

# Chicago Council On Science & Technology

## 2015 Year In Review



# President's Message



We are proud to present our 2014 – 2015 Annual Review to our supporters, members and friends.

Chicago Council on Science and Technology brings high-quality programming to the public on a variety of topics, featuring members of the local scientific community. These researchers and professionals can best

speak to what is happening in their respective fields, as they are the ones shaping the discoveries that oftentimes affect us, without us even knowing it. We strive to educate and invigorate people about the joy and relevance of science and technology to their everyday lives.

In 2015, we launched two successful initiatives that we hope to continue for the upcoming years. C²ST had our first ever Artist in Residence (AIR), Aaron Freeman, who has been sharing his take on different science topics on his AIR page on our website and our social media outlets. Our new pub science series, the C²ST Speakeasy, has been held regularly at Geek Bar Chicago, and has garnered a younger audience for C²ST in a more casual atmosphere.

We also expanded our partnerships in 2015. We co-hosted an event as part of the Field Museum's successful 'Evolution at Revolution' program, established an ongoing partnership with the Chicago Chapter for the Society for Neuroscience on several programs, both this year and for 2016, and established a robust working relationship with the Chicago Public School system. Science teachers now receive notices about our programs, and receive continuing education credits for attendance at our events. We hope to continue to expand our ever-growing roster of partnerships with Chicago-based institutions.

Looking ahead, it is our goal to establish a working partnership with the Chicago entrepreneurial community.

We would like to feature more speakers from startups who have successfully commercialized scientific concepts and technologies in the Chicago area.

We will also be hosting three virtual events in 2016, via Google Hangouts. In addition to our live streamed events, this will allow C²ST fans from outside of the Chicago area to take part in our programming, and provide an opportunity to attend some events from the comfort of your home.

In the past five years, we have presented four different Women in STEM programs to support women at different stages of their STEM careers (as well as girls considering a career in the sciences), and to build an overarching citywide Women in STEM community in Chicago. We hosted these programs biannually and annually, but in 2016 we are looking into at least two Women in STEM programs for the year. We are already in the planning stages for these events, working with other 'women in science' groups in the city.

Many of you know us through our programming but we are proud of the fact that we are a true consortium and connector of the business, private and public academic and research institutions, museum, schools and other nonprofit organizations in Chicago. We thank you for your essential support and partnership in helping us deliver our mission!

Please save the date for Thursday, May 5th 2016, as we will again offer a great networking opportunity and a seated dinner with Chicago's scientific, business and philanthropic leaders as part of our Annual Fundraising Gala at UI Labs. We hope to see you at one of our many programs in 2016!

**Alan Schriesheim, President**  
C²ST

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# On The Table



Last May, C<sup>2</sup>ST took part in the On the Table event celebrating the Chicago Community Trust's centennial year by joining more than 20,000 residents from across the city to initiate conversations about civic involvement in Chicago.

The mealtime conversation, sparked by trying to understand and encourage philanthropy, created a reflective and inspiring environment where attendees shared personal experiences of giving and receiving and discussed the importance of being involved in and improving the community.

Joining C<sup>2</sup>ST in this discussion were, IIT's Director in the Office of Community Affairs, Jodi Joulahan, Program Director of IIT's Boeing Scholars Academy, Annie Senior, Director of IIT's Corporate Relations, Scott Klapman, and Executive Assistant for IIT's Corporate Relations, Maggie Garcia.

As each participant explored their connection with Chicago, almost all members recognized the importance of contributing to the enhancement of the community in which they live. Members discussed how Chicago provides a vibrant environment with numerous opportunities for its residents, creating a sense of home and connection between individuals and this environment. Most attendees agreed that this sense of belonging and the ability to see the beneficial consequences of their contributions around them drove their desire to actively work towards bettering Chicago. As the president of C<sup>2</sup>ST, Alan Schriesheim, explained, "I mainly support the Chicagoland area. It's a matter of being a member of the community where you live and being involved in the community."

The conversation not only prompted participants to reflect on their personal philanthropic initiatives, but it also made clear that C<sup>2</sup>ST is capturing its responsibility to its city and home through its region-wide involvement and diverse educational events.

As C<sup>2</sup>ST's Executive Director, Krisztina Eleki, stated, "C<sup>2</sup>ST is a connector in the community." It is able to bridge the gap between "the academic environment and other non-profits or national labs and city colleges and high schools" by providing access to resources and leaders to help create a more cultured and united community.

C<sup>2</sup>ST's Director of Programming, Chris Eppig explained that there are many individuals, especially adults, "who are not in school but still have questions and fears but no outlet for getting those questions answered by qualified individuals." Eppig went on to say, "seeing the world through ... the eyes of a scientist has always given me a bigger appreciation for everything I look at and I'd like people to give other people a glimpse of what that is like so that they can experience the same kind of enrichment through it that I do."

C<sup>2</sup>ST is proud to be the source of such opportunities and to promote accessibility of information for these individuals in order to support a curious culture of learning and create a more scientifically literate Chicago.

C<sup>2</sup>ST has participated in a survey about the On the Table event for the Institute for Policy and Civic Engagement at the University of Illinois at Chicago to help interpret the influence of this citywide conversation.

**By Ameena Khan, C<sup>2</sup>ST 2015 Spring Intern,  
current student at Illinois Institute of Technology.**

**"Good speakers with clear content.  
A wonderful asset for Chicagoland."**

**—Audience Member**  
How to be Healthy When You're Older



# Rattling The Brain

Heaps of presents and family gatherings aside, this holiday season we saw the release of the film 'Concussion,' a fact-based, not documentary, account of the clash between pathologist Bennet Omalu and the NFL when Omalu discovered brain trauma in football players and attempted to shed light on this crisis.

