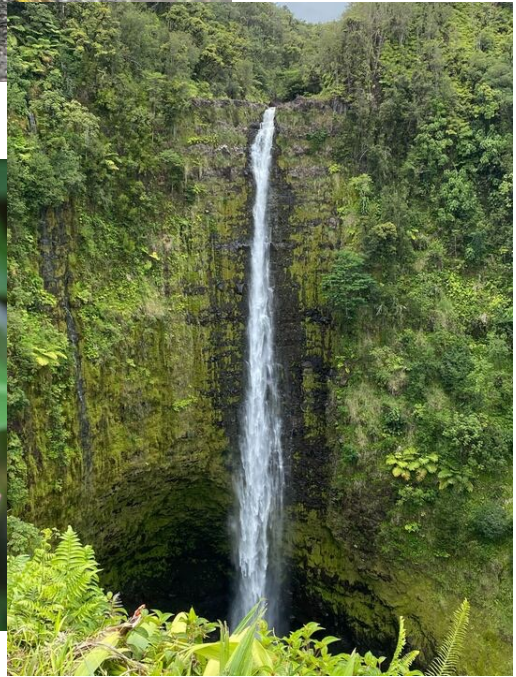




**Appel  
Institute  
Newsletter**

# Appel Newsletter Vol. 10



Pictures by Wenjie Luo

Every ending is a new beginning, and as the summer sun sets, it paves the way for a fresh chapter filled with endless possibilities.

Let's embrace the changing seasons with open hearts and open minds, knowing that even as one season ends, another begins to unfold, bringing new adventures and opportunities our way.

# Escape to the Serene Greenery of our Appel Institute's 9th Floor!

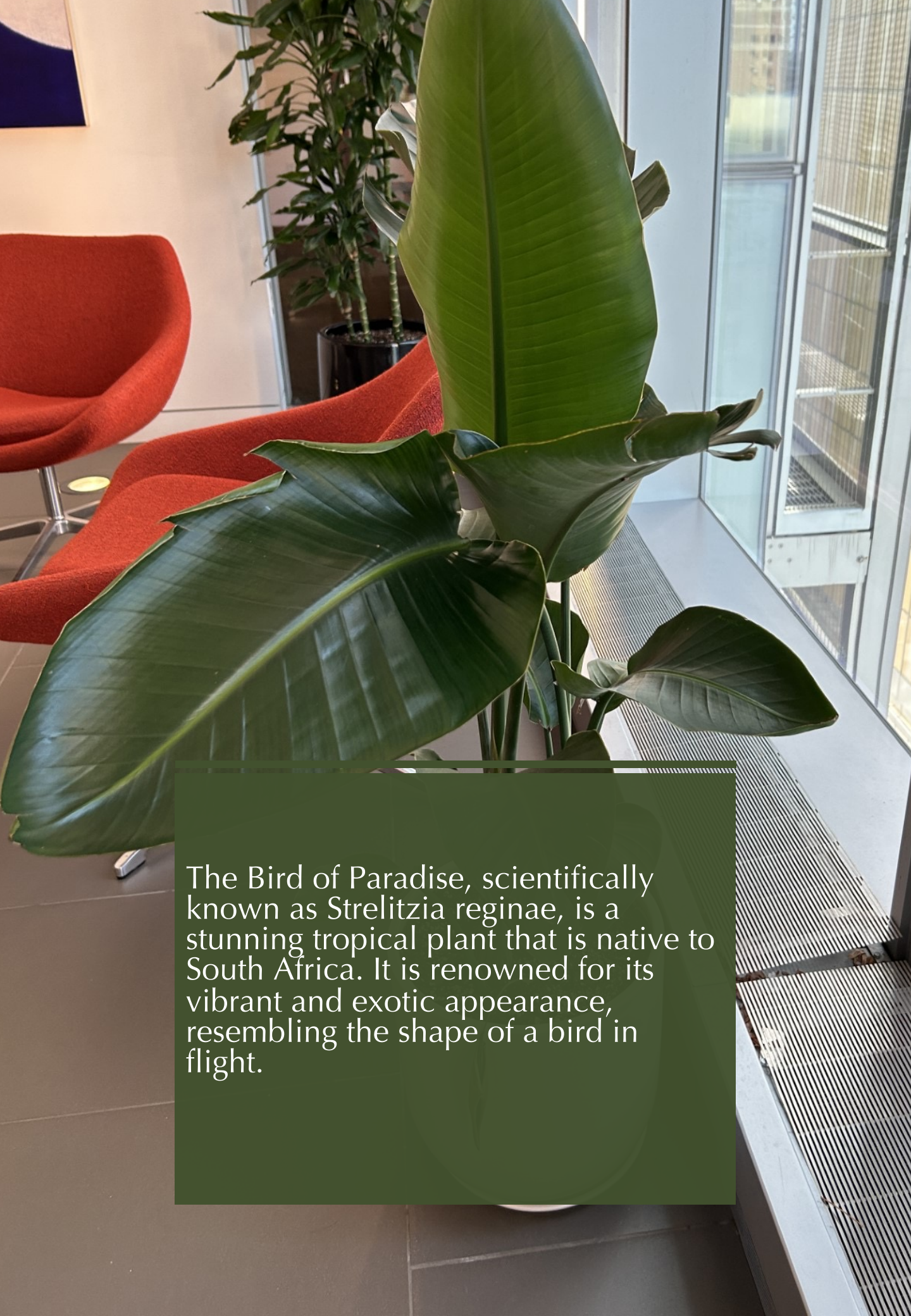
Step away from your desk and immerse yourself in a tranquil oasis right here in our institute.

