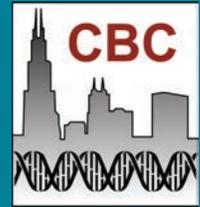


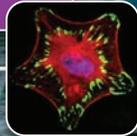
CHICAGO BIOMEDICAL CONSORTIUM

The University of Chicago
University of Illinois at Chicago
Northwestern University

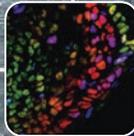
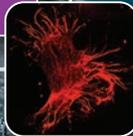


2013 Perspectives

NORTHWESTERN UNIVERSITY
EVANSTON

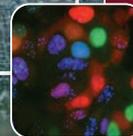


NORTHWESTERN UNIVERSITY
CHICAGO



UNIVERSITY OF ILLINOIS
AT CHICAGO

THE UNIVERSITY
OF CHICAGO



CBC Mission

The mission of the Chicago Biomedical Consortium is to stimulate collaboration among scientists at Northwestern University (NU), the University of Chicago (UChicago), and the University of Illinois at Chicago (UIC) that will transform research at the frontiers of biomedicine. The CBC works to:

- Stimulate research and education that bridge institutional boundaries
- Enable collaborative and interdisciplinary research that is beyond the range of a single institution
- Recruit and retain a strong cadre of biomedical leaders and researchers in Chicago
- Promote the development of the biomedical industry in Chicago
- Execute a plan capable of improving the health of citizens of Chicago and beyond



CBC Leadership

Three Scientific Directors set the overall direction of the CBC:

Brian Kay, PhD (*left*)
Professor and Head
Department of Biological Sciences
University of Illinois at Chicago

Shohei Koide, PhD (*right*)
Professor
Biochemistry and Molecular Biology
The University of Chicago

Richard Morimoto, PhD (*center*)
Bill and Gayle Cook Professor of Biology
Director, Rice Institute for Biomedical Research
Department of Molecular Biosciences
Northwestern University

Professional Staff

The CBC Core Staff connects people, manages projects, communications and finances in a multi-institutional matrix organization:

Kathryn Stallcup, PhD (*center*)
Executive Director

Karen Snapp, DDS, PhD (*far right*)
Senior Associate Director

Kimberly Corn (*second right*)
Associate Director, Business Operations and Finance

Jola Glotzer, MD (*far left*)
Communications Director

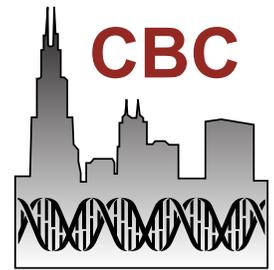
Corinna Kitcharoen, MBA (*second left*)
Program Coordinator



CHICAGO BIOMEDICAL CONSORTIUM

The University of Chicago
University of Illinois at Chicago
Northwestern University

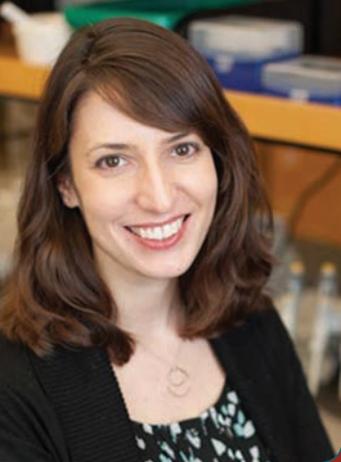
www.chicagobiomedicalconsortium.org



2013 Perspectives

The Searle Funds at The Chicago Community Trust began funding the Chicago Biomedical Consortium (CBC) at the level of \$5 million per year in 2006. To date, \$40 million has been invested in the CBC. As a result:

- The Chicago Biomedical Consortium is a **unique enterprise** and has been **extraordinarily effective in strengthening Northwestern, UChicago, UIC, and the city of Chicago.**
- CBC funding has **generated impressive advances in many areas of biomedical science**, including diabetes, cancer, heart disease, bacteriology, diagnostics, and technology development, that have been reported in **736 peer-reviewed publications.**
- CBC **makes Chicago-area scientists more competitive on the national level.** In the 2013 program year, CBC-funded projects won \$61 million of new NIH funding. This is an increase of 28% over the prior year, even when NIH funding overall has been decreasing.
- Since 2006, researchers have leveraged CBC funding almost 7-fold. Projects supported by the CBC have received **an additional \$275 million in outside funding**, primarily from the NIH. Using the standard multipliers, the **total economic input to the Chicago region is over \$1 billion during the last 7 years.**
- CBC has fostered **a culture of collaboration that is paying ever-greater dividends**, continuing a powerful tradition growing from **the vision of John G. Searle.**



