

**Manhattanville in West Harlem Implementation Plan Report  
October 15, 2024 Submission**

**Declaration Reference and Key Data**

Obligation Section Number: **5.07(c)(i)**

Obligation Title: **Mind Brain Behavior K-12 Education Center**

Obligation Page Number: **52**

Obligation Trigger: **Issuance of TCO for Development Site 2**

Obligation Start Date: **August 25, 2016**

Obligation End Date: **25 Years from Commencement of the Education Center's Full Operation**

Obligation Status: **In Compliance**

**Obligation**

*Mind Brain Behavior K-12 Education Center.* CU shall locate within Development Site 2 (the proposed Jerome L. Greene Science Center) to be constructed in Stage 1 a Center to educate the community about diseases that affect the mind and brain as well as the advances being studied by CU's faculty and researchers. The Center shall encourage and design programs for local elementary, junior high school, and high school students. The Center shall commence operation upon issuance of the temporary certificate of occupancy for the Jerome L. Greene Science Center and operate for a 25-year period from commencement of full operation.

\* The center opened to the public in February 2017. Therefore, this obligation will be in effect until 2042, 25 years from the commencement of the center's full operation.

**Evidence of Compliance**

1. Press release and/or announcement about center opening
2. Link to website
3. Annual report
4. Signage at Jerome L. Greene Science Center

Columbia University's Implementation Plan and all supporting documentation are made available on the Columbia Neighbors Webpage at <https://neighbors.columbia.edu/content/community-commitments>.




## Public Programs at the Zuckerman Institute

### Science and community come together at Columbia's Mortimer B. Zuckerman Mind Brain Behavior Institute

The Zuckerman Institute is delighted to call Manhattanville home and eager to share with our neighbors the challenge and excitement of learning how our minds and brains work. Our Education Lab, located near the 129th Street entrance of the Jerome L. Greene Science Center, is open year round and hosts a variety of hands-on brain science programs. Designed with feedback from the community, these programs harness the groundbreaking research of the institute in creative ways for school children, families, after-school groups, teachers and adults. Contact us to learn more about our programs; we have only just begun!

### Community Brain Expo

What does a human brain feel like? Come find out at the Zuckerman Institute's Community Brain Expo. We invite our neighbors to join us for this free public event, held every spring, which features head-scratching demonstrations and mind-boggling activities for every age. Visitors put their minds to the test as they learn about how we see the world around us, how our memories work and other fundamental aspects of the mind and brain. Led by actual scientists, the event is organized by Columbia University Neuroscience Outreach, a group of Columbia graduate students devoted to sharing brain science with the public. The event is held in celebration of Brain Awareness Week.



The Zuckerman Institute's  
Kelley Remole explains brain  
science to a group of students.  
Credit: Columbia University



Visitors at the Zuckerman Institute's 2016 Community Brain Expo. Credit: Michael DeVito



2016 BRAINYACs show off posters presenting their research. Credit: Zuckerman Institute

## BRAINYAC: Brain Research Apprenticeships in New York at Columbia

Hands-on experience in a laboratory is essential for preparing today's youth to become tomorrow's scientists. With this in mind, the Zuckerman Institute's Brain Research Apprenticeships in New York at Columbia (BRAINYAC) program provides an immersive science research experience in which high school students train and work in neuroscience laboratories at Columbia University. The BRAINYAC program is open to students from select partner programs and schools that serve students in Upper Manhattan and the Bronx. Each student is matched with a Columbia neuroscientist, a mentor who guides the student through a research project. Students come away from the experience with an enhanced understanding of how laboratory research leads to transformative discovery, exposure to a professional academic environment and a stronger connection to science as a career. BRAINYAC receives generous support from the Pinkerton Foundation and the Stavros Niarchos Foundation.

**For more information about the public programs at Columbia's Zuckerman Institute, please contact:**

Amy Weil  
Director of Communications  
amy.weil@columbia.edu  
212-851-4393

Anne Holden, PhD  
Communications Officer  
anne.holden@columbia.edu  
212-853-0171

## Brain Insight Lectures and Teacher-Scholar Program

At the Brain Insight Lectures, free and open to the public, eminent Columbia scientists and scholars examine how brain science intersects with everyday life. Speakers have included Olajide Williams, MD, who spoke about how to prevent strokes in communities of color and Frances Champagne, PhD, discussed how our early experiences shape our behavior. Upcoming lecture by Thomas M. Jessell, PhD, will share his groundbreaking work on the neuroscience of movement. These lectures are the scientific cornerstone of our Teacher-Scholar Program, which introduces middle and high school science teachers in New York City to cutting-edge brain science for the duration of the school year. Using the lectures as case studies, the teachers participate in workshops and create a lesson plan each semester that brings neuroscience back to their classrooms. Teachers who complete the program emerge with greater knowledge of neuroscience, a deeper understanding of the scientific process and a toolbox of concrete ways to implement their knowledge in the classroom. These programs are made possible with generous support from the Stavros Niarchos Foundation.

## Mind Brain Behavior K-12 Education Center

Link to website:

<https://zuckermaninstitute.columbia.edu/engage>



Columbia University in the City of New York

COLUMBIA | Zuckerman Institute

Mind. Brain. Behavior.

SCIENCE | PEOPLE | PROGRAMS | ENGAGE | EVENTS | NEWS | ABOUT

SEARCH | EMAIL | INSTAGRAM | TWITTER | FACEBOOK | SUPPORT

### Engage

Science and community engage with each other at Columbia's Zuckerman Institute. We are delighted to call Manhattanville home and eager to share with our neighbors the challenge and excitement of learning how our minds and brains work.

*Students learn about the wonders of the brain at the 2016 Community Brain Expo (Credit: Michael DiVito/Columbia University).*

### Explore Science with Us!

We host a variety of hands-on brain science programs in the Education lab at the Jerome L. Greene Science Center, located at 609 W 129th St. Designed with feedback from the community, these programs harness the groundbreaking research of the Institute in creative ways for school children, families, after-school groups and adults. Please see below for a list of our current on-site programs and virtual resources.

Many of our programs such as Art in the Education Lab and Breakout Science grow out of community partnerships. If you are interested in partnering with us, please fill out our [interest form](#) or email [programs@zi.columbia.edu](mailto:programs@zi.columbia.edu).

## **Annual Report: Mind Brain Behavior K-12 Education Center**

State Submission Reporting Period: **October 2023 - September 2024**

The ground floor of the Jerome L. Greene Science Center is open to all and is a neighborhood-based resource for brain science education. On February 11, 2017, the Mind Brain Behavior K12 Education center opened, called the Education Lab. Education programs bring together groundbreaking research in creative and exciting ways for school children, families, adults and teachers. Located near the 129th Street entrance to the building, this 1,500 square foot space was designed to resemble the scientific research laboratories of the Zuckerman Institute.

### **Saturday Science Events and Youth Programming**

One of the Institute's programs at the Education Lab is Saturday Science – a themed free event for students, families and community groups held once a month through the school year. Saturday Science activities and demonstrations are engaging and informative, providing launching points for further exploration, reflection and discovery. All Saturday Science events that occurred during this reporting period were held in person.

During the reporting period, six Saturday Science events were offered. Additionally, visits to the Education Lab with directed activities were organized on two occasions--one for elementary school-aged students and the other for middle-school-aged students. Finally, as part of the summer Manhattanville Community Day, a variety of free, family-friendly activities and presentations were offered, including hands-on demonstrations in the Education Lab and BioBus mobile lab as well as a series of neuro-arts performances, which included dance, a sing-along choir, book readings, and a comedy improv show.

