



CHICAGO  
BIOMEDICAL  
CONSORTIUM

THE UNIVERSITY OF CHICAGO  
UNIVERSITY OF ILLINOIS AT CHICAGO  
NORTHWESTERN UNIVERSITY

# 2018 Perspectives



*The CBC gratefully acknowledges support from the Searle Funds at The Chicago Community Trust.*

# CBC Phase 2 Mission

---

Since entering Phase 2 in January 2017, CBC has embraced a newly refined and focused mission:

The mission of the Chicago Biomedical Consortium (CBC) is to stimulate collaboration among scientists at Northwestern University, The University of Chicago, the University of Illinois at Chicago and others to accelerate discovery that will transform biomedical research and improve the health of humankind.

The CBC will:

- Stimulate research and education that bridge institutional boundaries,
- Enable collaborative and interdisciplinary research that is beyond the range of a single institution,
- Mentor and develop a strong cadre of biomedical leaders, researchers, and entrepreneurs in Chicago,
- Enhance and promote the development of the biomedical ecosystem in Chicago,
- Facilitate development of therapeutics that will, over the long term, improve the health of citizens of Chicago and beyond.

## CBC Leadership

---

### **Luisa DiPietro, DDS, PhD**

*Scientific Director*

Associate Vice Chancellor for Research  
Director, Center for Wound Healing and Tissue Regeneration  
Professor of Periodontics  
Department of Periodontics  
University of Illinois at Chicago College of Dentistry

### **Lucy Godley, MD, PhD**

*Scientific Director*

Professor, Department of Medicine  
Section of Hematology/Oncology  
The University of Chicago

### **Richard Morimoto, PhD**

*Scientific Director*

Bill and Gayle Cook Professor of Biology  
Director, Rice Institute for Biomedical Research  
Department of Molecular Biosciences  
Northwestern University

## CBC Executive Director and Staff

---

### **James Audia, PhD**

*Executive Director*

Member of Executive Advisory Board for **UICentre**,  
The **NewCures** Advisory Board at Northwestern and  
The Joint Steering Committee for **Lakeside Discovery**

### **Kimberly Corn**

*Associate Director, Business Operations and Finance*

### **Jola Glotzer, MD**

*Communications Director*

### **Corinna Kitcharoen, MBA**

*Program Coordinator*

### **Karen Snapp, DDS, PhD**

*Senior Associate Director*

### **Nancy Tyrrell**

*Associate Director for Translational Activities*

**Front Cover:** Chicago skyline. Photo courtesy of Brian Kay, UIC.

Photographs: CBC, or as indicated in the legends.

Written by: Jim Audia, CBC. Design and layout: Jola Glotzer, CBC.

This magazine is the property of the Chicago Biomedical Consortium (CBC) and is intended for the CBC's use only. It is not to be used for solicitation by any person, business, or organization for non-CBC purposes.



[www.chicagobiomedicalconsortium.org](http://www.chicagobiomedicalconsortium.org)



@CBC\_ChiBiomed



[www.facebook.com/chicagobiomedicalconsortium](http://www.facebook.com/chicagobiomedicalconsortium)



# CHICAGO BIOMEDICAL CONSORTIUM

THE UNIVERSITY OF CHICAGO  
UNIVERSITY OF ILLINOIS AT CHICAGO  
NORTHWESTERN UNIVERSITY

## 2018 Perspectives

---

The CBC was inaugurated in 2006 with a generous grant of \$5 million per year from the Searle Funds at The Chicago Community Trust. To date, \$60 million has been invested in the CBC. As the CBC fully embraces its Phase 2, efforts continue to leverage the strong foundation that has been established and intensify the focus on translational research and entrepreneurship.

### **As of December 2018, the CBC has supported:**

- Discovery and cutting-edge research virtually in all therapeutic areas — including antibiotic resistance, cancer, heart disease, drug development, mental health and neurological disorders, and diabetes — through 306 awards to faculty members, postdoctoral fellows, and students;
- Recruitment of 8 outstanding senior and junior faculty members who have gone on to receive numerous national awards;
- Acquisition of state-of-the-art instruments to enable ground-breaking investigations of key biomedical questions;
- Professional development programs for graduate students and postdoctoral fellows;
- Mentoring assistance for researchers interested in commercializing discoveries;
- Sixteen Annual Symposia and over 30 other events showcasing research supported by the CBC and high-end technologies available at CBC universities.