Coinciding with this release, we bring you a recap of C<sup>2</sup>ST's event *When Playing Sports is Bad for Your Brain*, a program held in March 2015, which brought together a neuroscientist and orthopedic physician to discuss this hot topic, sports and brain injury. How can sports damage our brains, what can we do to prevent this, and what does science say about treatment?

We all know American culture is rooted in sports. Neuroscientist Dorothy Kozlowski and orthopedic physician Jeff Mjaanes weren't behind the podium to tell us not to play sports. We should, however, understand what rattling the brain in collisions on the football field or battlefield does to us. We need to be active, but also take care of our brains.

## What is traumatic brain injury, really?

Traumatic brain injury is defined as damage to the brain due to any physical blow to the head, including motor vehicle accidents, blasts on the battlefield that shake the head, or sports injuries. Our brain is like the egg white and yolk inside of its shell. When we experience a hit, the brain sloshes around, hitting against the shell, or our skull.

"The brain is the most sensitive, most unique organ that we have, it controls everything; you are only given one brain for your whole life," says Mjaanes.

And yet kids don't view concussions as a big deal.

Concussions result in injury to the function of the brain rather than its structure. The cause is a force, which comes in two flavors: linear and rotational. Usually both forces are at play, and helmets are only able to diminish linear but not rotational force.

Concussion is a process, not an event. The trauma is an event, but the concussion is a cascade of events that the brain has to go through on its road to recovery. Part of this cascade happens on a molecular level, when the brain demands energy but has a lack of blood flow, this leads to a toxic chemical imbalance. The amount of time it takes for this imbalance to dissipate varies from person to person.

The brain is also impacted at the level of connections between the cells. A specialized type of cell in our brain, neurons, are shaped like a cable and thus can shear and stretch like rubber bands. Too much shearing and stretching, which happens during concussions, can cause these cable-like structures to break. Breaks in these cables mean severing connections that are essential to brain function. This can happen in areas such as memory, attention, or emotion.



## Mending the brain

Symptoms of traumatic brain injury include a long list of maladies, including headache, neck pain, nausea, vision problems, balance problems, difficulty remembering, sleep troubles and emotional change. There is not test or scan for diagnosis, so clinicians need to base their diagnosis solely on symptoms.

Great strides have been achieved in traumatic brain injury rehabilitation.

"My focus has been on trying to come up ways in which our brain can re-organize after brain injury," says Kozlowski.

Her studies in rats have shown that the brain is less able to re-organize after brain injury than stroke. The animals needed longer, more varied types of physical rehab than after stroke to recover.

Currently, rehabilitation is the only treatment option available to those suffering from a traumatic brain injury. While people can recover well from a single concussion, repeat concussions, which injure an already-injured brain, can lead to longer term deficits. They also potentially increase the propensity for neurodegenerative diseases. Research only has correlative information, which suggests that repeat concussions alter a molecule important for the shape of neurons, which enables them to properly send and receive information.

With high school and college athletes receiving over 1,000 hits to the head, education and research about traumatic brain injury should not be downplayed. Mother nature did not intend for us to be ramming our heads, so let's work to understand how we can prevent and mitigate the effects.

**By Julia Turan, C<sup>2</sup>ST volunteer and science writer, Communications Assistant for EuroStemCell at the University of Edinburgh**

# What Is The BRAIN Initiative?

BRAIN. No longer just a word to describe the three-pound hunk inside your skull. As of April 2013, “BRAIN” is also a White House initiative—Brain Research through Advancing Innovative Neurotechnologies. What exactly are researchers hoping to discover and how are they going about this? Chicago Council on Science and Technology hosted a panel discussion on the BRAIN Initiative this fall, and in it they set out to tackle these questions, and consider the current landscape of neuroscience research.

One hundred thousand miles of cellular cables and one hundred trillion cellular connections are crammed into our noggins. In the early 1990s, the Albert Einstein of brains, a gentleman by the name of Santiago Ramon y Cajal discovered three fundamental laws of the brain. Our brains are made up of individual cells, not one big interconnected mass. Brain cells are asymmetrical, with a branching tree-like formation on one side, and a long cable on the other. And information passes from the long cable of one cell to the tree-like formation of the next.

Remarkably, in the century since Ramon y Cajal, our idea of how neurons connect with each other has not changed significantly. This is despite the fact that is probably wrong. The stain Cajal used to determine these principles only marks a measly one percent of cells. The other 99 percent are beyond what we can see with a type of microscope called the light microscope. To fit a trillion synapses into the brain, each structure has to be incredibly small, smaller than a wavelength of light it turns out—hence, light microscopy doesn’t allow us to see all the details of a brain.

Every small part of this structure has a different organization and a different group of cells. For most of them we really have no clear statement about what those structures are doing. The cellular mechanisms of the contacts between cells are also immensely complicated. We have some understanding of the computations between them. At the level of cognition, we are lost.

“And this is the state of affairs with the brain,” says Dr. John Maunsell, Professor of Neurobiology at the University of Chicago.

There have been some amazing advances in optical methods, moving us toward essentially a parts list. How many different types of cells are there in the brain? How many different molecular machines are there within a cell?

“Now we’re in a position now where we can ask questions about function and dynamics, how the actual operations occur, how the brain does its job,” explains Maunsell.

Cells that look identical might in fact be doing different jobs. Although we can be blessed with five senses, when we study the brain, we almost predominantly only use only one: our eyes. Part of the BRAIN initiative is trying to provide new ways of looking at the brain.