These plants have been thoughtfully placed throughout the floor, creating a soothing and inviting atmosphere. Take a moment to unwind and recharge amidst their lush foliage, allowing their natural beauty to inspire creativity and promote a sense of calm.

So why not take a break from your busy schedule? Visit our institute's 9th floor today and experience firsthand the restorative power of nature within reach. Let these plants be your companions as you relax and rejuvenate while still being productive at work.

We look forward to seeing you there!

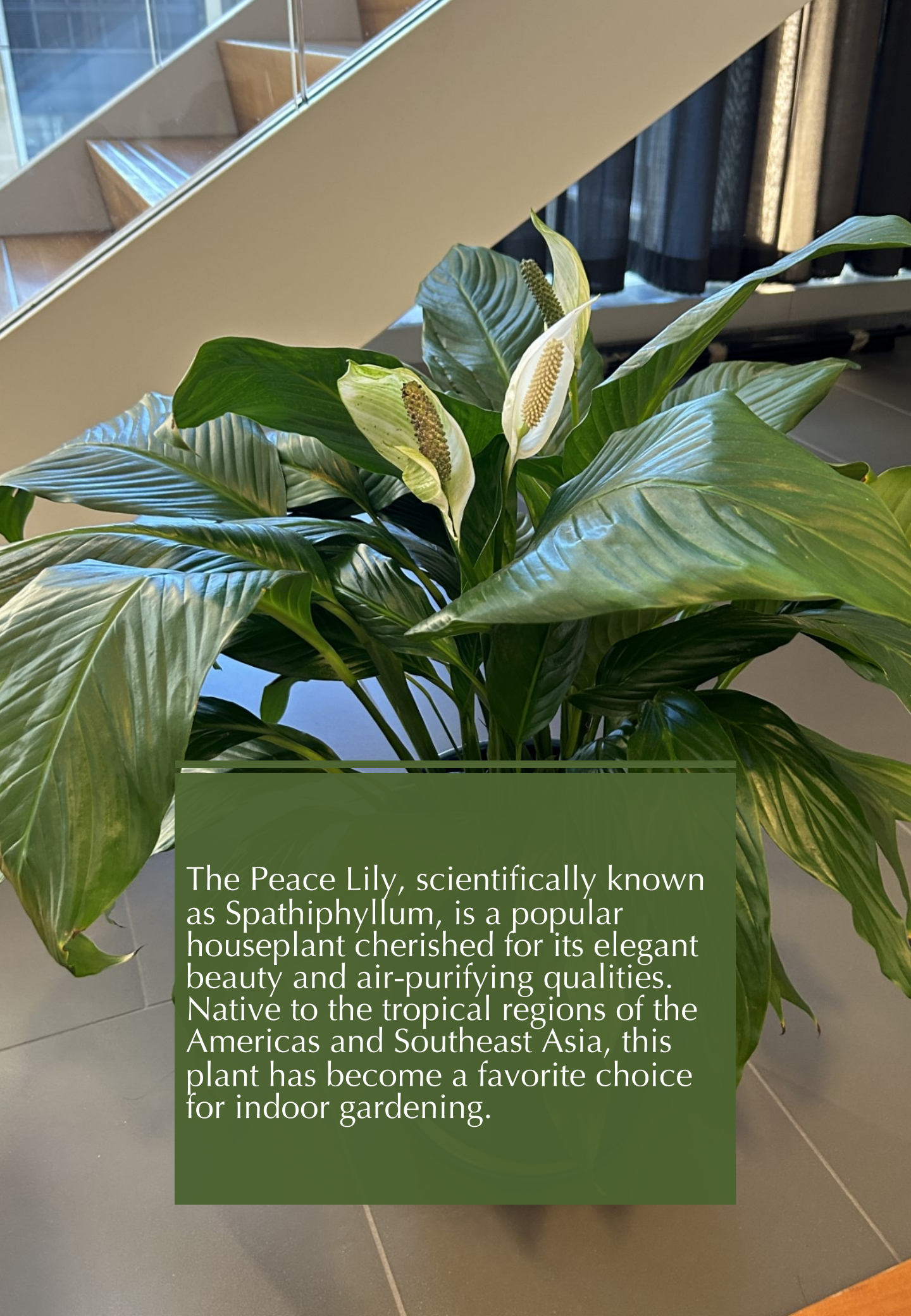


A Bird of Paradise plant (Strelitzia reginae) is the central focus, featuring large, vibrant green, lanceolate leaves and a white spathe with a yellow and red crest. The plant is situated in a modern office environment. To the left, there are two orange armchairs. In the background, another green plant is visible in a black pot. To the right, a large window with a metal grille provides a view of an urban building. The floor is a dark, polished material, and a metal grate is visible near the window.

The Bird of Paradise, scientifically known as *Strelitzia reginae*, is a stunning tropical plant that is native to South Africa. It is renowned for its vibrant and exotic appearance, resembling the shape of a bird in flight.



The Dracaena plant is a popular choice for indoor gardening due to its attractive foliage and low maintenance requirements. Belonging to the Asparagaceae family, this tropical plant genus includes various species known for their vibrant leaves and air-purifying qualities.