### **Notable outcomes of CBC support include:**

- Publication of over 2210 peer-reviewed articles based on CBC-funded research;
- Establishment of six national research centers at CBC universities;
- Encouragement of a broad array of inter-institutional collaborations, including the Open Access Initiative;
- Engagement of biotechnology investors within the CBC community, exemplified by the landmark partnership between Northwestern University and Deerfield Management to form Lakeside Discovery;
- Projects launched by the CBC have gone on to earn well over \$616 million in additional funding, with a total estimated economic input exceeding \$2 billion for the Chicago economy overall.

**The Searle Funds**  
at The Chicago Community Trust



# Summary of CBC Phase 2 Award Programs

CBC's Phase 2 builds on the strong foundation from Phase 1, retaining the successful **Catalyst Award** program, which completed round 26 in the fall 2018. Phase 2 has introduced three new programs: the **CBC Accelerator Network** (CBCAN; see p. 8), the **Accelerator Award** program and the **Entrepreneurial Fellows Award** program.

## Catalyst Award Program

The **Catalyst Award** program supports new inter-institutional cutting-edge biological/biomedical projects that are high risk/high-reward, innovative and transformative. Catalysts are one-time incentive awards and not intended to support incremental progress, obvious next steps, or NIH ready projects. The program offers up to **\$250,000** for up to two years of funding. Applicants must be tenured or tenure-track faculty at the CBC universities who will initiate a new collaborative research project. Research proposals must have Co-Principal Investigators from at least two of the CBC universities. Catalyst applications are accepted twice a year.

## Accelerator Award Program

The **Accelerator Award** program supports translational research and provides university researchers with early commercial guidance. These awards are to be used to support the earliest, and therefore highest risk, stage of commercially-directed research focused on the development of a therapeutic or an associated biomarker or diagnostic. The program offers up to **\$100,000** for one year and projects that meet proposed milestones will be invited to apply for up to **\$150,000** for an additional year. Applicants must be tenured or tenure-track faculty or faculty with full time clinical track appointments with research programs at one of the three CBC institutions. All applicants must have their own designated laboratory space. The program is offered twice a year.

The Accelerator Review Board (ARB) evaluates the proposals and mentors the applicants. The board is composed of representatives from the pharmaceutical industry, the universities' technology transfer offices, and mentors identified from the CBC and its member institutions. Current board membership encompasses an impressive breadth of contributors, including representatives from AbbVie, Eli Lilly and Company, Rush University, MATTER, PROPEL, Cleveland Clinic, UICentre, INVO, Polsky Center for Entrepreneurship and Innovation and ZS Associates. The ARB approves projects based on significance, translational potential, marketability of the proposed product, preliminary data, and the soundness of the proposed milestones to discharge key elements of risk. The program had a great start with the first two application cycles completed in 2018.



Shiva Shahrara, UIC, discusses her Accelerator project in front of the ARB members at a CBC Accelerator Network (CBCAN) meeting (see more on p. 8).

## Entrepreneurial Fellows Award Program

The **Entrepreneurial Fellows (EF) Award** program identifies and supports the professional development of academic researchers who are keen to acquire the skills and experiences needed to move translational projects from a university lab toward commercialization and potentially into a Chicago-based biotech start-up. The program exposes Fellows to a breadth of real-world experiences with the full span of their home institution and across the CBC community. Fellows will receive guidance from a wide range of mentors, including university faculty, staff and technology transfer, industry experts and other representatives of the biomedical community.

Candidates must be recent PhD recipients or will have recently completed an initial postdoctoral training in the biomedical sciences with a strong interest and passion for driving innovative and transformational biomedical research from the university toward clinical and commercial applications. CBC anticipates that the EF program will support up to 3 Fellows for each member institution, forming a peer network and community that will contribute additional value to the experience. The term of the Fellowship is intended to be 2 years to allow for exposure to multiple rounds of translational proposal development in addition to a durable imbedding in one or more translational program teams through the completion of multiple milestones. Salary and benefits are highly competitive, include travel in support of project team goals and the Fellow's professional development.