#### **Saturday Science events:**

On October 21, 2023, Saturday Science was held in conjunction with the fall Manhattanville Community Day. 291 children and their families attended, 54% of whom were first-time attendees and 54% of whom lived in the community zip codes. The event held on November 18, 2023 had an attendance of 264, with 53% first-time attendees and 69% community zip code residents. On February 24, 2024, attendance was 246, with 53% first-timers & 62% community residents. On March 23, 2024, attendance was 270 with 46% first-timers & 64% community residents. On April 20, attendance was 291, with 62% first-timers and 44% community residents. On September 28, 2024 attendance was 269 with 54% first-timers & 38% community residents.

#### **Education Lab visits:**

On February 20, 2024, 16 children from the Graham-Windham Manhattanville Community Center visited the Education Lab where they were presented to the octopus and other denizens of the aquarium, discovered the brains of a number of different animals, and designed their own "brain hats." On April 25, 2024, the Education Lab co-sponsored with Columbia Neuroscience Society (CNS) a visit from a dozen home-schooled children, who used fluorescence microscopy to snap pictures of the brains of worms.

#### **Manhattanville Community Day:**

On June 8, 2024, 231 children and their families visited the Education Lab and attended our neuro-arts festival, The Artful Mind, of whom 80% were first-time visitors and 48% were residents in community zip codes.

### **Brain Insight Lectures**

The Zuckerman Institute's free public lecture series, the Stavros Niarchos Foundation Brain Insight Lectures, examines ways that brain science intersects with everyday life. Each lecture features Columbia researchers whose approaches to the science of brain and mind resonate with a public audience. The lectures, offered four times a year, are the scientific cornerstone of the Stavros Niarchos Foundation Teacher-Scholar program, a competitive program that introduces high school science teachers in New York City to cutting-edge brain science for the duration of a school year. This series is beyond the requirement of Columbia's commitment. During this reporting period, there were five events held. All were held in a hybrid format: a small in-person audience with a live streaming option, and a recording was sent to all registrants afterwards. This was a shift we made due to the COVID-19 pandemic in an effort to make this program more accessible. Lectures were held on the following dates: September 12, 2023, November 1, 2023, February 14, 2024, April 3, 2024, and September 17, 2024. Collectively, these events had 244 in person attendees and 1,151 virtual live attendees. Recordings of the lectures garnered a combined 2,000 views on YouTube afterwards.

### **Additional Public Programming**

For the period October 2023 through September 2024, the Education Lab was open to visitors and public programming included the BRAINYAC high school internship program, Saturday Science events, the Stavros Niarchos Foundation Teacher-Scholar program and Brain Insight Lecture series, Art in the Education Lab, the Neuroethics Teacher Institute (a new pilot program for middle school teachers funded by the Dana Foundation), and collaborative community events with partners such as the National Jazz Museum in Harlem, Arts & Minds, The Harlem International Film Festival, and A. Philip Randolph Senior Center in Harlem. During this period, the Education Lab hosted a total number of 1,127 events for a total of 12,842 hours of science programming for the public. This number also includes activities hosted by our partner program, the independently operated BioBus, Inc.

### **Program Outreach**

Each program has a customized publicity strategy built on targeting communities in upper Manhattan and the South Bronx. For example, the Zuckerman Institute publicizes Saturday Science to reach students, families, teachers and community members in upper Manhattan and the South Bronx. Local schools, libraries and community organizations such as Manhattanville Community Center and NYPL are informed of this free, fun-filled event electronically via email and through printed flyers.

The Stavros Niarchos Foundation Teacher-Scholar Program is publicized each spring during its application period to schools in the local community and city-wide via emails and posts to specific mailing lists including I Teach NYC, Math for America, STEM Teachers NYC, and Ingrid's List. Flyers are shared by email with schools including KIPP Infinity Charter School, Frederick Douglass Academy II Secondary School, Opportunity Charter School, Wadleigh Secondary School for the Performing Arts, Edward A Reynolds West High School, Success Academy Charter School - Harlem 1, Urban Assembly for Performing Arts, Harlem Children's Zone Promise Academy Charter School, and Democracy Prep Endurance Charter School.

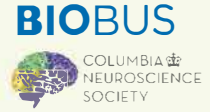
### **Additional Supporting Documentation**

- Copies of Saturday Science flyers and programming materials
- Copy of Stavros Niarchos Foundation Teacher-Scholar Program flyer
- Copies of Art in the Education Lab flyers
- Copies of flyers for community events with partners



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**SATURDAY  
SCIENCE!**



# ACTIONS & REACTIONS!

**Monthly** events for kids of all ages to explore the workings of the brain through **hands-on activities**.



**October 21, 1:00-4:00pm**

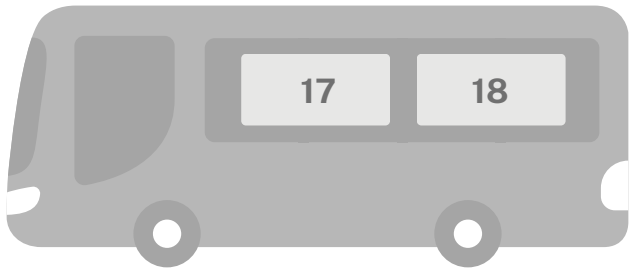
**Jerome L. Greene Science Center**  
605 West 129th Street,  
New York, NY, 10027

Register now!

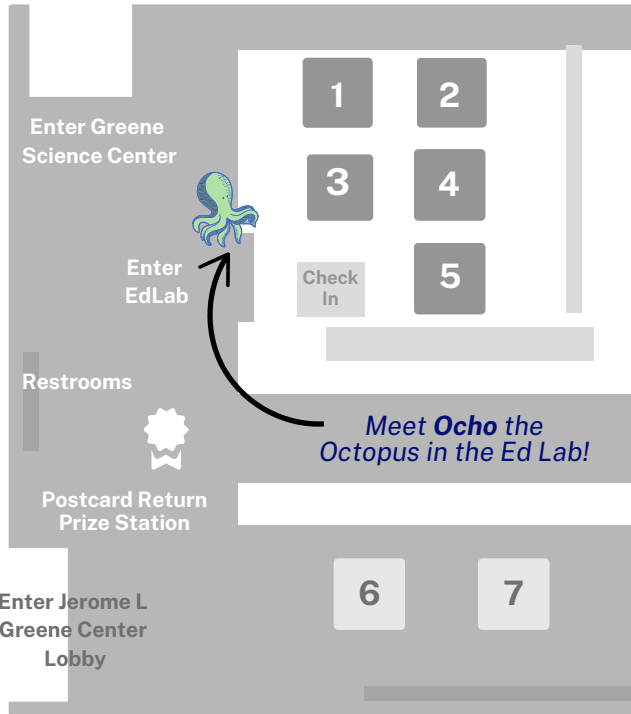


Events are **free** and open to the public.

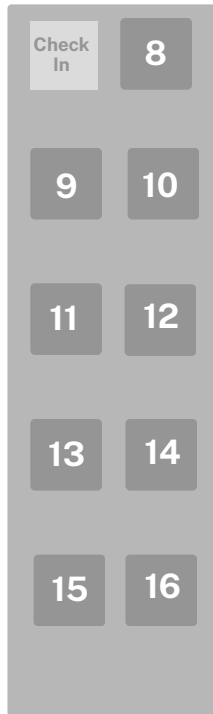




West 129th Street



Dear Mama



MANHATTANVILLE  
COMMUNITY DAY



WELCOME TODAY AND EVERY DAY

# SATURDAY SCIENCE!

## Actions and Reactions

October 21  
1:00-4:00pm

Jerome L. Greene Science Center  
605 W. 129th St. New York, NY 10027

BIOBUS



COLUMBIA | Zuckerman Institute

MORTIMER B. ZUCKERMAN MIND BRAIN BEHAVIOR INSTITUTE

## 1 Start Your Engines!

Use a pulse oximeter to read your HR and oxygen concentration. Then do 10-15 jumping jacks and retake your measurements - what changed and why?

