAM

Library of Integrated Network-Based Cellular Signatures



PHASE 2 CONSORTIUM MEETING

October 27, 2014

Overview

The goal of LINCS is to create a new approach to the development of a network-based understanding of cellular functions and responses that will transform how biomedical researchers identify and solve individual research problems in human health and disease. The underlying premise of LINCS is that disrupting any one of the many steps of a given biological process will cause a ripple of related changes in the molecular composition, cellular characteristics, behavior, and/or function of cells (e.g., the cellular phenotype), that these changes can be globally characterized in a variety of cellular assays, and that the resulting database will allow insightful comparisons to be made between the disease state and cellular states produced by other perturbations, leading to novel information about disease and its remediation or prevention. Observing how and when a cell's phenotype is altered by specific perturbations can provide clues about the underlying mechanisms involved in cellular biology and behavior, and ultimately in disease.

Building on a successful three-year pilot project, the National Institutes of Health has awarded grants to six research institutions to establish centers, collectively called the Data and Signature Generating Centers. The National Human Genome Research Institute (NHGRI) and the National Heart, Lung, and Blood Institute (NHLBI), both part of NIH, administer the program on behalf of the NIH Common Fund.

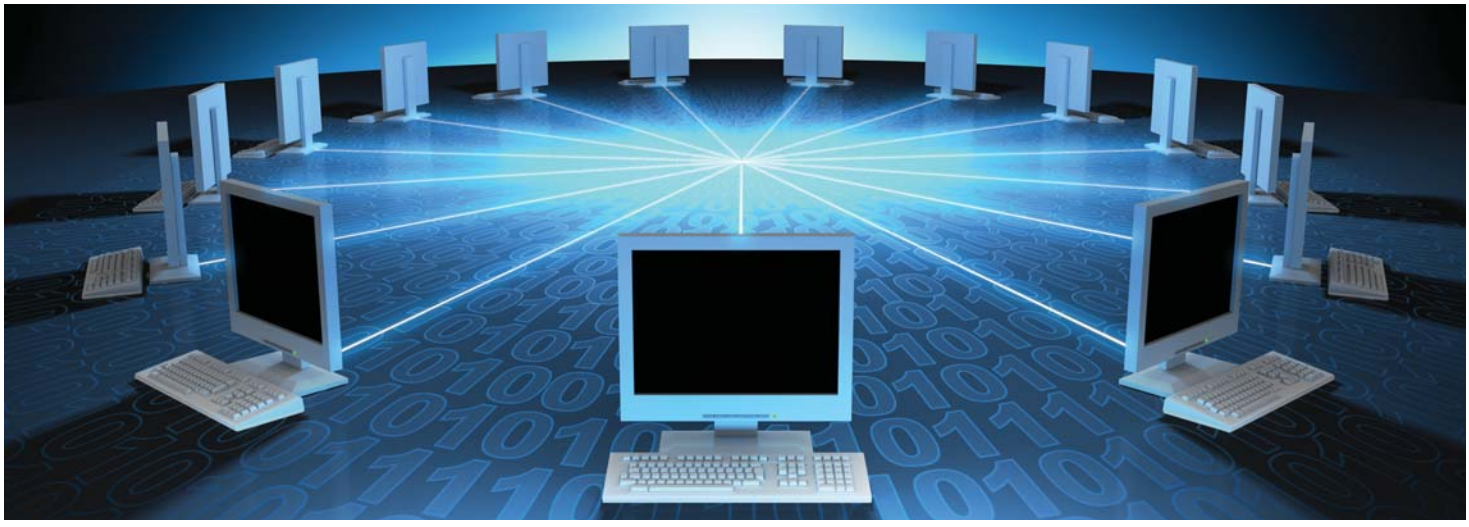
The overall LINCS Consortium will consist of the Data and Signature Generating Centers:

Harvard Medical School, Boston
Principal Investigator: Peter Sorger PhD

Oregon Health and Science University (OHSU), Portland
Principal Investigators: Joe Gray PhD, Laura Heiser PhD, James Korkola PhD

Broad Institute of the Massachusetts Institute of Technology and Harvard University, Cambridge
Principal Investigators: Todd Golub MD, Aravind Subramanian PhD

Icahn School of Medicine at Mount Sinai, New York City
Principal Investigators: Ravi Iyengar PhD, Marc Birtwistle PhD, Eric Sobie PhD