As Yogi Berra said, “You can observe a lot just by watching.”

Dr. Bobby Kasthuri, Neuroscience Researcher at Argonne National Labs and an Assistant Professor in the Department of Neurobiology at the University of Chicago, uses electron microscopy (EM), which uses high-resolution images to map the brain. Using thin 2D slices of the brain visualized with EM, we can reconstruct 3D versions of neurons by marking them in each of the slices. Ultimately Kasthuri hopes to do

this in the billions of neurons in the brain, but he has started with a small piece of mouse brain, smaller than a grain of sand, and marked all the elements. It turns out that the brain is not how Cajal had imagined and not how we had thought about them for over 110 years. It is jam-packed with cellular cables that extend over very large distances and make connections with each other.

“Using this data, what I’m interested in is answering fundamental questions about brains that people ask me all the time. How many neurons are there in a brain? Well the answer is we don’t know,” explains Kasthuri.

Without answering these basic questions, it’s next to impossible to get at the sophisticated ones we might be more interested in. How much data does it take to create these maps? The human brain would take a whopping 1.3 billion terabytes, half of all the hard drives that exist today.

“So if I could just get all of that, then I could easily map this human brain,” quips Kasthuri.

In parallel with understanding the normal functioning of the brain, research tries to uncover how it malfunctions. Mental illness affects our thinking, our mood, and ability to relate to each other. It accounts for 37 percent of all the years lost to non-infectious diseases. Drug development for the central nervous system, the brain and spinal cord, is particularly disheartening with nearly double the failure rate of all other drugs. The sobering reality is that many of these drugs were discovered serendipitously, rather than following a thorough understanding of structure and function.

We do not understand neuropsychiatric diseases well. Diagnostic criteria are variable, often using subjective measures. These are not singular diseases, with varying types, presentation and disease course.

As Dr. Tom Macek, Scientific Director of Clinical Sciences CNS at Takeda Development Center Americas, simply put it, “Fundamental understanding of mental illnesses is greatly lacking.” This is another arena, which the BRAIN Initiative hopes to elucidate.

Arguably, more than understanding a vital organ, will tell us about what it means to be human. While we may have a clear idea of aims and directions for research, the endpoint is hazy.

“We don’t know how far away that is. It’s possible that all the concepts and understanding will come tumbling out over the next 5 – 10 years and we’ll know how the brain works, but we really could be facing a much longer period than that before we come to a complete understanding,” explains Maunsell.

“When you go to war, the first thing that’s lost is the plan,” Kasthuri elaborates, “And so I suspect, just like that, the first thing that we will lose in our kind of attempt to get the brain will be the plan.”

**By Julia Turan, C<sup>2</sup>ST volunteer and science writer, Communications Assistant for EuroStemCell at the University of Edinburgh**

*This program was supported by a grant from The Chicago Community Trust and presented in partnership with Argonne National Lab and The Chicago Society for Neuroscience.*

## C<sup>2</sup>ST Artist In Residence, Aaron Freeman

Aaron Freeman has been a popular figure in Chicago for decades. He has performed stand-up comedy at Second City Improv Theater, contributed to NPR radio, hosted a TV show on WPWR-TV, has authored several books, and more.

In early 2015, Aaron became C<sup>2</sup>ST's first-ever Artist in Residence. Since that time, he has been an invaluable addition to the C<sup>2</sup>ST team, where he combines his skills as a comedian and journalist with his passion for science.

Last February, C<sup>2</sup>ST produced a program on healthy aging titled *How to be Healthy When You're Older*. When the program's intended moderator was injured just before the event date, Aaron cheerfully stepped in and took her place. This was the first of three programs that Aaron introduced. The second was in March when he opened for *Music—There's a Science to That*, followed in November when he introduced his friend MK Czerwiek for her program *A Picture is Worth 1000 Words—Teaching Science with Comics*. Aaron's charisma and boundless enthusiasm helped give life to each of these programs.

Aaron was also the star of his own C<sup>2</sup>ST program. In September, he spent an hour talking about his method of combining science education and comedy at Geek Bar Chicago for *C<sup>2</sup>ST Speakeasy: Sex, Science and Jokes*.

But Aaron's most notable contribution to C<sup>2</sup>ST to date is his videos. About once a week, he releases a funny and concise video on interesting topics in science. These videos have included topics such as: the brain chemistry of the incredible hulk, 'race' relations in rats, and the psychology of sports.



Some of these videos are interviews with prominent scientists, including some C<sup>2</sup>ST speakers. These interviews have included: Neuroscientist Dr. Peggy Mason on the recent movie *Concussion*, Anthropologist Dr. Paula Skye Tallman on life in the Amazon, Physicist and Congressional Candidate Dr. Herman White on race in science, and Biologist Dr. Jay Olshansky on whether presidents age faster than others.

As C<sup>2</sup>ST's favorite comedian, Aaron continues to impress us with his insightful and creative take on teaching the world about science. We are looking forward to another year of working together to further the mission of C<sup>2</sup>ST.

**By Chris Eppig, C<sup>2</sup>ST Director of Programming**

**"The informal presentation worked really well to set the audience at ease which led to a great discussion."**

**—Audience Member**  
C<sup>2</sup>ST Speakeasy

# Women In STEM



Science is one of the engines that fuels our city. C<sup>2</sup>ST's Women in STEM: Connect put three successful local women under the spotlight to paint a picture of their careers in the field. The event was sponsored by Horizon Pharma, HDMZ and the School of the Art Institute.

The panel discussion provided three different lenses into non-traditional science careers, and included an entrepreneur, a policymaker and a head brewer. Each woman spoke about how science differently impacted their career path.