Recruitment Award

“It has been exciting to join the CBC research community. I’ve enjoyed the chance to interact with faculty from other universities, and the

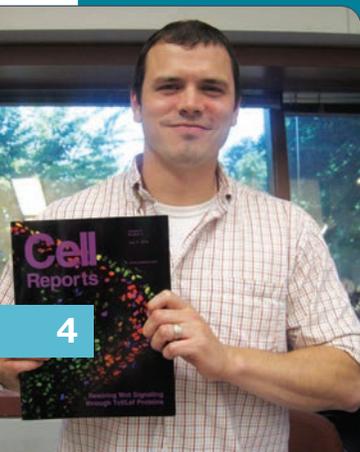
Recruitment Award has helped get my lab off to a strong start.” *SADIE WIGNALL*

Sadie Wignall received a CBC Junior Investigator Award and joined the NU faculty in 2011. She studies the process of cell division and its role in the development of female reproductive cells and in cancer. Sadie has been the recipient of a number of junior faculty awards, including the V Foundation for Cancer Research “V Scholar” Award, the March of Dimes Basil O’Connor Starter Scholar Award, and the Damon Runyon-Rachieff Innovation Award.

Scholar Award

Brian Shy, an MD/PhD student in the Biochemistry and Molecular Genetics department at UIC, was selected as a CBC Scholar in 2013. He studies signal transduction factors in development and cancer. His work on the role of these factors in breast cancer was recently published in *Cell Reports* and featured on the journal’s cover.

“Being a CBC Scholar has given me a terrific opportunity to connect with a great group of students from all three CBC universities -- and I had funding that let me travel and interact with my UChicago collaborators face-to-face.” *BRIAN SHY*



Catalyst Award

Jared Lewis (UChicago; left) and **Michael Jewett** (NU) are both Packard Fellows and met at the Fellows



meeting in California. They realized they would be perfect collaborators on a cutting-edge project to merge synthetic chemistry and synthetic biology, and that they could apply for a Catalyst Award to do the work. In the words of a member of the CBC Scientific Review Board, “Everyone in the world who works with proteins hopes this project is a success!” Jewett and Lewis received a Catalyst Award in Spring 2013.

“Funding from the CBC gives us the ability to explore new directions of research that might be considered too risky, especially in today’s funding climate.” *MICHAEL JEWETT*

Lever Award

Patricija van Oosten-Hawle is supported by one of the two CBC postdoctoral fellowships that are part of the Lever Award to the Chicago Center for Systems Biology. Working in the lab of Richard Morimoto (NU), she investigates how different tissues within a living animal communicate cellular stress conditions. Her work was recently published in the journal *Cell*.

“Being a CBC Fellow is not only an honor, it allows me to work with a multidisciplinary group that really pushes our research to a new level.”

PATRICIJA VAN OOSTEN-HAWLE





Catalyst Award

“Catalyst funding has come at a key stage, allowing us to test the possibility of using our discovery to create new treatments for MRSA.”

ROBERT DAUM

Antibiotic-resistant MRSA infections kill more Americans each year than AIDS, and new methods of treatment are urgently needed. Research by **Robert Daum** and **Susan Boyle-Vavra** at UChicago has identified the mechanism of MRSA antibiotic resistance. With Catalyst funding received in Spring 2013, they are partnering with **Michael Johnson**, medicinal biochemist at UIC, to search for potential drugs that can overcome resistance.

EAB Member

David Miller, President and CEO of the Illinois Biotechnology Industry Organization (iBIO), has followed the progress of the CBC since its launch in 2006, and became a member of the External Advisory Board (EAB) in 2011.



“The CBC is a vital driver of economic activity and serves as a discovery pipeline that fuels new company creation in Chicago.” *DAVID MILLER*

HTS Award

Ovarian cancer is the 5th leading cause of cancer death among women in the U.S. and has the highest mortality rate of all gynecologic malignancies. **Hilary Kenny** (UChicago) is the recipient of one of 11 awards in the CBC's new High-Throughput Screening (HTS) Award program. With CBC support, she is using the HTS core facility at UChicago and a sophisticated model to screen for molecules that have the potential to become drugs that block ovarian cancer metastasis.