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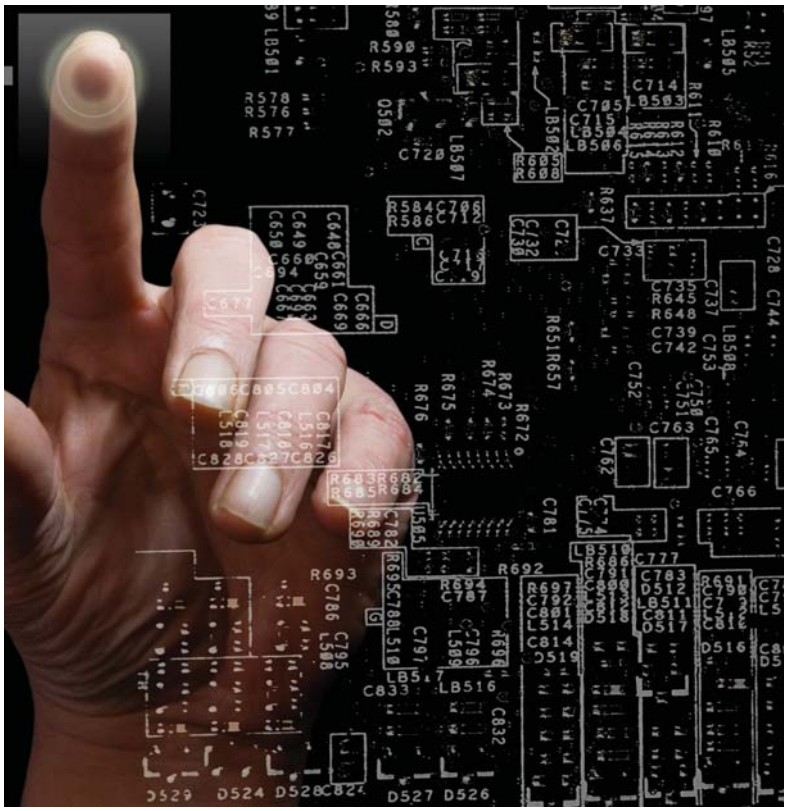
Broad Institute of the Massachusetts Institute of Technology and Harvard University, Cambridge
Principal Investigator: Jacob D. Jaffe PhD

University of California, Irvine
Principal Investigators: Leslie M. Thompson PhD, Steven Finkbeiner MD, PhD, Ernest Fraenkel PhD, Jeffrey Rothstein MD, PhD, Clive Svendsen PhD

and the

BD2K-LINCS Data Coordination and Integration Center (DCIC)
Icahn School of Medicine at Mount Sinai, New York City
Principal Investigators: Avi Ma'ayan PhD, Mario Medvedovic PhD, Stephan Schurer, PhD



This center will be a data coordination center for the NIH Common Fund's Library of Integrated Network-based Cellular Signatures (LINCS) program, which aims to characterize how a variety of types of cells, tissues and networks respond to disruption by drugs and other factors. The center will support data science research focusing on interpreting and integrating LINCS-generated data from different data types and databases in the LINCS-funded projects. This center will also work with the BD2K (Big Data to Knowledge) efforts and collaborate to achieve overall goals of NIH Data Science as currently being developed by the NIH ADDS Office. This center is co-funded by BD2K and the NIH Common Fund.

LINCS CONSORTIUM MEETING SCHEDULE

8.00 - 8.15 AM	Ajay Pillai	The LINCS Program
8.15 - 9.00	Maryann Martone UCSD	Big data from small data: creating a biomedical data ecosystem
9.00 - 10.15	DSGC Presentations - *25 mins each* Data and Signature Generation Centers *Gray, Golub, Iyengar*	Overview presentations
10.15 - 10.30	*BREAK*	
10.30 - 11.45	DSGC Presentations - *25 mins each* *Jaffe, Sorger, Thompson*	Overview presentations
11.45 - 12.45 PM	DCIC Presentations Data Coordination and Integration Center *Ma'ayan, Medvedovic, Schurer: 30 mins* External Data Science Projects: *10 mins each* *Bar-Joseph, Hornbeck, Yeung-Rhee*	DCIC: Science, Coordination eDSR: Science
12.45 - 1.15	LUNCH/Break	Boxed lunches provided
1.15 - 2.30	Breakout Session 1: DCIC-DSGC Data Coordination Issues Facilitators: Avi Ma'ayan, Caroline Shamu	The informatics and software groups from DSGCs and DCIC will meet to discuss API, data access procedures, data layers of abstraction, using common identifiers, linking data to external resources.
2.30 - 3.30	Breakout Session 2: Common Project (Facilitator: Joe Gray) Outreach (Facilitators: Jerry Li, Matt Reilly) Other topics (Facilitators: Caroline Shamu, Ajay Pillai)	Continue discussion & finalize the structure & outline of the Common Project planning.
3.30 - 3.45	BREAK	
3.45 - 4.45	Discussion with ESP participation on outcome of breakout sessions.	Aim: Work out action items from the breakout sessions.
	Walk back to hotel - Hilton Garden Inn	
5:00 - 5:30	NIH Staff and ESP closed meeting	
5.00 - 7.00	Wine and Cheese Reception and e-Posters at the Fallsgrove Ballroom	
7.00 - 9.00	Dinner and Discussion Fallsgrove Ballroom	

Acknowledgements

Many thanks for designing and assembling the program book and organizing the meeting

Sherry Jenkins	Icahn School of Medicine at Mount Sinai
Pedro Martinez	Icahn School of Medicine at Mount Sinai
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Miriam Rivera	Icahn School of Medicine at Mount Sinai

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