Kapila Vigés, Director of EnterpriseWorks Chicago, knew that her science career was not heading towards the lab, and recognizes that "scientific training is incredibly valuable in almost any field."

Debra Shore, working at the intersection of science and policy on the Board of Commissioners of the Metropolitan Water Reclamation District of Greater Chicago, purports that even though she does not possess a scientific background, her ability to ask good questions helped her thrive. However, she stressed that policymaking needs more people with scientific training.

Mary Bauer found a way to continue using her scientific knowledge base while also becoming a leader, as Head Brewer of Lagunitas Brewery in Chicago. Brewing, a scientific and creative process, allows her to learn about the enzymes and reactions hiding behind our pints.

The panelists addressed their experience as women in the field as well. Bauer often gets comments like "where's your flannel?" or "how come no beer belly?" Rather than taking this to heart, she feels lucky to be in an attention-grabbing position. Her experience leading a team of mostly

men has been positive; they welcomed her with open arms and treat her with respect.

In addition to sharing their experiences, Vigés, Shore and Bauer offered advice. Shore believes she wouldn't be where she is today, if she hadn't been willing to get outside of her comfort zone. In a similar vein, Vigés said, "There is risk in everything we do. It's about understanding risk and getting a little bit more comfortable with it."

Vigés also highlighted the importance of continuing to seek out mentorship, because there will always be something you don't know and need help with.

When asked to go back and give advice to their eight-year-old selves, or any young girls in the room, all three speakers encouraged hard work, and getting involved to expose yourself to varied experiences early on.

The panel discussion was followed by a networking session, where the 120-plus attendees, which included women of all ages and at all stages of their careers, students from grade school to post-graduate, and a good number of men in the sciences, some with daughters interested in a career in science, mingled with the presenters, representatives from other 'women in science' and coding clubs, and one another. Food—and of course Lagunitas beer—was enjoyed.

C<sup>2</sup>ST will be hosting more Women in STEM events in 2016; visit our website, [c2st.org](http://c2st.org), or follow us on social media for announcements.

**By Julia Turan, C<sup>2</sup>ST volunteer and science writer, Communications Assistant for EuroStemCell at the University of Edinburgh**

"There is risk in everything we do.  
It's about understanding risk and getting  
a little bit more comfortable with it."

—Kapila Vigés

"I have been to three of your events and expect to attend many more, and I recently signed up for C<sup>2</sup>ST [membership]. The content is superb and the interaction with the audience is spontaneous."

# Science In The Second City 2015

The Chicago Council on Science and Technology would like to extend our many thanks to those who provided us with funding, their time, and in-kind donations that ensured the success of Science in the Second City Gala 2015.

We are grateful for the support from each and every one of our contributors. We were able to raise over \$58,000, which will be used to fund our 35 projected programs for the 2015 – 2016 fiscal year.

## Sponsorship

John and Patricia Anderson	The Boeing Company	Horizon Pharma, Inc.	Anonymous
Argonne National Laboratories	Exelon Corporation	Magellan Corporation	

## Table Purchase

Barnes & Thornburg, LLP	IIT College of Science	The Brinson Foundation	Northern Illinois University
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## Donations

Dawn Miller	Jon Miller	Pierce Family Foundation	John C. Weisensell
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## In-Kind Donations

Adler Planetarium	Chicago Symphony Orchestra	Kimbark Liquors	The Ritz-Carlton
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The Brinson Foundation	Hilton Chicago	Morton's The Steakhouse—Northbrook	Shedd Aquarium
Chicago International Film Festival	The Law Offices of Jeffery M. Leving, Ltd.	Museum of Science & Industry	Tasting deVines Cellars
			Wines for Humanity

## Volunteers

Donna Denson	Andrea Grabemeyer	Zuri McClelland	Christine Will
Sabrina Fesko	Vickie Horn	Felecia McCree Moulton	
Ana Cristina Gomes	Zoe Hunter	Sarah Shirk	

On June 4th, C<sup>2</sup>ST hosted its fifth annual Gala Benefit, Science In the Second City. Over 150 guests celebrated the Chicago science community at the Adler Planetarium. The event was hosted by Chicago Tonight correspondent and content producer, Brandis Friedman, who introduced a number of speakers including C<sup>2</sup>ST's Artist in Residence, journalist and comedian, Aaron Freeman. Aaron's presentation included one of his humorous science based videos on the Neurobiology of the Incredible Hulk.

The annual Award for "Advancing the Public Understanding of Science and Technology" was presented to Mr. Gary Brinson, president of The Brinson Foundation. The Brinson Foundation is a privately funded philanthropic organization that provides an opportunity to focus the Brinson family's common interests in encouraging personal initiative, advancing individual freedoms and liberties and positively contributing to society in the areas of education and scientific research. Brinson is a nationally recognized authority on global investing. He has lectured and contributed to education and professional investment forums over the past forty years.



Guests not only enjoyed the telescopes on the veranda, but were also given the opportunity to tour Mission Moon, Adler's exhibit celebrating the 45th anniversary of the Apollo 13 mission. Mission Moon tells the compelling story of America's first steps into space through the lives of those who lived it.

The event also included a silent auction, live auction and raffle. This year, C<sup>2</sup>ST secured eighteen different donated items, but the grand prize of the evening included a suite for 20 guests at Soldier Field for the Grateful Dead 50th Anniversary Tour over July 4th weekend.



Save the date!

# Science in the City

## *Annual Gala*

Science is for everyone! Join us in supporting  
Chicago Council on Science & Technology.  
Enjoy a lively reception, tour of the digital  
manufacturing center and a seated dinner  
at UI LABS on Goose Island.