## 2 Feeling Green

Humans feel and react to stimuli, but can plants? See a plant that feels and learn how!

## Shine on you Crazy Daphnia

3 How can you tell an eye is an eye? See what a small organism reacts to and how that gives scientists information about light sensitivity.

## 4 Living Circuit!

Your brain sends electrical signals down your nerves that activate your muscles - they respond to the signal by contracting. Patch into your own electric circuit with Spiker Boxes!

## Think Fast

5 How quickly can you respond to a "Go" signal in a reaction time test? How does it compare?

## 6 Squishy Circuits

Did you know that nerve cells use electrical signals? Mold your own neurons with conductive dough and build an electric circuit!

## 7 Neuro Lounge with Para KIDS!

Para KIDS! joins us to read books about science and scientists and a special dual lingual story in English and Spanish.



## 8 Networking Neurons

How does your brain tell your hand to move? Find your synaptic partners to send a successful signal in this group activity!

## 9 Art in the Park

Join Art in the Park to create your own slime!



## 10 To Go or Not To Go

Quick, choose a response! Test your brain's ability to make the correct decision under time pressure. Can you inhibit your impulses?

## 11 Brain Clocks

All organisms have an internal clock that allows them to change their behavior depending on the time of day. In animals, this clock is in the brain. Come see clock neurons in fruit flies! Presented by the Barnard Neurobiology Lab.

## 12 Catch Me If You Can

Test the limits of your reflexes! Which of your sensory systems can respond the fastest to a falling object?

## 13 Brain Bank

Explore our collection of brains from sheep, human, cuttlefish, and more-- including some exciting new additions!

## Trick and Treat Your Brain

14 Learn about how your brain can get "tricked" into seeing some "phantom" images, and how we can "treat" our brains well and keep them healthy. Presented by the Neurocognition of Language Lab, Teachers College, Columbia University.

## 15 Moods in the Mind

Happy, sad, or mad? Come learn about how humans are excellent at reading facial expressions.

## 16 Topsy Turvy Toss

Challenge your visual and motor systems by playing this fun game of corn hole with vision-shifting goggles!

## 17 Discover Daphnia and Magnify Me!

Meet daphnia, a charismatic crustacean that lives in ponds and that BioBus loves looking at. Then look at yourself under a microscope!

## 18 Bug Bodies!

Get up close with bugs using high resolution microscopes aboard the BioBus!





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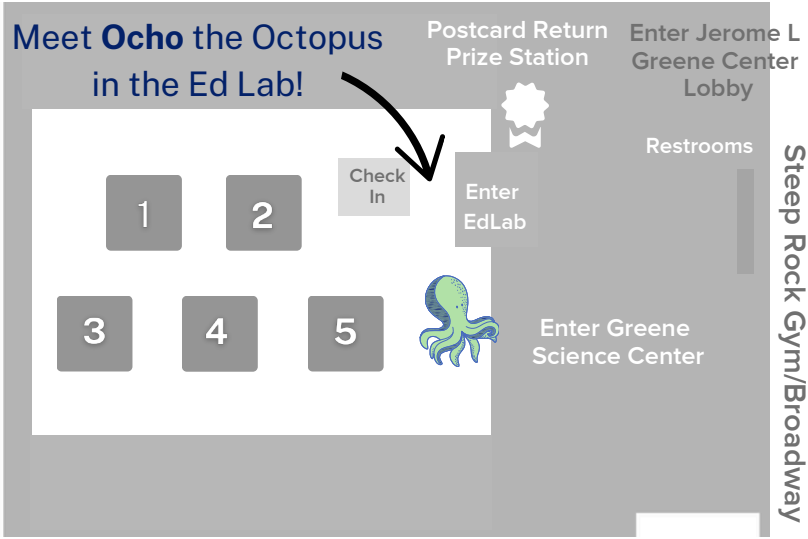
**SATURDAY  
SCIENCE!**

# ≈ ACROSS THE ≈ ANIMAL KINGDOM

NOV 18, 1:00-4:00PM

JEROME L. GREENE SCIENCE CENTER  
605 WEST 129TH STREET  
NEW YORK, NY, 10027





# SATURDAY SCIENCE!

## Across the Animal Kingdom

**November 18**  
**1:00-4:00pm**

**Jerome L. Greene Science Center**  
 605 W. 129th St. New York, NY 10027



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# November Saturday Science Stations



## Where Am I?

1 Explore how our brain encodes location-specific information using a virtual-reality based spatial navigation system! Thanks to our special guest, the Losonczy Lab!

## Avian Adventures!

2 Birds travel the world and color our flyways, but they can also carry new diseases. Learn how BioBus partners with the Wild Bird Fund to track viruses in birds!



## Worm Wrangler

3 Did you ever imagine that you could learn from worms? Scientists breed and study worms to ask big questions about how our brain works, and to learn lots of other secrets of life!

## A Hole in Your Genes?

4 Genes code for our traits and both make us unique individuals, but also members of the same species. See what happens when small changes in the right places change traits in lab animals!

## Bird Song Hero!

5 Birds often communicate by singing! There are many bird songs, but some are more common than others. See if you can 'recognize' songs, using audio and 'spectrograms,' or sonic maps of sounds!

## Brain Bank

6 Explore our collection of brains from sheep, human, cuttlefish, and more!



## 13 Neuro Lounge with Para KIDS!

Para KIDS! joins us to read books about science and scientists and a special dual lingual story in English and Spanish.

## Pheromone Finder

7 Human brains are incredible, but learning from animals with different senses than us can teach us a lot! See how some animals sense their world and what it tells us about ourselves!

## Eyes on Evolution

8 Environments are constantly changing. Do all organisms adapt at the same speed? Come learn about how moths and butterflies have faced man-made challenges in their habitats and how they have adapted.

## Battle of the Bird Beaks

9 Why do birds have such different beaks? Test how the shape of the beak can help gather some foods better than others!

## Sleeping Across Species

10 Animals can be nocturnal, diurnal, or both. What influences an animal's sleeping pattern? Put your knowledge to the test through a fun matching game!

## Urban Park Rangers

11 Meet the NYC Urban Park Rangers and hear how they protect our parks, educate New Yorkers about native fauna, and keep New York parks in top shape!