# Meet Our Most Recent Awardees

## Chuan He, UChicago

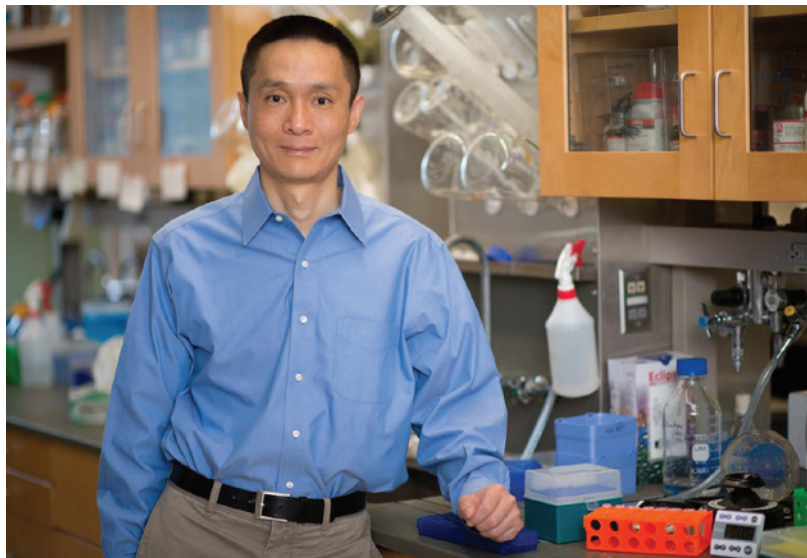
### *Recipient of a CBC Accelerator Award, 2018*

Colorectal cancer (CRC) is a major cause of cancer-related deaths in the US. CRC patients with unresectable metastasis have less than 15% five-year survival rates, whereas cure rates for colon cancers diagnosed at earlier stages are much higher. Early detection and prevention, using colonoscopy, is still a challenge since compliance for eligible individuals remains below 50%. An effective and convenient test would drive more patients to early treatment, increasing overall survival rates.

DNA cytosine modification is a well-established epigenetic mechanism that affects global gene expression and is extensively remodeled during cancer development and progression. DNA 5-methylcytosine (5mC) and 5-hydroxymethylcytosine (5hmC) serve as promising disease markers as aberrant patterns in their genomic locations and abundances correlate with disease development and progression.

The He lab has developed a blood-based assay that uses a highly sensitive and selective chemical labeling technology to capture these markers in cell-free DNA, followed by next generation sequencing to map their distributions. The test compares favorably to other available assays at a lower cost with anticipated much higher and friendlier patient compliance. Accelerator funds will support the further development and optimization as a diagnostic.

He is a recipient of multiple CBC awards, including Catalyst Awards in 2009, 2011 and 2016; he has numerous CBC Postdoctoral Research Awards for his laboratory and presented at CBC's 10<sup>th</sup> Annual Symposium on Epigenomics in 2012.



Chuan He, PhD, Professor of Chemistry, UChicago.  
Source: UChicago website.

## Yulia Komarova, UIC

### *Recipient of a CBC Accelerator Award, 2018*

Age related macular degeneration (AMD) is a leading cause of vision loss in older patients. The leading current therapy requires frequent injections into the eye, which is highly burdensome to the patients and healthcare providers. Therefore, there is a great need for the development of therapies targeting the underlying causes of AMD that decrease this burden and remain highly effective, while avoiding the need for frequent injections into the eye.

The Komarova lab has designed a novel therapy which they have named EBIN, that has shown to be effective via eyedrop in treating the underlying causes of AMD when tested in rodent models. However, as only non-human primates have eye structure closely related to humans, there is a strong need to understand whether EBIN works well in treating the underlying causes of AMD in the non-human primate retina in order to bring EBIN to future clinical trials. This Accelerator Award helps to enable these critical translational experiments, paving the way forward for a less invasive and more patient-friendly treatment for AMD.

The Accelerator Award is Komarova's initial funding from CBC.



Yulia Komarova, PhD, Associate Professor of Pharmacology, UIC.



## Meet Our Awardees, cont.

### Yamuna Krishnan, UChicago and Dimitri Krainc, NU

#### *Co-recipients of a CBC Catalyst Award, 2017*

The newly funded cross-functional Catalyst Award team of chemist Krishnan and neuroscientist Krainc proposes to develop a novel diagnostic for lysosomal function with possible application in many lysosomal disorders. The lysosomal pathway integrates important cellular processes in all cell types, but finds particular importance in supporting the unique physiological demands of neurons.

There is a preponderance of disease-causing and risk genes for various neurological disorders, including over 60 lysosomal storage disorders. These genes have predicted sites of action within the lysosomal pathway, suggesting that disruption of lysosomal function plays a key role in these disorders. However, it has not yet been possible to measure lysosomal function with current techniques in human tissues. Here, the collaborative team seeks to develop an ultrasensitive diagnostic that works by measuring lysosomal integrity, and thereby function, in easily accessible cells derived from blood draws.