Thursday, May 5, 2016

5 PM

UILabs

1415 North Cherry Avenue  
Chicago, Illinois 60642



# C<sup>2</sup>ST Speakers & Partners, July 2014 – June 2015

We would like to give a special 'Thank You!' to all of our great speakers and partners, from both our past (July 1, 2014 and June 30, 2015) and current fiscal years (July 1, 2015 and December 31, 2015).

Partnering with local institutions and community organizations is a core part of C<sup>2</sup>ST's mission to serve as a consortium of local scientific organizations, and helps deliver our message to a broader audience.

## Speakers

### Fall 2014

**Dr. Larry Birnbaum**, Professor of Electrical Engineering and Computer Science, Northwestern University, Chief Scientific Advisor at Narrative Science

**Dr. Nick Bostrom**, Professor of Philosophy, Oxford University. Founding Director of the Future of Humanity Institute, and of the Program on the Impacts of Future Technology

**Brandis Friedman**, Correspondent, "Chicago Tonight," WTTW

**Julian Grant**, Associate Professor of Cinema Art + Science, Columbia College Chicago.

**Dr. Kris Hammond**, Professor of Electrical Engineering and Computer Science, Northwestern University, Co-Founder and Chief Scientist at Narrative Science

**Dr. Edward "Rocky" Kolb**, Dean of Physical Sciences, University of Chicago

**Dr. Michael Lach**, Director of STEM Initiatives, Urban Education Institute at the University of Chicago

**Dr. Malcom MacIver**, Associate Professor of Mechanical and Biomedical Engineering, Northwestern University

**Dr. Steven McCaw**, Professor Emeritus of Biomechanics, Illinois State University

**Dr. Joel Mokyr**, Robert H. Strotz Professor, and Professor of Economics and History, Northwestern University

**Dr. Lynn Narasimhan**, Professor of Mathematics, DePaul University

**Dr. Julio Ottino**, Dean of McCormick School of Engineering and Applied Science, Northwestern University

**Kurt Poppenhouse**, Former Math Teacher, Chicago Public Schools

**Dr. Brian Reiser**, Professor of Learning Sciences, Northwestern University

**Mary Rockrohr**, Instructional Supervisor for Science, Glenbrook North High School

**Bruce Sheridan**, Professor & Chair, Columbia College Chicago Art + Science, Filmmaker

**Dr. Laura Trouille**, Astronomer, Northwestern University and Adler Planetarium

**Dr. Lucianne Walkowicz**, Astronomer, Adler Planetarium

**Dr. Laura White**, Director of Citizen Science, Adler Planetarium

### Spring 2015

**Kyle Patrick Alvarez**, Filmmaker

**Clayton Brown**, Filmmaker, 137 Films.

**Dr. Wojtek Chodzko-Zajko**, Shahid and Ann Carlson Khan Professor in Applied Health Sciences and Head of the Department of Kinesiology and Community Health, University of Illinois at Urbana-Champaign.

**Nic Collins**, Professor of Sound, School of the Art Institute of Chicago.

**Dr. William Dale**, Associate Professor of Medicine and the Section Chief of Geriatrics and Palliative Medicine, University of Chicago.

**Dr. Robert Daum**, Professor of Medicine, University of Chicago.

**Phillip Dowd**, Retired Founder and Senior Executive, SunGard Data Systems

**Dr. Michael Federle**, Associate Professor in the Department of Medicinal Chemistry, University of Illinois at Chicago.

**Dr. Scott Franzblau**, Professor in the Department of Medicinal Chemistry and Pharmacognosy, University of Illinois at Chicago.

**Dr. Carlee Beth Hawkins**, Post-Doctoral Fellow, University of Chicago.

**Dr. Louise Hawkey**, Senior Research Scientist with the National Opinion Research Center (NORC), University of Chicago.

**William S. Higgins**, NASA Solar System Ambassador.

**Torin Hopkins**, App Developer.

**Anthony Kaufman**, Chicago International Film Festival

**Dr. Dorothy Kozlowski**, Vincent De Paul Professor of Biology, DePaul University.

**Dr. Peggy Mason**, Professor of Neurobiology, University of Chicago.

**Doug McBride**, Owner and Producer, Gravity Studios.

**Dr. Sean McConnell**, Post Doctoral Researcher, University of Chicago

**Dr. Aaron Miller**, Manager of the Laboratory for Human Biology Research, Northwestern University.

**Dr. Jeff Mjaanes**, Assistant Professor of Orthopedic Surgery and Pediatrics, Rush University.

**Monica Ross**, Filmmaker, 137 Films

**Dr. Aaron Packman**, Professor in the Department of Civil and Environmental Engineering, Northwestern University.

**Dr. Daniel Procissi**, Assistant Professor of Radiology, Northwestern University.

**Bruce Sheridan**, Professor & Chair, Columbia College Chicago Art + Science, Filmmaker

**Debra Shore**, Commissioner, Metropolitan Water Reclamation District of Greater Chicago.

**Dr. Seth Snyder**, Biofuels Technology Manager and Section Leader, Energy Systems, Argonne National Laboratory.

**Cristal Thomas**, Former Deputy Governor of Illinois, Vice President for Community Health Engagement at the University of Chicago Medical Center.