Lever Award

David Eddington, Associate Professor of Bioengineering at UIC, has teamed with **Chad Mirkin** and **Milan Mrksich** of NU and **Joel Collier** of UChicago on the third CBC Lever Award, which helped establish the Chicago Center for Cancer Nanotechnology Excellence. As part of the Lever Award, Eddington oversees the UIC Microenvironmental Foundry, which provides microdevices to the CBC research community at no cost. To date, the foundry has worked with 15 labs on a wide variety of projects.

“Lever matching funds helped attract the \$12M NIH Center of Excellence to Chicago, and the Lever provides for the broad dissemination of our advanced technologies.”

DAVID EDDINGTON



“With CBC support, we can do specially-designed HTS assays, which are risky, but have the chance of leading to new ovarian cancer therapeutics.”

HILARY KENNY



CBC Funding and Educational Programs

Catalyst Awards

Catalyst Awards fund new high-risk/high-reward collaborative projects involving researchers from at least two of the CBC universities. **44 Catalysts** have been awarded as of July 31, 2013.

HTS Awards

High Throughput Screening (HTS) Awards are Supplemental Grants to help fund discovery of innovative small-molecule probes and drugs. Launched in 2013, this program aims to support pilot projects involving biomedically-relevant targets, to be conducted at a HTS facility located at one of the CBC universities. **Eleven HTS Awards** have been made to date.

Lever Awards

Lever Awards provide up to \$2.5 million to match collaborative large-scale federal awards for National Centers. To date, **five National Centers** have been established in Chicago with the help of CBC Lever Awards.

Spark Awards

Spark Awards have supported **seven innovative investigations**, ranging from studies of insulin regulation to ways to improve Magnetic Resonance Imaging (MRI) in human brain disease.

Recruitment Awards

Senior Recruitment Awards provide \$1 million for each university to hire a distinguished senior faculty member, and junior faculty recruitment awards have allowed each university to add two outstanding assistant professors. **Eight exceptional new faculty members** have been recruited to Chicago and established laboratories that currently **employ 90 research workers**.

Educational Programs

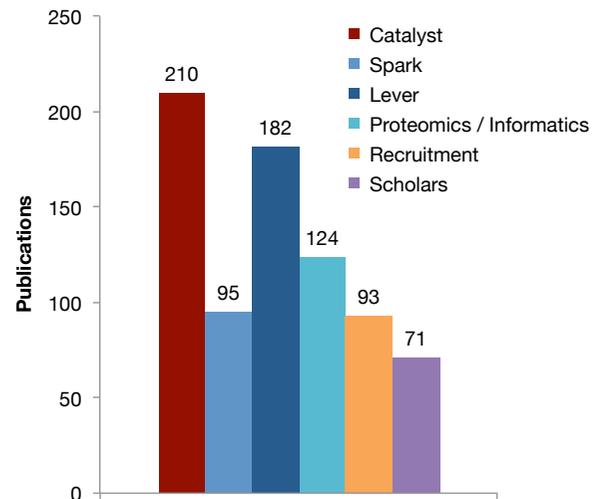
The CBC supports numerous **educational programs** that engage scientists at Chicago-area universities and local industry. To date, the CBC has organized and sponsored eleven annual symposia, sixteen workshops, eight seminars, three forums, CBC Science Day, the 'Loop Connections' Colloquium and CBC Tech Day. **Thirty-five meritorious** graduate students have been named as CBC Scholars.



Measures of Impact

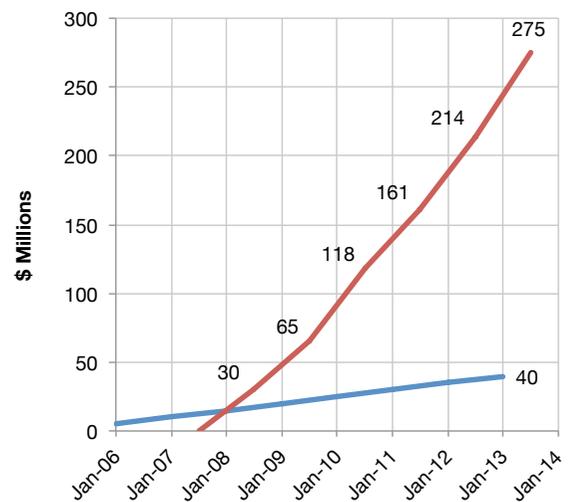
CBC Impact on Scientific Discoveries

As of July 31, 2013, a **total of 736 publications** have been attributed to CBC-funded research. All CBC programs have been very successful in contributing high-impact scientific discoveries. Cumulative publications associated with individual CBC award programs are shown to the right¹.