Importantly, this approach will be suitable for high throughput platforms, with potential application in clinical trials where lysosomal function could be used as a readout of therapeutic intervention.

Krishnan has previously received CBC funds for a Postdoctoral Research Award in her laboratory, while the Catalyst Award is Krainc's initial CBC funding.



### Minglei Zhao, UChicago and Xiaojing Yang, UIC

#### *Co-recipients of a CBC Catalyst Award, 2017*

Allosteric regulation of protein function is central to many important biological processes in cell signaling and disease biology. Because allosteric action involves long-range communication in protein structures, watching the structural dynamics of these macromolecules at work holds the key for mechanistic understanding of their function and thereby for developing new strategies to address human diseases caused by impaired regulation.

However, currently, there is no biophysical method for direct observation of large-scale protein movement at atomic or near-atomic resolution. The newly funded Catalyst team proposes to develop a novel methodology to directly observe and measure functionally relevant structural movements in macromolecular complexes by transforming cryo-electron microscopy (cryo-EM) from an imaging technique to a dynamic approach. By analogy, this project will convert still photographs into movies.

This challenging approach promises to provide mechanistic insights that cannot be obtained by other means. It will reveal precisely how protein function is controlled and how impaired allosteric regulation of protein function might be targeted with drugs.

Yang was a featured speaker at CBC's 16<sup>th</sup> Annual Symposium, *A New Age of Structural Biology: Structure Meets Dynamics*. The Catalyst Award is the initial CBC funding for both Yang and Zhao.



## Alexandra Naba, UIC and John Varga, NU

*Co-recipients of a CBC Catalyst Award, 2018*

Fibrosis is a disease characterized by excessive extracellular matrix (ECM) deposition, representing a global health concern and a major unmet medical need. Indeed, it is estimated that 45% of all deaths are attributed to complications of fibrosis. The biochemistry of fibrosis in distinct organs such as lung, heart and skin, remains poorly characterized, representing a major gap in knowledge. A powerful novel technology now permits, for the first time, accurate quantitative proteomic evaluation of the ECM composition or “matrisome” of normal and fibrotic tissues.

This collaborative Catalyst team, comprised of a senior investigator Varga and a new junior faculty Naba, will optimize and use this approach to understand how fibrosis alters the biochemical structure of key organs using an experimental model of fibrosis in the mouse. Results from their proposed analysis of the extracellular matrix may provide powerful insight into the nature of fibrosis, generate potential unique biomarkers for fibrosis, and have significant relevance for the understanding and treatment of systemic sclerosis and other currently incurable human fibrotic diseases.

The Catalyst Award is the initial CBC funding for both Naba and Varga.



Alexandra Naba, PhD, Assistant Professor of Physiology and Biophysics, UIC College of Medicine and John Varga, MD, Professor of Medicine (Rheumatology), Dermatology and Pharmacology, NU Feinberg School of Medicine. Source: Twitter.

## Narayanan Kasthuri, UChicago and Irina Balyasnikova, NU

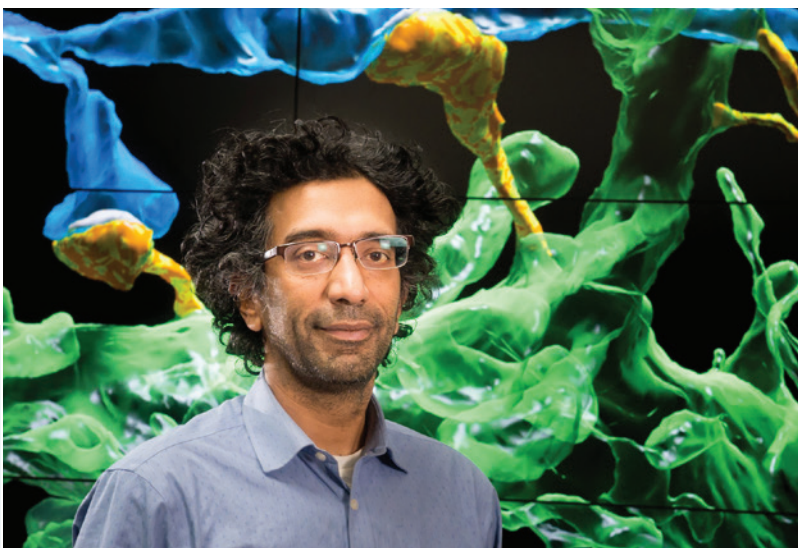
*Co-recipients of a CBC Catalyst Award, 2017*

Brain diseases are an enormous economic burden worldwide. Stem cell therapy promises to help by rewiring malfunctioning brains: replacing damaged neurons and their connections with new neurons derived from stem cells (SCNs). This promise, however, remains unfulfilled. The sheer complexity of brains (e.g. ~ 100 billion neuronal connections made by ~ 100 million neurons in the mouse) has stymied understanding of fundamental questions about stem cells and brains: how do stem cells navigate this vast ‘jungle’ of nerve cells to arrive at specific sites? How do they connect with neurons already connected to other neurons by thousands of pre-existing connections?