**Jessica B. Turner**, Doctoral Candidate, West Virginia University.

**Dr. Robert A. Weinstein**, Professor of Medicine, Rush University.

## Fall 2015

**Dr. Weslynn Ashton**, Assistant Professor of Environmental Management and Sustainability, Illinois Institute of Technology

**Mary Bauer**, Head Brewer, Lagunitas Brewery Chicago

**Anna Brill**, Robot Specialist, Museum of Science and Industry

**Jeremy Carr**, Writer/Director

**Claire Carré**, Writer/Director

**Dr. Jocelyn Smith Carter**, Director of Clinical Training and Associate Professor of Clinical Psychology, DePaul University

**Dr. Bala Chaudhary**, Faculty in the Institute of Environmental Sustainability, Loyola University

**MK Czerwicz**, Co-Manager, GraphicMedicine.org

**Dr. Stuart Firestein**, Professor of Neuroscience, Columbia University

**Aaron Freeman**, C<sup>2</sup>ST Artist in Residence

**Shannon Heffernan**, Reporter and Producer, WBEZ Chicago

**Dr. Bobby Kasthuri**, Neuroscience Researcher, Argonne National Laboratory

**Adam Khan**, Founder and Chief Executive, AKHAN Semiconductor

**Dr. Tom Macek**, Scientific Director of Clinical Sciences CNS, Takeda Development Center Americas

**Dr. Pete Makovicky**, Associate Curator of Paleontology, Field Museum

**Dr. Kristina Martinez**, Post Doctoral Researcher, University of Chicago

**Dr. John Maunsell**, Alfred D. Lasker Professor of Neurobiology and Director of the Grossman Institute for Neuroscience, Quantitative Biology, and Human Behavior, University of Chicago

**Kathleen McCarthy**, Director of Collections and Head Curator, Museum of Science and Industry

**Dr. Rabiah Mayas**, Director of Science and Integrated Strategies in the Center for the Advancement of Science Education, Museum of Science and Industry

**Dr. T. Celeste Napier**, Professor of Pharmacology and Psychiatry, Rush University Medical Center

**Jack C. Newell**, Writer/Director

**Dr. Ken A. Paller**, Director of the Cognitive Neuroscience Program, Northwestern University

**Norm Peterson**, Director of Government Relations, Argonne National Laboratory

**Dr. Matthew Spenko**, Associate Professor in the Mechanical, Materials, and Aerospace Department, Illinois Institute of Technology

**Tejas Shastry**, CEO and Co-Founder, AMPY

**Debra Shore**, Commissioner, Metropolitan Water Reclamation District of Greater Chicago.

**Dr. Paula Skye Tallman**, Post Doctoral Research Scientist, Field Museum

**Kapila Vigés**, Director, EnterpriseWorks Chicago

**Dr. Miles Wernick**, Motorola Endowed Chair Professor of Electrical and Computer Engineering, Professor of Biomedical Engineering, and Director of the Medical Imaging Center, Illinois Institute of Technology

## Partners

### Fall 2014

137 Films	Chicago International Film Festival	Kartemquin Films	Northwestern University
Columbia College	Community Cinema	Mayer Brown	Skokie Public Library
Chicago Council on Global Affairs	Geek Bar Chicago	McCormick School of Engineering and Applied Sciences,	WTTW
Chicago Dept. of Cultural Affairs and Special Events	Illinois Institute of Technology	Northwestern University	
	ITVS		

### Spring 2015

Armour College of Engineering, Illinois Institute of Technology	Chicago Dept. of Cultural Affairs and Special Events	Festival	ITVS
Chicago Council on Global Affairs	Chicago Freedom School	Columbia College Chicago	Wanger Institute for Sustainable Energy Research
	Chicago International Film	Community Cinema	
		Geek Bar Chicago	

### Fall 2015

Argonne National Laboratory	Chicago Society for Neuroscience	Columbia College Chicago	Museum of Science and Industry
Chicago International Film Festival	Chicago Tech Academy High School	Field Museum	University of Chicago
		Geek Bar Chicago	



# Thank You For Your Support

The Chicago Council on Science and Technology (C<sup>2</sup>ST) would like to extend our many thanks to those who provided us with funding that ensured we produced quality and engaging programming to the Chicagoland area.

The following is a list of those who made contributions in support of C<sup>2</sup>ST between July 1, 2014 and June 30, 2015 in the amount of \$10 or more. We are grateful for the support from each and every one of our loyal donors and members.

## \$50,000

The John D. and Catherine T. MacArthur Foundation

## \$20,000 – \$25,000

Exelon Corporation

PepsiCo, Inc.