## Art in the Park

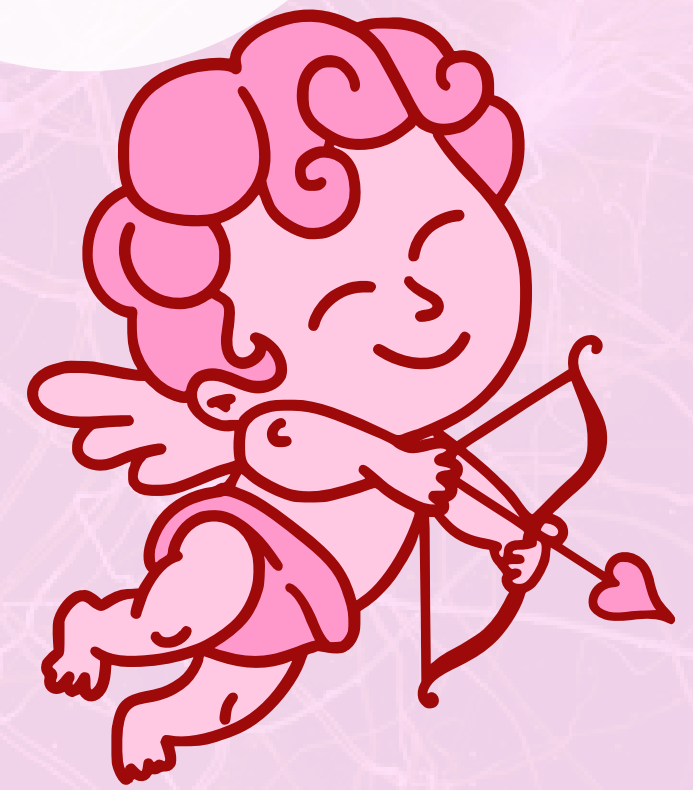
12 Explore the animal kingdom through art!





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**SATURDAY,  
SCIENCE!**



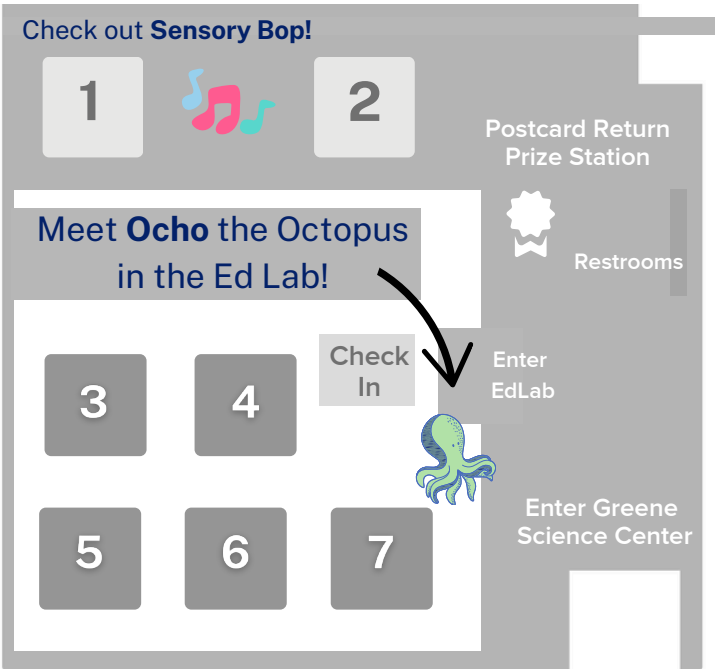
# EMOTIONS ON THE MIND



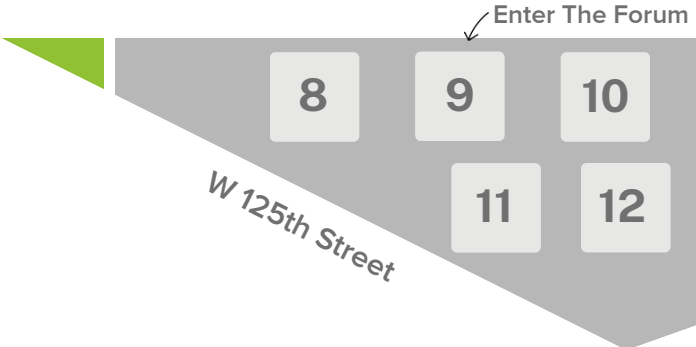
**FEB 24, 1:00-4:00PM**

**JEROME L. GREENE SCIENCE CENTER  
605 WEST 129TH ST**





W 129th Street



Enter Jerome L  
Greene Center  
Lobby

# SATURDAY SCIENCE!



**Emotions On The  
Mind**

**February 24th  
1:00-4:00pm**

**Jerome L. Greene Science Center**  
605 W. 129th St. New York, NY 10027

**BIOBUS**



**COLUMBIA | Zuckerman Institute**  
MORTIMER B. ZUCKERMAN MIND BRAIN BEHAVIOR INSTITUTE



# February Saturday Science Stations



**1 Neuro Lounge with Para KIDS!**  
Para KIDS! joins us to read books about science and scientists and a special dual lingual story in English and Spanish.



**2 Be Kind to Your Mind**  
Sometimes a new perspective is all you need to learn new things. Train your brain to conquer challenges!

**3 Have a Laugh!**  
Our mood is influenced by the context of what's around us. Even the TV shows we watch are colored by music and laughter. See what happens if you add or remove a 'laugh track' to funny or serious shows.

**4 Color Your Feelings**  
People associate different feelings and moods with different colors. What feelings does a color make you feel? Learn which emotion you associate each color with!

**5 Understanding Love Through Puppets?**  
BioBus College Jr Scientists had the opportunity to make stop motion videos of research done in the Zuckerman Institute. Watch our student videos and then see if you can script your own puppet show about emotions.

**6 Have a Heart**  
Look at real, physical hearts and heart models to understand how the organ that pumps your blood keeps you alive and healthy!

**7 The Scope of the Future**  
BioBus is helping to build a new microscope to study what lives in pond water - but it uses a powerful learning computer. See what it can show you in one application of AI!

**8 That "Loving" Feeling**  
How do we feel love? Learn about the chemicals in your brain that make you feel connected with others.

**9 Synaptic Pen Pals**  
How do neurons send messages to one another? Let's throw some ideas around and learn about neurotransmitters!

**10 Nurturing Your Brain**  
Create and wear your very own 3D brain hat! Customize your hat with tags of things that keep your brain healthy.

**11 Brain Bank**  
Explore our collection of brains from sheep, human, whale, and more!

**12 Art in the Park**  
Explore, express, and channel your emotions through art!



## Sensory Bop!

Watch the video created by the artist Sleepyfoot! for our Art in the Education Lab program. The artist is interested in how the different senses are connected in the brain and work together.







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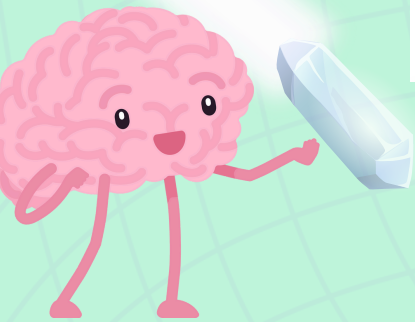
**SATURDAY**  
**SCIENCE!**

**BIOBUS**



# SEEING PAST THE SENSES

MONTHLY EVENTS FOR KIDS OF ALL AGES TO EXPLORE THE WORKINGS  
OF THE BRAIN THROUGH HANDS-ON ACTIVITIES.



Check out **Sensory Bop!**

1



2

Postcard Return  
Prize Station

Meet **Ocho** the Octopus  
in the Ed Lab!