The team has developed a multi-scale brain mapping imaging platform that reconstructs stem cell derived neurons specifically over entire brains and, with nanometer precision, identifies their neuronal connections. By providing definitive answers about how stem cells integrate into brains, the team will identify future targets for improving stem cell therapy for brain diseases. With the increase in incidence of neurodegenerative diseases as a result of the aging population, the understanding provided by this research offers hope for restorative therapies for currently untreatable brain diseases in the future.

The Catalyst Award is the initial CBC funding for both Kasthuri and Balyasnikova.

Narayanan (Bobby) Kasthuri, PhD (left), Assistant Professor in Neurobiology, UChicago and Argonne National Laboratory, and Irina Balyasnikova, PhD, Associate Professor of Neurological Surgery, NU Feinberg School of Medicine. Source: Argonne and NU websites.



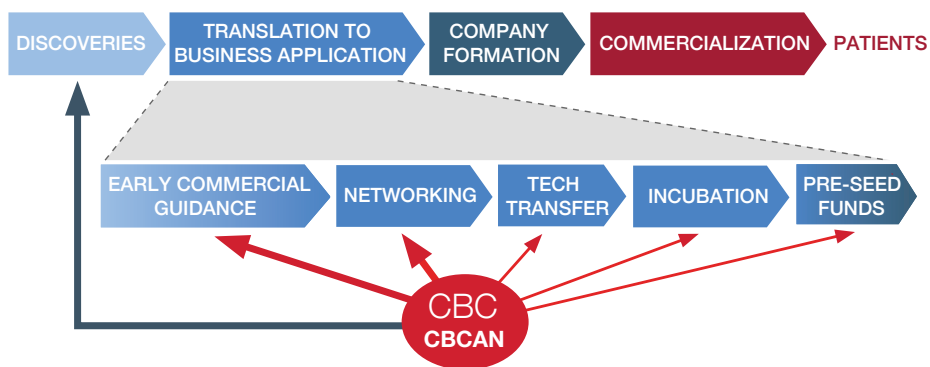
# CBC in the Larger Community

## CBC Accelerator Network (CBCAN)

*Established as a Fixture in the Community  
and a Centerpiece of CBC's Phase 2 Programming*



The **CBCAN** has created a community in the greater Chicago area, bringing together industry experts, university technology transfer officers and university researchers with innovative discoveries that may have commercial potential. With an overall aim to advance promising discoveries into the pipeline towards commercialization, the opportunity afforded by CBCAN is to provide critical guidance, both technical and commercial, that universities and university-based researchers require.



Since its inaugural event in March 2017, CBC has hosted 10 CBCAN events covering a broad range of topics with the common theme of advancing translational research toward commercial reality. Some of the early events were informational, establishing the foundation for new Phase 2 CBC programming. However, since February 2018, a primary focus of the CBCAN has been serving as a venue for presentation of preliminary proposal Letters of Intent (LOI) for Rounds 1 and 2 of the Accelerator Award. These presentations have allowed investigators to obtain input from key external experts that has been influential in refining and maturing the proposals, leading to stronger and more viable full proposals. Other content has been intermingled, with an excellent panel discussion from local regulatory experts outlining the path toward an Investigational New Drug application (IND) filing, and a convening of the CBC institution's core facilities leadership to showcase the cores and the Open Access Initiative, including CBC's role in advancing that capability. The "Fireside Chat with Jigar Raythatha, CEO, Constellation Pharmaceuticals," hosted by Jim Audia in December, culminated the series of 2018 CBCAN meetings. Future meetings will also include Entrepreneurial Fellows' presentations and project updates.





# Elevating CBC's Visibility and Impact

The CBC has made significant progress during 2018 in elevating its visibility both locally and more broadly. Crucial to our strategy in this regard is the use of the CBC website ([www.chicagobiomedicalconsortium.org](http://www.chicagobiomedicalconsortium.org)) which serves as a central hub for CBC news and programming. New content is frequently added to the website (over 200 new postings since January 2018, including success stories reporting on CBC-funded investigators, a Director's Corner blog on biomedical research, and CBC-specific and other news).

