

Neuroscience researchers present at BRAIN Initiative conference

Anoopa Sundararajan
COPY EDITOR

The Brain Research through Advancing Innovative Neurotechnologies (BRAIN) Initiative is one of the latest projects funded by the National Institute of Health (NIH). The human brain is the most complex known structure in our universe, making the NIH's funding essential to neuroscience research, which aims to better our understanding of the way it works. In order to fully comprehend and subsequently treat neurological and psychological disorders like Alzheimer's disease, Parkinson's disease, bipolar disorder, epilepsy, autism, and others, we need to first map the connections the human brain makes and the patterns and structures that can be inferred from those connections.

The Chicago Council on Science and Technology (C2ST), in collaboration with the Argonne National Laboratory and Chicago Society for Neuroscience hosted an event titled, "What is the BRAIN Initiative?" at Northwestern University's campus in downtown Chicago on Thursday, October 1. The purpose of the event, as stated in the program, was to "Help bring this research initiative into the public eye and raise awareness of this vital research." The three speakers who presented at the program were Dr. John Maunsell, Dr. Bobby Kasthuri and Dr. Tom Macek. Maunsell is the Director of the Grossman Institute for Neuroscience, Quantitative Biology, and Human Behavior at the University of Chicago and serves as the Al-

fred D Lasker Professor of Neurobiology. Kasthuri is a Neuroscience Researcher at Argonne National Laboratory and is also an assistant professor in the Department of Neurobiology at the University of Chicago. Macek, on the other hand, is a clinical neuroscientist. He is a Scientific Director of Clinical Sciences CNS at Takeda Development Center Americas. The moderator for the evening was Norm Peterson, who serves as the Director of Government Relations at Argonne National Laboratory.

In the first talk, Maunsell provided an introductory overview of the functioning of the brain and stressed on the importance of understanding it on a much deeper level to delve into solving the neurological disorders that plague several million Americans and even more globally every year. In keeping with the evening's theme of providing a clearer understanding of the BRAIN Initiative, Maunsell went on to explain why this research is important now, adding that the overwhelming increase in technological advancements has made scientists and researchers feel like they can overpower a number of the challenges that they would have faced just a few years or decades ago. He also provided a set of three goals for the initiative: obtaining a parts list for the brain, obtaining wiring diagrams of the brain, and understanding the links between brain and behavior. As he ended his talk, Maunsell stated that although the BRAIN Initiative has been compared to revolutionary scientific projects like the Human Genome Project, the difference is that mapping the brain is a task without

a clear-cut end goal because the discoveries are endless and new findings arise continuously.

Maunsell's talk led into Dr. Bobby Kasthuri's talk, which was more specific to the research he does at his lab. Kasthuri captivated his audience from the beginning by illustrating that even though our brain controls our five senses, we almost never use all five senses to acquire a deeper understanding of the brain. He said that the way he sees it, part of the BRAIN Initiative's mission is "to give us new ways to visualize the brain." In the Kasthuri lab, the biggest current challenge is in regards to the amount of data storage space that is required to interpret the connections that are being observed in the brain. Even storing the data from connections observed in a fraction of a mouse's brain would take more space than is feasible. Kasthuri expressed hope that diverse fields like data science and neuroscience will be able to collaborate more closely in the coming years, so that efficient methods can be procured to analyze the data and eventually make significant progress towards mapping the human brain and understanding the way it functions. Kasthuri ended with one of his favorite quotes by John F. Kennedy: "We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard; because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one we intend to win..." using it as inspiration in his own work.

Dr. Tom Macek has been working with the pharmaceutical industry for over a decade now to develop new medications for the treatment of neurological and psychological disorders. He described three phases in the process of developing these medications—the first is to develop a more comprehensive understanding of neuropsychiatric illnesses, the second is to develop animal models for the drugs, and the third is to obtain better biomarkers in drug development. The latter half of his talk was spent putting their NIH funding in perspective in terms of six-packs of beer. He compared government funding on this project and others to the number of six-packs and amount of money each would cost based on a roughly chosen estimate of the number of American adults. His overall data was extensive, but the point was that this NIH grant is essential to furthering neuroscience and much more needs to be done to truly comprehend the functioning of the human brain before neurological and psychological diseases can be accurately treated.

The talks were followed by a Q&A session with questions from the audience. The event drew a diverse crowd ranging from college students to retired teachers, scientists, and science enthusiasts. One of the most successful aspects of the event was that it delivered to its target audience by not being too technical in terms of scientific language and translating instead to layman's terms that every member in the audience could likely relate to.