Restrooms

Check  
In

Enter  
EdLab

3

4



Enter Greene  
Science Center

5

6

7

Steep Rock Gym/Broadway

W 129th Street

Enter The Forum

8

9

10

W 125th Street

11

12

Enter Jerome L  
Greene Center  
Lobby

# SATURDAY SCIENCE!



## SEEING PAST THE SENSES

March 23rd  
1:00-4:00pm

**Jerome L. Greene Science Center**  
605 W. 129th St. New York, NY 10027

**BIOBUS**



Columbia  
University  
Neuroscience  
Outreach

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# MARCH SATURDAY SCIENCE STATIONS

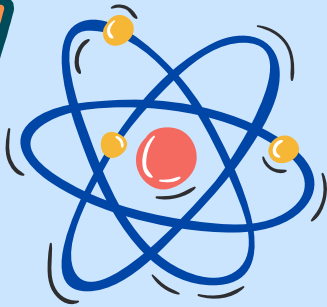


- 1 Neuro Lounge with Para KIDS!**  
Para KIDS! joins us to read books about science and scientists and a special dual lingual story in English and Spanish.
- 
- 2 Hear Here**  
Where did that sound come from? Come get an earful of some groovy auditory illusions and learn how brains localize sound!
  - 3 Odor Over-Loader**  
Our noses are very good at smelling one or two scents, but other animals (like mice) can smell as many as 8 scents simultaneously. How well would you smell in mouse-world?
  - 4 A Cool Activity**  
See how your skin senses temperature and how past experiences influence present perceptions. Warning - you may get wet!
  - 5 Optical Illusions**  
See some classic optical illusions and discuss why your brain jumps to conclusions!
  - 6 Moving Parts**  
The human brain is trained to respond to expected movements - these mental shortcuts can sometimes lead to us getting it wrong! See how you fare in a video optical illusion situation.

- 7 Intelligent Microscope**  
See how a microscope can be taught “to see” using artificial intelligence. Does the computer make as good of a teacher as a human?
- 8 Seeing with Microscopes**  
See a few different ways of improving our sense of sight. Learn about microscopy and how it makes lots of science possible!
- 9 Topsy Turvy Toss**  
Put your motor skills to the test when you compete in a fun bean bag toss – but with goggles that flip your world around!
- 10 Brain Bank**  
Explore our collection of brains from sheep, human, whale, and more!
- 11 Tricky Treats**  
What senses do you need for taste? Test your ability to discriminate jelly bean flavors in this tasty activity!
- 12 Magic Mirror**  
Is that arm mine? Be tricked to think your arm is not your own through this illusion!

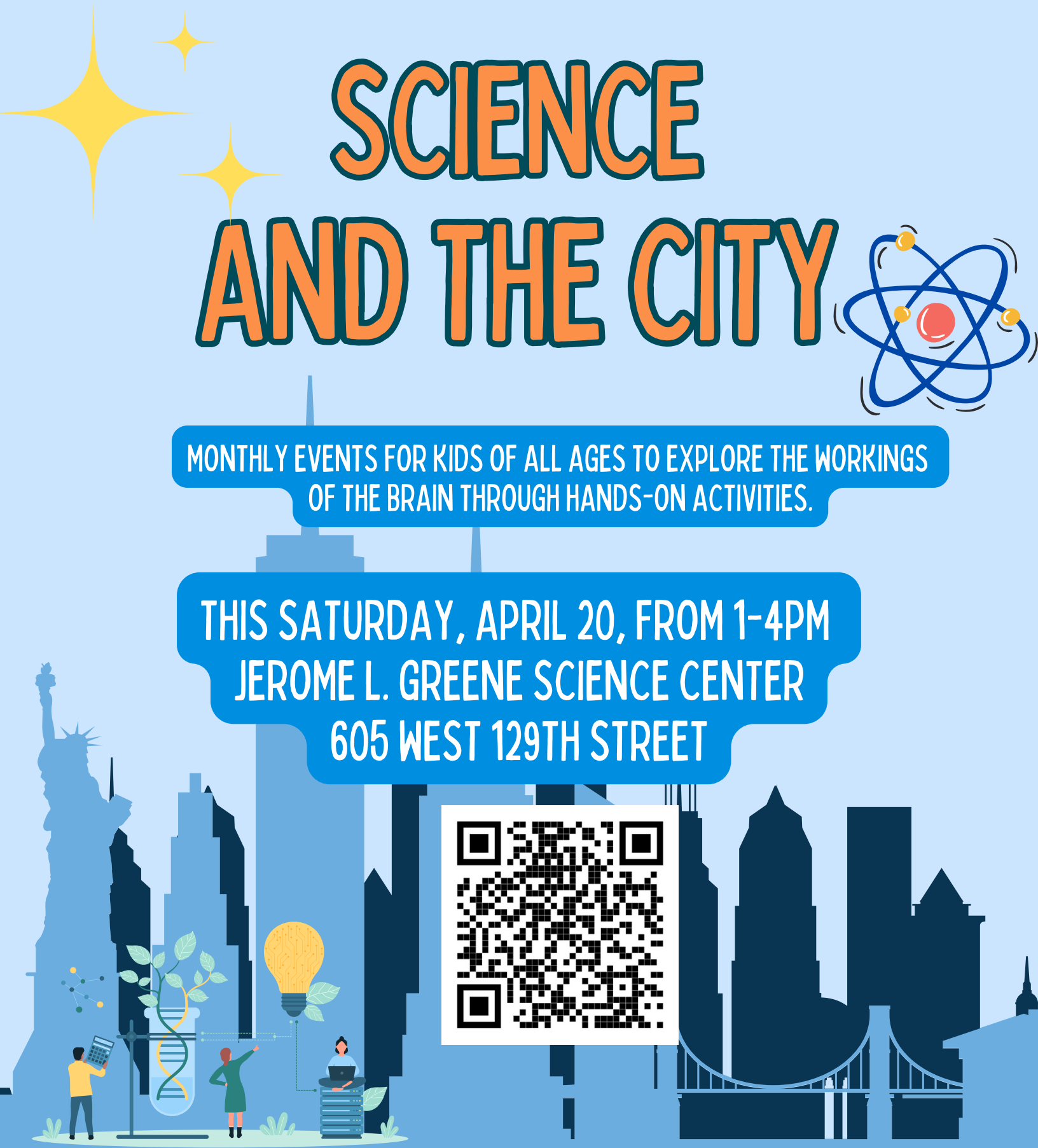


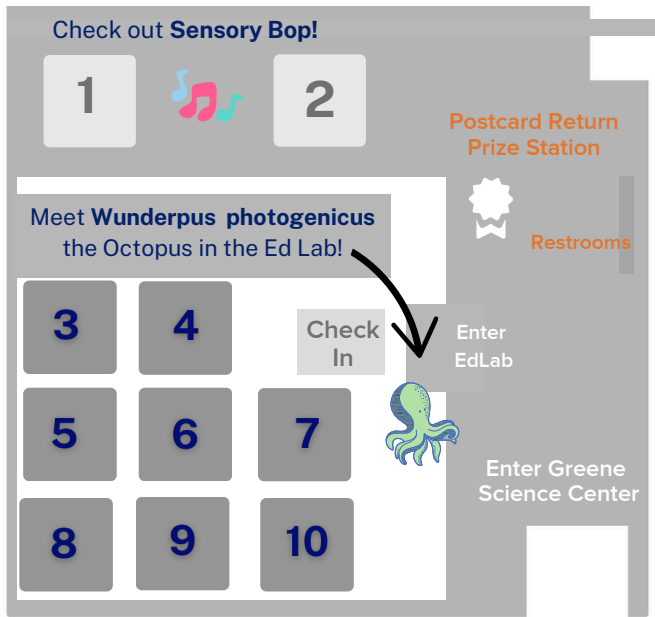
# SCIENCE AND THE CITY



MONTHLY EVENTS FOR KIDS OF ALL AGES TO EXPLORE THE WORKINGS  
OF THE BRAIN THROUGH HANDS-ON ACTIVITIES.