Interest in the CBC on social media has dramatically increased since 2017. For example, a recent LinkedIn posting advertising the 2018 CBC Annual Symposium enjoyed 1353 views, with local, regional, national and international interest. Finally, a new branding campaign has resulted in greater consistency across CBC content and promotional materials, increasing visual recognition within the community.

A few quotes from Twitter (@CBC\_ChiBiomed) shown below provide examples of the CBC interactions with the community and demonstrate that the community members are paying close attention to the CBC news and display gratitude for the CBC provided funding and educational opportunities:

**Terry Moore** @MooreLab · Feb 1  
Replying to @CBC\_ChiBiomed @UICscience and 2 others  
And thanks to @CBC\_ChiBiomed for their continued funding of biomedical research in Chicago! We scientists in Chicago are so fortunate to have the support of the CBC!

1 retweet 3 likes

**Laura Sanchez** @DrLauraSanchez · Apr 27  
Well done Katherine for being awarded a poster award at the #Perlman Symposium today @UWMadisonMMI Exciting work from our previously @CBC\_ChiBiomed funded collab with @markjmandel

1 retweet 4 likes 19 likes

**Maciej Lesniak, MD** @maciejlesniakmd · Aug 22  
Replying to @CBC\_ChiBiomed @NeurosurgeryNM and 2 others  
Thank you. CBC support has been key to my endeavors!

3 likes

**Michael Walsh** @MJWalsh\_UIC · Sep 12  
Excited about paper accepted today (my 40th!) in @TransplantJrnl with @AhusainPath and @Iuraizee3MD from @UChicagoPath. "Label-free identification of antibody-mediated rejection in cardiac allograft biopsies using infrared spectroscopic imaging." Kindly funded by @CBC\_ChiBiomed

3 retweets 7 likes 24 likes

**Naba Lab** @NabaLabUIC · Sep 25  
Beyond thrilled to have received a 2-year @CBC\_ChiBiomed Catalyst Award to study the #ECM of #Scleroderma using #Proteomics with my collaborator John Varga @NUFeinbergMed! #FirstGrantAsPI

**CBC** @CBC\_ChiBiomed  
3 teams receive new CBC Catalyst Awards! Congrats!  
-Bruce Lahn @UChicago @UChicagoNews &  
@maciejlesniakmd @NorthwesternU @ResearchNU  
-Alexandra Naba @NabaLabUIC @thisisUIC & John...

4 retweets 24 likes

**Yamuna Krishnan** @KrishnanYamuna · Oct 12  
Replying to @CBC\_ChiBiomed  
Thank you CBC! Empowered by you. :-)

2 retweets 7 likes

**UIC News** @UICnews · Jun 4  
Three @uiccom researchers receive funding from @CBC\_ChiBiomed, which works to support discoveries that transform biomedical research and improve health. [bit.ly/2sG8mB8](http://bit.ly/2sG8mB8)



4 retweets 10 likes

**Laura Sanchez** @DrLauraSanchez · Jun 21  
@CBC\_ChiBiomed Open Access Initiative with resources and cores across Chicago #leveragingstrengths #collaborativescience @JimAudia moderating the Q&A targeting gaps for #drugdiscoveryinacademia



1 retweet 3 likes

**Jaehyuk Choi** @jaehyukchoimd · Aug 1  
Thank you to @SkinCancerOrg @LeukemiaRF @CBC\_ChiBiomed for supporting us early on.

**FNIH** @FNIH\_Org  
Announcing the three finalists selected for the FNIH Trailblazer Prize for Clinician Scientists! Learn more about these finalists and their accomplishments: [ow.ly/oe330lcxWk](http://ow.ly/oe330lcxWk) #clinical #science #research



2 retweets 12 likes

# 2018 Year Highlights

## “On the Table”

### *A Luncheon hosted by the CBC*

The “**On the Table**” series of events was launched by **The Chicago Community Trust** in 2014 to bring together groups of people to discuss ways to create a stronger community here in Chicago and beyond. In that tradition, on **May 8, 2018**, the CBC hosted an “On the Table luncheon” at Remington’s Restaurant in downtown Chicago. The luncheon was both an opportunity to thank the Searle Funds at The Chicago Community Trust for their support over the years and to discuss the status of the current biotech/biomedical activities in the Chicago area. Other aims included identifying unmet needs, and more effective collaboration to strengthen the greater biomedical community.