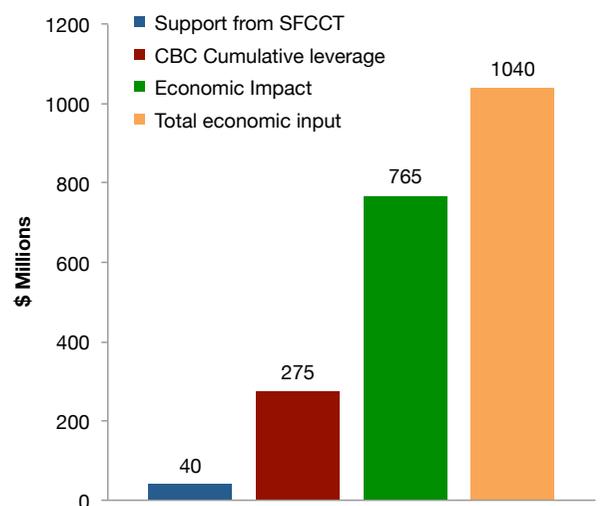
CBC Impact on Universities

From 2006 to 2013, the Searle Funds at The Chicago Community Trust (SFCCT) awarded \$40 million in funding to the CBC (*right, blue line*). The CBC used SFCCT funding to support cutting-edge basic biomedical research projects, which have gone on to win additional funding from external sources, primarily the NIH. By July 31, 2013, this **additional funding totaled \$275 million** (*red line*), **leveraging the SFCCT support by almost 7-fold**.



CBC Economic Impact on Chicago

Economists have calculated that, in Illinois, **each biomedical research dollar increases business activity by \$2.43^{2,3}**. Using this multiplier, the Economic Impact of the combined SFCCT (*right, blue bar*) and NIH research funding (*red bar*) is \$765 million (*green bar*). Thus, CBC activities (Cumulative leverage + Economic Impact) have provided a **total economic input of over \$1 billion** to the Chicago economy during the last 7 years (*orange bar*).



¹When an author has received more than one CBC Award (e.g. a Recruitment Award and a Lever Award), a single publication is counted in both categories.

²Ehrlich E. 2011. "An Economic Engine: NIH Research, Employment, and the Future of the Medical Innovation Sector." P. 11. United for Medical Research.

³Clinch R. 2012. "Presentation on Measuring the Economic Impact of R&D Investments." International Symposium on Assessing the Economic Impact of Nanotechnology.

Strengthening Chicago's Innovation Economy

- CBC has built a vibrant collaborative community involving thousands of local biomedical researchers.
- CBC-supported research has led to new inventions for the commercialization pipeline.
- CBC has expanded the innovation infrastructure, establishing new laboratories, creating jobs, and providing opportunities for biotech entrepreneurs.
- CBC is playing a leading role in Chicago's knowledge-based economy, a source of prosperity for the 21st century.



Credits

Images and photos: Richard F. Gaber (CBC Leadership and Staff, p. 2, Sadie Wignall, p. 4); Patrick van Oosten (Patricija van Oosten-Hawle, p. 4); Daniel Rodgers (Robert Daum, p. 5); University Technology Park at IIT website (David Miller, p.5); David Christopher (Hilary Kenny, p. 5); otherwise CBC.

Written by: Kathryn Stallcup, CBC. Design and layout: Jola Glotzer, CBC. Printed: 2013, PSD Graphic Arts, The University of Chicago.

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Front Cover

Images of fluorescently-labeled cells overlaid on a Google earth (©2013 Google) image of the Chicago area.

CBC-affiliated researchers contributed the cell images.

North: Northwestern University, Evanston campus (Chad Mirkin)

East: Northwestern University, Chicago campus (Jaclyn Shepard and Lonnie Shea)

West: University of Illinois at Chicago (Brian Shy and Brad Merrill)

South: The University of Chicago (Steve Kron)