## \$10,000 – \$19,999

Alvin H. Baum Family Fund

Northern Illinois University

The Schriesheim Fund

University of Illinois at

Argonne National Laboratory

Northwestern University

University of Chicago

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Ralph Wanger

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Chicago

## \$1,001 – \$9,999

Arch Shaw Foundation

Gas Technology Institute

John A. Cable Foundation

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The Brinson Foundation

IBM

Robert Kriss

John and Jeanne Rowe

Philip Cable

Illinois Tool Works

Jon Miller

Katie Stallcup

## In-Kind Donations

HDMZ

Illinois Institute  
of Technology

Magellan Corporation

## President's Council—\$1,000

Joseph and Bessie  
Feinberg Foundation

Kay Torshen Foundation

Alan Matthew

Alan Wendorf

## Leadership Council—\$250 – \$999

Russell Betts

Mary Hendrix

Jenny Sartori

Stephen Wasserman

Charles A. Cooper

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Sara Shirk

Brian Eckrose

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Mary and Bruce Feay

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John Power

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## \$10 – \$100

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Laura Lange

Katherine Naselli Adamski

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William Lemke

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Anna Lysakowski

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Dessaigne Desta

Pamela Greyer

Joey Mak

Ralph Amelio

Paul Dickerson

Lyndal Hanna

G. Ali Mansoori

Kevin Arthur

Andrew DiLullo

Michele Hansen

Rush Marler

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Christine Drinka

Dan Hislop

Merry Mayer

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George Dzuricko

Robert Jacob

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Janice Feinberg

Katie Elyce Jones

Susan Messinger

George Crabtree

Gary Gall

Rob Kleps

Lisa Meyers

John Craib-Cox

Timothy Gerrity

David Krumlauf

M. Ellen Mitchell



## \$10 – \$100

John Nelson	Dennis Roberson	Alan Skillman	Joy Walker
Lana Norman	Hunter Rogers	Jessica Slater	Patricia Ward
Dawn M. Nothwehr	Robert Rosenstein	Courtney Smith	Cassandra White
Stephanie Ortel	Clare Tallon Ruen	Seth Snyder	Geoffrey A. Williamson
Pamela Paolillo	Michelle Sachtleben	Borivoje Sofiji	Mark Wilson
Amanda Persons	Frank Schell	Donald St. Clair	Rhiahha Wisniewski
Mark Peters	Maureen Schoenbeck	Ann Tanner	Joanne Yonan
Daisy Petrovich	David Schulman	Ann Tomlinson	Howard Zar
Norman Phoenix	Kris Scott	Eve Tulbert	David Zygas
Jessica Reimer	Carlo Segre	Jessica Turner	Anonymous
Peggy Reins	Nabila Shamshuddin	Andrew Vazzano	
Gary Richert	Kathleen Shapiro	Peter Wachter	

The following is a list of those who made contributions in support of C<sup>2</sup>ST for the first half of our current fiscal year, between July 1, 2015 and December 31, 2015, in the amount

of \$10 or more. We are grateful for the support from each and every one of our loyal donors and members.

## \$20,000 – \$25,000

Chicago Community Trust	Exelon Corporation
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## \$10,000 – \$19,999

Northern Illinois University	University of Chicago	Ralph Wanger
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## \$1,001 to \$9,999

Arch W. Shaw Foundation	Philip Cable	John A. Cable Foundation	Norman Rogers
Bob Arthur	Horizon Pharma, Inc.	Robert Kriss	The Schriesheim Fund

## President's Council—\$1,000

Gastone and Linda Celesia	Kay Torshen Foundation	Alan Matthew	Kathleen Shapiro
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## Leadership Council—\$250 to \$999

Mary and Bruce Feay	Joseph and Bessie Feinberg Foundation	Joseph Lykken	Sarah Shirk
Janis Morris Foundation		Thomas Macek	Edward Walbridge

## \$101 – \$249

Rachel Bronson	Arthur Goldman	Vickie Horn	John C. Weisensell
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## \$10 – \$100

Francisco Aguilar	Brian Farley Hickey	Casey Murphy	Martin Scott
Terry Bergdall	Kelli Hicks	Kayla Nimis	Carlo Segre
Bernard Botheroyd	Aaron Houska	Dawn M. Nothwehr	Lara Smetana
Graham Braun	Yu-hui Huang	Lynn OGrady	Bo Sofilj
Benjamin Brookes	Daniel Kaplan	Dan Palchak	John Sowles
Andrew Calvimontes	Bennetta Kelly	Daisy Petrovich	Elise Wachspress
Charles Cannon	Edward and Adrienne Kolb	Peggy Reins	Peter Wachter
Laura Cook	G. Ali Mansoori	Sendhil Revuluri	Andre Walker
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D. Derfny	Peggy Mason	Michael Rosenzweig	Nicole Woitowich
George Dzuricko	Edward McCaffrey	Molly Rossow	Leslie Wolowitz
Deborah Fenner	Amber McNeilly	Jenny Sarna	
Ricardo Fleury	Dawn Miller	Jeremy Sartori	
Ethel Hammer	Sara Garcia Moreno	Maureen Schoenbeck	

## World Chicago Professional Fellows Program

For the month of October, C<sup>2</sup>ST hosted Blaz Petric, a business developer at the Institute of Metagenomics and Microbial Technologies (IMMT) in Ljubljana, Slovenia, through the World Chicago Professional Fellows Program. We asked Blaz to share his thoughts on C<sup>2</sup>ST, his time here in Chicago, and the World Chicago Professional Fellows program experience with us.



*I was involved in the WorldChicago Professional Fellows program, sponsored by the U.S. Department of State. I met great people in Chicago, and learned about best practices for raising the awareness on the importance of the scientific research and promoting collaboration between community stakeholders for the higher mutual well-being.*

*I am really grateful for having the opportunity to be part of the Chicago Council on Science and Technology team.*

*I came to Chicago to meet with potential researchers, development partners, and investors that are interested to cooperate at the creation of new knowledge and development of technologies to tackle the global health issue with antibiotic resistant bacteria. The problem is that bacteria are increasingly becoming resistant to antibiotics. As a result, currently used antibiotics to treat infections do not always work. Because of this, 63 people die in the United States alone every day.*

*At IMMT we are deeply concerned about this problem and work passionately to overcome it. Our research group, under supervision of Dr. Ales Lapanje works in the field of environmental molecular microbiology, and is actively developing solutions to follow our vision to save the world of incurable microbial infections.*

*IMMT is currently in a process of making new antibiotics from nature by industrializing an original discovery approach to provide new efficient antibiotics on the market (for more information please visit <http://www.immt.eu>).*

*I was astonished by the growing and collaborative biomedical ecosystem in Chicago formed by interdisciplinary stakeholders to advance scientific research and technological development.*

*I would like to express my deepest gratitude to Dr. Krisztina Eleki and Dr. Alan Schriesheim, and the entire team at the Chicago Council on Science and Technology that enabled me to be part of the Chicago's science and technology ecosystem.*

**Blaz Petric, Business Developer**

*Institute of Metagenomics and Microbial Technologies (IMMT)*

“I was astonished by the growing and collaborative biomedical ecosystem in Chicago formed by interdisciplinary stakeholders to advance scientific research and technological development.”