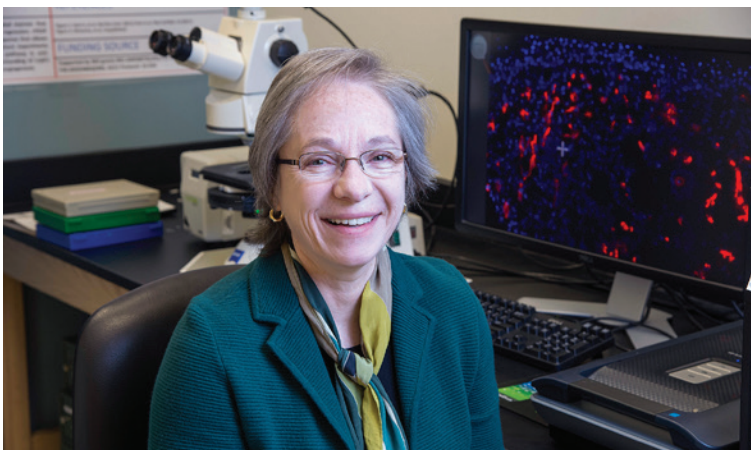
A diverse group of nineteen people attended the lunch, including CBC leadership, faculty members and technology transfer officers from the three CBC universities, members of the Chicago-based biotech community and pharmaceutical companies, and representatives from the Kinship Foundation and The Chicago Community Trust. The lively discussion focused on ways to work together to make the Chicago-based biomedical community stronger and to move novel health-improving research projects into the commercialization pipeline. The CBC continues its work towards strengthening and expanding the biomedical enterprise and entrepreneurial spirit found at our universities and within our community and accelerating the development of therapeutics and diagnostics that will, over the long term, improve the health of our citizens.



CBC guests at the ‘On the Table’ lunch (from the left): Tom O’Halloran, NU, Renee Michaels, Kinship Foundation and Alicia Löffler, NU INVO.

## Dr. Luisa DiPietro Joins CBC as Scientific Director for UIC

### *Successor to Dr. Brian Kay who served in the role since 2011*



Luisa DiPietro, DDS, PhD, UIC. Source: UIC today.

CBC welcomed **Dr. Luisa A. DiPietro** as the new CBC Scientific Director for UIC. Dr. DiPietro’s nomination for this important position was officially announced by Susan Poser, UIC Provost and Vice Chancellor for Academic Affairs, on **June 5, 2018**.

Dr. DiPietro brings a distinguished set of experiences and credentials to the role for UIC, where she is currently Professor of Periodontics, Director of the Center for Wound Healing and Tissue Regeneration, Associate Vice Chancellor for Research, and Director of the KL2 Career Development Program for the UIC Center for Clinical and Translational Science. She joins existing Scientific Directors Rick Morimoto, Northwestern University, and Lucy Godley, UChicago, and Executive Director, Jim Audia as the CBC leadership team.

The Scientific Directors of the CBC partner closely with the Executive Director to guide the current Phase 2 programming and cultivate the best opportunities to realize the long-term mission to stimulate collaboration among scientists at the member universities and to accelerate discovery that will transform biomedical research and improve human health. Each Scientific Director represents the CBC within their own institution and their institution within the CBC, but also continually explores new ways to enhance the larger Chicago biomedical community.

## Deerfield Comes to Chicago

### *CBC excited to support Lakeside Discovery*

On **June 15, 2018**, the CBC joined with other leaders in the community celebrating the launch of Lakeside Discovery, a partnership between Northwestern University (NU) and Deerfield Management formed to accelerate the translation of transformative biomedical technologies. The launch event featured a distinguished lineup of guests and speakers including Jonathan Holloway, NU Provost, Rahm Emanuel, Chicago Mayor, Morton Schapiro, NU President, Jay Walsh, NU Vice President for Research, Alicia Löffler, Associate Provost and Head of NU's INVO, Rick Silverman, Patrick G. Ryan/Aon Professor of Chemistry and Molecular Sciences, NU, Eric Neilson, NU Feinberg School of Medicine Vice President for Medical Affairs and Lewis Landsberg Dean, James Flynn, Deerfield Managing Partner, and Peter Steelman, Deerfield Partner.