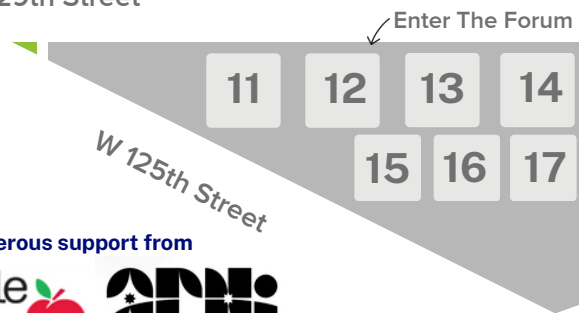
THIS SATURDAY, APRIL 20, FROM 1-4PM  
JEROME L. GREENE SCIENCE CENTER  
605 WEST 129TH STREET





Steep Rock Gym/Broadway

W 129th Street



W 125th Street

Enter Jerome L  
Greene Center  
Lobby

# SATURDAY SCIENCE!

## SCIENCE AND THE CITY

**April 20**  
**1:00-4:00pm**

**Jerome L. Greene Science Center**  
605 W. 129th St. New York, NY 10027

**BIOBUS**



With generous support from  
**Apple Bank**  
**Artificial and Natural Intelligence**

**COLUMBIA | Zuckerman Institute**  
MORTIMER B. ZUCKERMAN MIND BRAIN BEHAVIOR INSTITUTE

# MARCH SATURDAY SCIENCE STATIONS

## 1 Neuro Lounge with Para KIDS!

Para KIDS! joins us to read books about science and scientists and a special bilingual story in English and Spanish.

## 2 Brain Clocks with Barnard Neurobiology Lab

All organisms have an internal clock that allows them to change their behavior depending on the time of day. In fruit flies, this clock is in the brain!

## 3 Art in the Education Lab



Take part in a collaborative art project. Help artist Ezra Wube create a stop-motion animated film that will explore science through an artistic lens.

## 4 Intelligent Microscope

See how a microscope can be taught “to see” using artificial intelligence. Does the computer make as good of a teacher as a human?

## 5 A-Maze-ing Research

Get a glimpse of what students at BioBus are doing to understand decision-making in invertebrates!

## 6 Daphnia Craft

Look at our favorite animals (daphnia) and see if you can build one!

## The New York Aquarium

7 Dive into the ocean with the New York Aquarium! Learn how our Seascope team researches sharks and helps protect local wildlife and wild places.



## 8 Imaging with Electrons

See the power of the Electron Microscope as we look at some of the smallest samples in the lab!

## 9 City Nature Challenge

Learn how to use the iNaturalist App to take part in April 26th’s City Nature Challenge!

## 10 Wild Bird Fund



Learn about the rich diversity of the city’s wildlife and how to help it thrive.

## 11 Brain Bank

Explore our collection of brains from sheep, human, whale, and more!



## 12 Urban Park Rangers

Meet the NYC Urban Park Rangers and hear about how they protect our parks, educate New Yorkers about native fauna, and keep New York parks in top shape!

## 13 Glowly Worms



Scientists use fluorescence microscopy to investigate the brains of organisms that are too small to see. Learn to do it yourself by snapping some pics of glowing mutant microscopic worms.

## 14 City Slickers

What does it take for animals to thrive in NYC? Come learn about how different species have adapted to city life.

## 15 Squishy Circuits

Did you know that nerve cells use electrical signals? Mold your own neurons with conductive dough and build an electric circuit!

## 16 Apocalypse Writing with

Cosmic Writers  
How do you think the world will end: by fire, flood, earthquake, or something else? Write a story about a natural disaster that creates an apocalypse.



## 17 Battle of the Bird Beaks

Why do the birds of NYC have such different beaks? Test how the shape of the beak can help gather some foods better than others!



**SENSORY BOP:**  
WATCH THE VIDEO CREATED BY THE ARTIST SLEEPYFOOT?

**June 8, 2024, 12pm-4:30pm**  
**Columbia's Manhattanville Campus**  
**125th & Broadway**



# The Artful Mind: A Celebration of the Brain, Art, & Wellness



# MANHATTANVILLE COMMUNITY DAY



**WELCOME TODAY AND EVERY DAY**

**EVERY VOICE  
CORNERSTONE CHOIR**  
INTERGENERATIONAL COMMUNITY SINGING



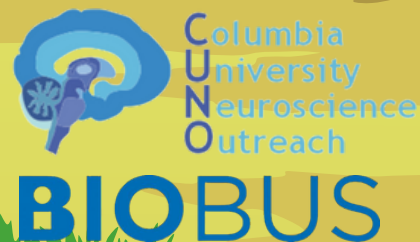


COLUMBIA | Zuckerman Institute  
MORTIMER B. ZUCKERMAN MIND BRAIN BEHAVIOR INSTITUTE

# SENSING A CLIMATE CHANGE

MONTHLY EVENTS FOR KIDS OF ALL AGES TO EXPLORE THE WORKINGS  
OF THE BRAIN THROUGH HANDS-ON ACTIVITIES.

SATURDAY, SEPTEMBER 28, FROM 1-4PM  
JEROME L. GREENE SCIENCE CENTER  
605 WEST 129TH STREET







Enter Jerome L  
Greene Center  
Lobby

Steep Rock Gym/Broadway



# SENSING A CLIMATE CHANGE



September 28  
1:00-4:00pm

Jerome L. Greene Science Center  
605 W. 129th St. New York, NY 10027

BIOBUS



COLUMBIA | Zuckerman Institute  
MORTIMER B. ZUCKERMAN MIND BRAIN BEHAVIOR INSTITUTE

With generous support from



# SEPTEMBER SATURDAY SCIENCE STATIONS



## 1 **Neuro Lounge with Para KIDS!**

Para KIDS! joins us to read books about science and scientists and a special bilingual story in English and Spanish.

## 2 **Our Bodies Are Ecosystems**

Learn about the many similarities between the human body and the natural world.

## 3 **Eyes on Evolution**

Environments are constantly changing. Do all organisms adapt at the same speed? Come learn about how moths and butterflies have faced man-made challenges in their habitats and how they have adapted.

## 4 **Intelligent Microscope**

See how a microscope can be taught “to see” using artificial intelligence. Does the computer make as good of a teacher as a human?

## 5 **Invertebrate Eyes**

Take a closer look at the eyes of creepy crawlies and compare them to the eyes of other kinds of organisms.

## 6 **How Do I Look?**

Vision is amazing and complex, but what happens if things go wrong? Learn how you see, and explore a few common visual disorders to see how the world would look by using special lenses.

## 7 **Jellyfish: Bloodless & Brainless!**

Not only do jellyfish have a unique neural structure, but they are a key indicator of the environment!

## 8 **Cyanovengers**

Trouble is blooming! What do these tiny algae mean for plants and animals in aquatic ecosystems?

## 9 **Mixed Feelings**

How well can your brain tell the difference between hot and cold water? What do your nerves say?

## 10 **Pop Goes the Smell**

Chemicals in the air all fit into specific receptors in our nose, and they signal incredibly fast to let us sense smells. Can you keep up with your nose?

## 11 **Sight With No Eye?**

When a living thing is light sensitive, does it need to have an eye? What do you call it if it doesn't?

## 12 **Topsy Turvy Toss**

Put your motor skills to the test when you compete in a fun bean bag toss—but with goggles that flip your world around!

## 13 **Brain Bank**

Explore our collection of brains from sheep, human, whale, and more!

## 14 **Build-A-Neuron**

Use pipe cleaners and beads to create an original model of a neuron! Explore different neuron shapes and how they serve our senses.

## 15 **Hear Here**

Where did that sound come from? Come get an earful of some groovy auditory illusions and learn how brains localize sound!