Otherworldly Light Show at Garfield Park Conservatory

Anoopa Sundararajan
COPY EDITOR

Within the next year, if you find yourself with a few hours to spare, going to The Otherworldly Light Show at Garfield Park Conservatory is a great way to spend that time. If you are extremely busy and the semester is stressing you out, the conservatory is still an excellent place to unwind for a few hours and recharge yourself. The venue is only a two-minute walk from the Conservatory-Central Park Drive stop on the CTA's Green Line. "Solarise: a sea of all colors" is a location-specific special exhibit created by Luftwerk, comprised of Chicago artists Petra Bachmaier and Sean

Gallero and is the cause of the aptly named "otherworldly lights" that have taken over the Conservatory.

If you have never been to the Garfield Park Conservatory before, it is likely that you will be, as many were, awestruck by the seemingly endless variety of the exhibits. The whole space is separated into interconnected rooms so that each room houses a unique collection of plants, trees, flowers and/or fruits. Luftwerk has used the exhibits as inspiration to create a total of five installations, each exploring intriguing ways to experience light, color and nature. Even if you do not particularly enjoy or appreciate nature, the atmosphere in the Conservatory is enough to captivate you.

One of the best things about the Conservatory is its accommodation for people of all ages. Some exhibits have play areas for kids, others have a larger concentration of historical facts that accompany the displays and some, especially the new installations, are equally intriguing to children and adults alike. Throughout the Conservatory, there are conveniently placed benches that enable guests to sit down, relax and appreciate the extraordinary world around them. Few public spaces have the ability to engage guests of all ages and demographics equally but the Conservatory accomplishes this almost effortlessly.

The special exhibits opened on September 23, 2015 and will be on display until

September 22, 2016, but don't let that be a reason for you to postpone your visit. The sooner you visit, the more chances you will have to keep going back. Additionally, the entire trip is free as long as you have a working U-Pass because there is no fee charged at the Conservatory. The Garfield Park Conservatory is open every day of the week, with special hours on Wednesday when they are open from 9 a.m. to 8 p.m. Every other day, their hours are 9 a.m. to 5 p.m. For more information on the special exhibit, visit <http://www.garfieldconservatory.org/solarise-a-sea-of-all-colors.html>



Photos by Anoopa Sundararajan



Reviews:

'Big Grams' EP misses the mark

Soren Spicknall
WIIT MUSIC DIRECTOR

Some collaborative albums come about as natural extensions of deeply connected music scenes, and by the time they happen, they seem inevitable. This one is neither of those things. Put together following a series of brief meetings at music festivals, "Big Grams" is the debut EP from a trio of the same name, composed of OutKast member Big Boi and indie electro-rock darlings Phantogram. More than just a meshing of Phantogram's signature dream pop style with Big Boi's rhymes, the project represents a wholehearted attempt to create a brand new sound from the talents of both artists, and for the most part, it succeeds. Given the nature of the project, diehard fans of Phantogram won't think that this EP ranks among the duo's best work to date, and Big Boi

devotees will largely consider it as subpar in comparison to 2012's critically-acclaimed Vicious Lies and Dangerous Rumors, or anything he's done with OutKast. But really, that's not the point, since Big Grams represents a brand new act instead of a one-off collaboration, those who most fall for this album will be new fans, not each artist's established base.

Album opener "Run for Your Life" is the obvious single from the EP, one of five tracks on the release produced entirely by Phantogram themselves. It serves as an introduction to the philosophy behind the album; reimagining Josh Carter and Sarah Barthel's signature composition style through a pure hip hop lens, with Big Boi providing the lyrical power to make such a concept work. In fact, that first song and a couple others from the album could easily find their way into a Big Boi album, with Barthel's smooth voice serving

as chorus content and largely avoiding verses. However, the record shines most where the vocal balance between Big Boi and Barthel is evened out, with mid-album standout "Goldmine Junkie" giving the best demonstration of what the group is truly capable of when they work together as a unit. The middle three tracks of the EP, where this true meshing of sounds comes into force, is the strongest passage present.

Outside the impressive center of the EP, though, things start to fall apart somewhat. Songs like "Lights On" are far too light on lyrical impact, with repeated pop tropes ("keep your lights on for me," etc.) pervading otherwise solid backing music. On occasion, Big Boi seems to be drawing from an outtakes bin for his verses rather than devising truly new, hard-hitting lyrics, and no storytelling of importance is ever given to Sarah Barthel to sing

about, an oversight of massive proportions. In addition, the Skrillex-produced final track "Drum Machine" simply doesn't fit in, sounding like a dance-floor mix of a demo reel rather than a fully fleshed-out song in its own right. Interestingly, given that only two guest producers were involved in the album's production, rapped lyrics seem to be at different levels in the mix from song to song, which makes the EP hard to consider as a cohesive effort rather than a collection of singles. If a couple tracks had been cut and some more time had been spent in the studio to combine sounds as well as Barthel, Big Boi, and Carter do on "Put It On Her" and "Goldmine Junkie," Big Grams would have earned high praises for this release. As it stands, though, there's still some work to do. 5.0/10