Lakeside Discovery, which will receive a 5-year investment term and \$65 million as an initial number, will be governed by a Joint Steering Committee (JSC) with equal representation between NU and Deerfield. In addition, Steelman noted, **“We are delighted to have as another member of that team, Jim Audia from the CBC; we think that this is a fantastic combination between Deerfield and Northwestern to have that team evaluating projects.”**

Lakeside Discovery's mission strongly aligns with CBC's Phase 2 mission, and it is natural for CBC to lend its support to this new effort.



Officials from NU and Deerfield Management gather to celebrate the launch (from the left): Peter Steelman, Alicia Löffler, James Flynn, Chicago Mayor Rahm Emanuel, Jonathan Holloway, Eric Neilson, Rick Silverman and Jay Walsh.  
Source: Lakeside Discovery website. See text for other affiliations.

## Cutting Edge Discoveries and Technologies in Structural Biology

### *16<sup>th</sup> Annual Symposium, A New Age of Structural Biology: Structure meets Dynamics*

The CBC held its **16<sup>th</sup> Annual Symposium** on Wednesday, **October 3, 2018** at the Feinberg Conference Center in Northwestern Memorial Hospital. The event was organized by NU's Alfonso Mondragón, with faculty members from all three CBC universities, including Valerie Tokars, NU, Anthony Kossiakoff, UChicago, and Arnon Lavie, UIC. Over 180 scientists attended this outstanding meeting which included six outstanding cutting-edge scientific presentations, a Data Blitz highlighting six posters presented by graduate students and post-docs, an interactive poster session, and a networking reception at the conclusion of the event.

Speakers included Jingyi Fei, UChicago, Janet Smith, UMichigan, Reza Vafabakhsh, NU, Eric Xu, Van Andel Research Institute, André Hoelz, Caltech and Xiaojing Yang, UIC. Talks focused on the biology of cellular structures and the structural and computational technologies used to understand how structure is converted to function.



16<sup>th</sup> Annual CBC Symposium (from the left): Jim Audia, Valerie Tokars, Anthony Kossiakoff, Alfonso Mondragón, André Hoelz, Eric Xu, Janet Smith, Reza Vafabakhsh, Xiaojing Yang, Jingyi Fei and Arnon Lavie. See text for affiliations.

# Where we stand today

## HTS Supplemental Grants

- Small molecule discovery grants
  - Up to \$20K for one year
  - \$0.617M funded 35 awards
  - \$29.1M in follow-on grants
    - 47.2 leverage ratio
- 35+ peer-reviewed publications
  - Program ran 2013-2016

## Accelerator Awards

- Support innovative translational research
- Up to \$100K for one year
- \$0.5M funded 5 awards to date
- 4 more projects are eligible for funding
- Program currently running since spring 2018

## Lever Awards

- Leveraged multi-million dollar federal center grants
  - \$12.9M funded six awards supporting 6 national centers in the Greater Chicago area
  - \$215.6M in follow-on grants
    - 16.7 leverage ratio
    - 830+ peer-reviewed publications
- Program ran 2006-2014

## Postdoctoral Research Grants

- Postdoctoral fellow training grants
- Up to \$15K for one 18 months
- \$1.6M funded 107 awards
- \$8.6M in follow-on grants
  - 5.4 leverage ratio
  - 105+ peer-reviewed publications
    - Program ran 2014-2016

## Spark Awards

- Supported high impact, novel science
- Up to \$400K per award
  - \$2.8M funded 7 awards
  - \$50.9M in follow-on grants
    - 18.2 leverage ratio
  - 175+ peer-reviewed publications
    - Program ran 2008-2011

## Infrastructure Awards

- \$3M funded 3 awards, 1 per each CBC school
  - \$20.8M in follow-on grants
  - 6.9 leverage ratio
  - 10+ peer-reviewed publications
  - Program ran in 2014

## Recruitment Awards

- Two awards at \$1M each helped recruit two Senior Investigators to CBC institutions
  - \$59.5M in follow-on grants
    - 29.7 leverage ratio
- Six awards at \$0.5M each helped recruit six Junior Investigators
  - \$20.5M in follow-on grants
    - 6.8 leverage ratio
- 320+ peer-reviewed publications
  - Program ran 2006-2010

## Scholar Awards

- Graduate student training grants
- Up to \$5K for one year; renewable
- \$384,000 funded 44 awards
- 210+ peer-reviewed publications
- Program ran 2010-2016

## Catalyst Awards

- Support new collaborative inter-institutional fundamental science
- Up to \$250K for one-two years
- \$18.6M funded 89 awards to date
- \$208.4M in follow-on grants
- 11.2 leverage ratio
- 535+ peer-reviewed publications
  - Program running since 2006