—Blaz Petric

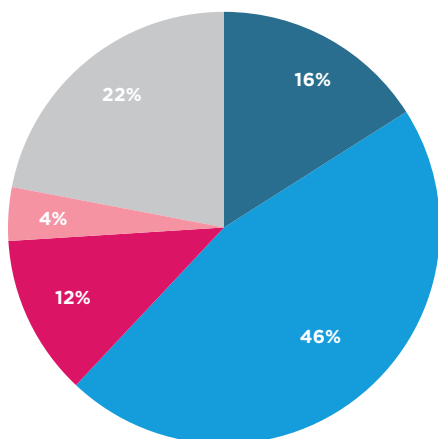
“Connecting the science community and the general public in areas of policy and education is really important for the good of the country. And the work you guys [C<sup>2</sup>ST] are doing in the Chicago area is great.”

—Dr. Michael Lach  
Urban Education Institute,  
University of Chicago

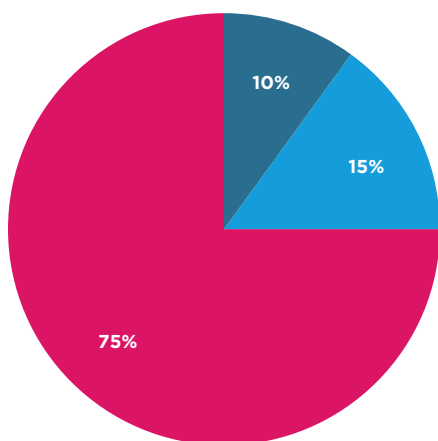
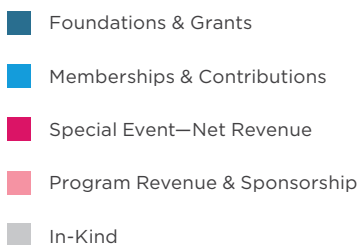
# FY 2015 Financials

The following revenue and expense charts are comprised of financial information from our fiscal year between July 1, 2014 and June 30, 2015.

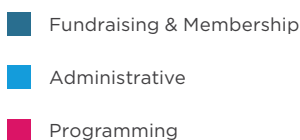
For our official financial documents please find our information on [www.guidestar.org](http://www.guidestar.org).



## Revenue



## Expenses



## In the 2015 year, C<sup>2</sup>ST:

- **Produced 33 programs**  
26 in partnership with other organizations
- **At the end of 2015, we had nearly 3,000 followers on Social Media**
- These programs were attended by **2,500 people in-person**

Join us in 2016—  
in-person and online!

**"It's important to have an organization like C<sup>2</sup>ST because there needs to be a means for communication between scientists and the public."**

**—Dr. Scott Franzblau**  
Professor of Medicinal Chemistry and Pharmacognocny,  
University of Illinois at Chicago

## Become a part of the conversation!

**We want our audience and the Chicagoland community to get involved with C<sup>2</sup>ST any way they can. Please consider:**

### Becoming a Sponsor

You or your business will have the opportunity to sponsor a Program or Program Series of your choosing and contribute to the overall strategy and development of programs. C<sup>2</sup>ST will recognize you as a sponsor on the C<sup>2</sup>ST website, in the Annual Review, and on all printed and electronic marketing materials and ensure your seat on the President's Council.

Sponsorship ranges from \$2,500 to \$25,000+ depending upon your level of commitment. For more information on how to become a C<sup>2</sup>ST Sponsor, please contact Executive Director Krisztina Eleki, PhD., at 312-567-5830 or [keleki@c2st.org](mailto:keleki@c2st.org).

### Becoming a Patron

Join the President's Circle (\$1,000 and above) or Leadership Circle (\$250 to \$999). Since your annual gift will help us deliver our mission and goals, you will be acknowledged in our annual publication and will receive invitations to special VIP networking and 'Dine with the Speaker' events. Contact Krisztina Eleki at 312-567-5830 or [keleki@c2st.org](mailto:keleki@c2st.org).

### Becoming a Member

Your annual membership gift will help us deliver quality programming and you will receive discounts where program fees apply. Please visit our website for membership information or contact Jessica Weisensell at 312-567-5835 or [jweisensell@c2st.org](mailto:jweisensell@c2st.org).

### Becoming a Friend

Your one-time donation will help us plan ahead and know that we have many friends who enjoy our programming.

### Becoming a Volunteer

We need help at various programs and events—volunteer by contacting Jessica Weisensell at 312-567-5835 or [jweisensell@c2st.org](mailto:jweisensell@c2st.org).

### Matching Gifts

Many companies offer matching gift programs to encourage employees to contribute to nonprofit organizations. Most of these programs match contributions dollar for dollar, and some will even double or triple the amount of your gift! To multiply the value of your membership contribution or gift, ask your human resource or community relations department for a matching gift form. C<sup>2</sup>ST's Federal Tax Identification Number (TIN) is 20-8490697.

### Donating In-Kind

Donate your talents to various projects to help with program, promotion and/or organizational development. For more information please contact Krisztina Eleki at 312-567-5830 or [keleki@c2st.org](mailto:keleki@c2st.org).

**C<sup>2</sup>ST is a 501(c)3 nonprofit organization.**

**Contributions are tax-deductible to the extent allowable by law.**



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