**TABULA RASA:**

**WATCH THE VIDEO CREATED BY THE ARTIST EZRA WUBE!**

***Applications are now open!***



## **Are you a high school teacher in New York City?**

Do you teach science or math, or have an interest in brain science?  
If so, this fellowship is for you!

Based at Columbia University's Zuckerman Institute, the Stavros Niarchos Foundation Teacher-Scholar Program offers an opportunity to learn about cutting-edge neuroscience research and be part of a team creating educational materials to bring neuroscience into your classroom.

This is a paid 1-year fellowship at Columbia University for the  
2024-2025 school year.

Questions? Contact [programs@zi.columbia.edu](mailto:programs@zi.columbia.edu)

Apply online by June 3, 2024 at 11:59 PM:  
<https://bit.ly/TeacherScholar2425>



*Scan here for program details and application*

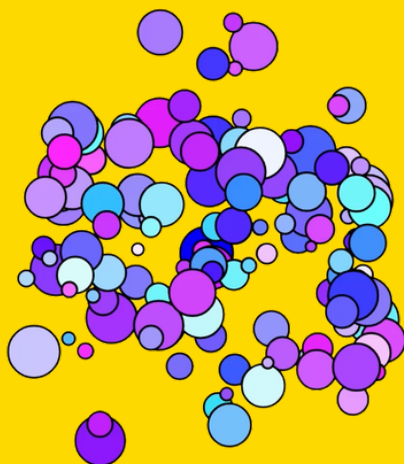
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MORTIMER B. ZUCKERMAN MIND BRAIN BEHAVIOR INSTITUTE

# ART IN THE ED LAB: SENSORY BOP

ART OPENING

Friday  
Sep 29  
5:30pm-  
7:30pm



Jerome L. Greene  
Science Center,  
Education Lab  
605 West 129th Street

Join us for drinks and refreshments as we unveil the 2023-2024 *Art in the Education Lab* commission by interdisciplinary artist *Sleepyfoot?*.



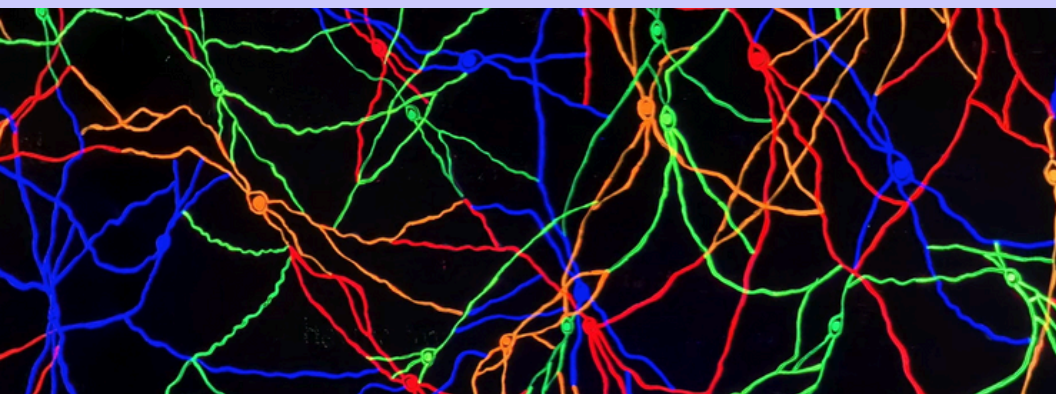


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MORTIMER B. ZUCKERMAN MIND BRAIN BEHAVIOR INSTITUTE

# ART OPENING

## “TABULA RASA”

### by EZRA WUBE



THURSDAY, SEP 26 — 5:30PM-7:30PM

JEROME L. GREENE SCIENCE CENTER,  
EDUCATION LAB 605 WEST 129TH STREET

Join us for drinks and refreshments as we unveil the 2023-2024 *Art in the Education Lab* commission by artist **Ezra Wube!**

FREE!





## **Rhythm & Reason** **Live at The National Jazz Museum in Harlem!**

Rhythm and Reason brings together music and science as we celebrate the way that music affects our brains and bodies.



**Wednesday,  
October 11, 2023  
2pm - 3pm**

Rhythm and Reason is a collaboration between Arts & Minds, National Jazz Museum in Harlem, Columbia University's Zuckerman Institute.

Join jazz pianist/composer and 2019 Zuckerman Institute Jazz Artist-in-Residence Helen Sung, and Zuckerman Institute Neuroscientist Dr. Michael Shadlen, for a program of live music with a side of science at The National Jazz Museum in Harlem.

**Designed for caregivers and people with memory loss.  
Fun for everyone! All are welcome!**

**The program is free.  
Registration is required:**

**National Jazz  
Museum in Harlem**  
58 W 129th St  
Ground Floor, 2203  
New York, NY 10027



**Next Month: Thursday, November 9th**  
**Rhythm & Reason Live! at A. Philip Randolph Older Adult Center**

Rhythm

&

Reason



Live in person! Jazz pianist/composer Helen Sung  
and neuroscientist/jazz guitarist Dr. Michael Shadlen

Rhythm and Reason is a free program designed especially for  
individuals with memory loss and their caregivers.

Wed., October 11  
2:00-3:00 pm

The National Jazz  
Museum in Harlem,  
58 W 129th St

SCAN ME



## Rhythm & Reason

**Live at the A. Philip Randolph Older Adult Center!**

Rhythm and Reason brings together music and science as we celebrate the way that music affects our brains and bodies.



Thursday  
Nov 9th, 2023  
1:15pm - 2:15pm

A. Philip Randolph  
Older Adult Center:  
108 W 146th St,  
New York, NY 10039

Join jazz pianist/composer and 2019 Zuckerman Institute Jazz Artist-in-Residence Helen Sung, and Zuckerman Institute Neuroscientist Dr. Michael Shadlen, for a program of live music with a side of science.

**The program is free.  
Registration is required:**



Rhythm and Reason is a collaboration between Arts & Minds, A. Philip Randolph Older Adult Center, and Columbia University's Zuckerman Institute.

**Designed for caregivers and people with memory loss.  
Fun for everyone! All are welcome!**

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<https://bit.ly/45IZYI7>



# STUDIO MUSEUM IN HARLEM

## *Open Art*



The Studio is Open! Join us for a two-hour program that explores art and self-care with art therapist Chloe Holly Hayward and Ph.D. candidate and Neurobiology & Behavior Fellow Rachel Frazer.

Take a look at works of art in Columbia's Wallach gallery and discover personally meaningful connections through discussion and the exploration of art materials. Come and connect with community through creativity!

No art making experience necessary.  
All adults welcome.

May 16, 2024  
6 pm—8 pm

Mortimer B. Zuckerman Mind Brain Behavior  
Institute  
Jerome L. Greene Science Center,  
Quad 5B  
3227 Broadway, New York, NY 10027

**WALLACH  
ART  
GALLERY**  
COLUMBIA UNIVERSITY

COLUMBIA | Zuckerman Institute  
MORTIMER B. ZUCKERMAN MIND BRAIN BEHAVIOR INSTITUTE

19TH ANNUAL

# Harlem

international  
film festival

2024

CELEBRATING 100+ YEARS  
OF HARLEM RENAISSANCE  
& RESILIENCE

# MAY 16-25

COLUMBIA | Zuckerman Institute

MORTIMER B. ZUCKERMAN MIND BRAIN BEHAVIOR INSTITUTE

WASSLES  
DOCUMENTARY  
CENTER

aloft  
HARLEM



[HarlemFilmFestival.org](http://HarlemFilmFestival.org)

NYC

Media &  
Entertainment

## MUSIC ON THE BRAIN:

# *Matriarchal Legacy*

Join for a jazz concert and dialogue with multi-instrumentalist jazz musician, composer, and educator T.K. Blue; pianist Greg Murphy; and our guest speaker (and a musician herself!) Sarah Bennett, M.S., a Research Assistant at Columbia University.

Thursday, October 26

7:00 - 8:00pm

**The National Jazz Museum in Harlem:** 58 West 129 Street,  
New York, NY 10027

Register here:

<https://bit.ly/3PQcg58>



Sarah Bennett



TK Blue



# MUSIC ON THE BRAIN: *The Magic of Touch*

Join multi-instrumentalist jazz musician, composer, and educator T.K. Blue, pianist Sharp Radway, and Zuckerman Institute Neuroscientist Dr. Anastasia-Maria Zavitsanou for a jazz concert and dialogue, exploring the fascinating interplay between auditory and tactile perception.

Thursday, November 30

7:00 - 8:00pm

The National Jazz Museum in  
Harlem: 58 West 129 Street,  
New York, NY 10027

Register here:

<https://bit.ly/3MoYgi0>



Dr. Zavitsanou

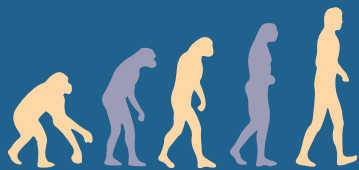


TK Blue



# MUSIC ON THE BRAIN: The Mechanisms of Evolution in Music and Nature

Join multi-instrumentalist jazz musician, composer, and educator T.K. Blue, pianist Sharp Radway, and Zuckerman Institute evolutionary biologist Wyatt Toure for a jazz concert and dialogue, exploring the fascinating parallels between evolution and jazz improvisation.



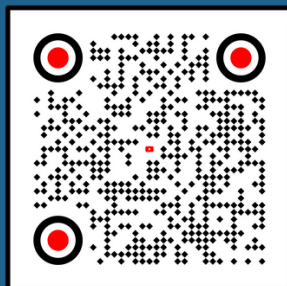
Thursday, February 29

7:00 - 8:00pm



The National Jazz Museum in  
Harlem: 58 West 129 Street,  
New York, NY 10027

Register here:  
<https://bit.ly/febmotb>



SCAN ME



Wyatt Toure



TK Blue

# MUSIC ON THE BRAIN

## Defying Expectations: Memory, Learning, and Spontaneous Creation in the Brain

Join multi-instrumentalist jazz musician, composer, and educator **T.K. Blue**, pianist **James Austin**, and Zuckerman Institute PhD student and NSF Fellow **Abhi Shah** for a jazz concert and dialogue, exploring the fascinating parallels between neuroscience and jazz improvisation.

Thursday, March 28

7:00 - 8:00pm

The National Jazz Museum

in Harlem: 58 West 129

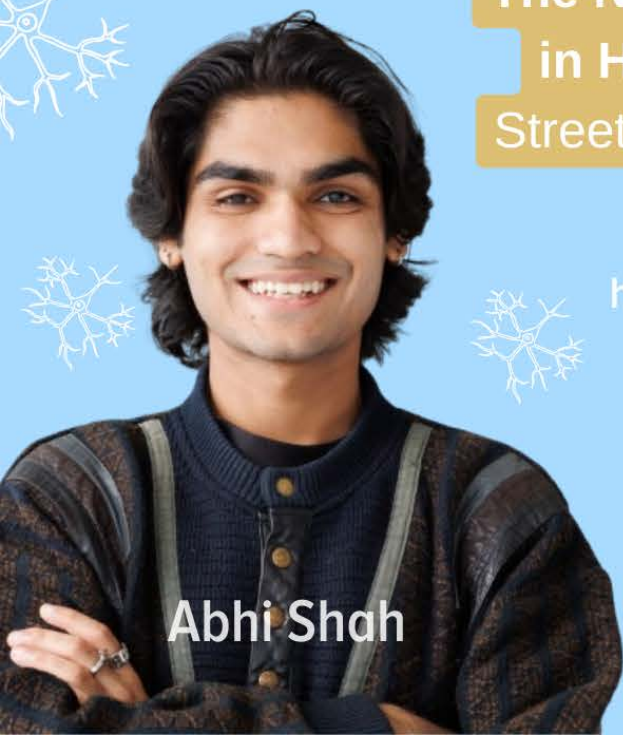
Street, New York, NY 10027

Register here:

<https://bit.ly/marchmob>



SCAN ME



Abhi Shah



TK Blue

# MUSIC ON THE BRAIN: It's Not Just For The Birds

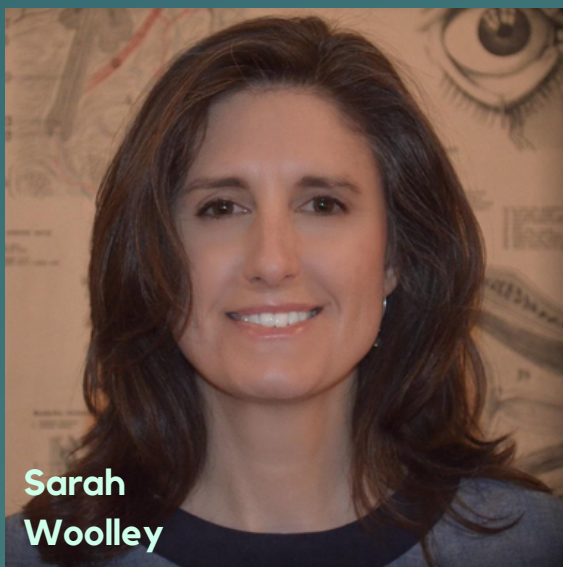
Join jazz pianist and composer **Helen Sung** and Zuckerman Institute Principal Investigator **Sarah Woolley** for a jazz concert and dialogue exploring the fascinating parallels between neuroscience and jazz improvisation

**THURSDAY, APRIL 25, 2024**  
**7-8 PM**

**REGISTER HERE:**  
[bit.ly/aprilmotb](https://bit.ly/aprilmotb)

**THE NATIONAL JAZZ MUSEUM  
IN HARLEM**

58 WEST 129 STREET  
NEW YORK, NY 10027



# MUSIC ON THE BRAIN

## Music Swings the Mood

Join jazz musician, composer, and educator **T.K. Blue**, pianist **Kelly Green**, and final-year Doctoral candidate **Joy Reeve** for a jazz concert and dialogue exploring how music evokes emotions... and sometimes confounds our expectations.

**THURSDAY, MAY 23, 2024**

**7-8 PM**

**REGISTER HERE:**

[bit.ly/maymotb](https://bit.ly/maymotb)

**THE NATIONAL JAZZ MUSEUM  
IN HARLEM**

58 WEST 129 STREET  
NEW YORK, NY 10027



**T.K.  
Blue**



**Joy  
Reeve**



# JEROME L GREENE SCIENCE CENTER

GREENE SCIENCE CENTER  
ZUCKERMAN INSTITUTE

DANGER

DANGER

**GREENE SCIENCE CENTER  
ZUCKERMAN INSTITUTE**

ATTENTION:  
Please do not use the building's elevators for personal use.


NO SMOKING  
WITHIN 25 FEET  
OF THE BUILDING



**EDUCATION  
LABORATORY**

**609 W 129**

**EDUCATION  
LABORATORY**

 **SMOKING PROHIBITED  
WITHIN 25 FEET  
OF THE BUILDING**



**CREA  
OUT**



Zuckerman Institute Education Lab