The Peace Lily, scientifically known as *Spathiphyllum*, is a popular houseplant cherished for its elegant beauty and air-purifying qualities. Native to the tropical regions of the Americas and Southeast Asia, this plant has become a favorite choice for indoor gardening.

Eleventh Annual  
**Appel Alzheimer's Disease  
Research Institute Symposium**



**SAVE the DATE**

Thursday, November 9, 2023  
4:00 - 6:00 p.m. | New York City

Formal invitation to follow

Scientific presentations by

**Adam L. Boxer, M.D., Ph.D.** | University of California San Francisco

**Anna G. Orr, Ph.D.** | Weill Cornell Medicine

**Eric M. Reiman, M.D.** | Banner Health

**D. James Surmeier, Ph.D.** | Northwestern University Feinberg School of Medicine

The annual **Appel Alzheimer's Disease Research Institute Symposium** highlights groundbreaking research discoveries by leading investigators and provides a platform for discussing the advances being made in the research of Alzheimer's disease and other related neurodegenerative disorders.

Dear community,

We are thrilled to invite you to our highly anticipated **Appel Symposium!**

Mark your calendars and join us on **November 9<sup>th</sup> from 4-6 pm** for an enlightening and engaging event.

Your attendance and active participation are crucial in making this symposium a resounding success.

We look forward to seeing everyone there.



**Orr Lab  
News**

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# Orr Lab



## New Members, Accomplishments, and Milestones

Welcome aboard to three new lab members that have joined  
the Orr lab:

**Minwoo Jang (Postdoctoral Fellow)**  
**Amr Fatafta (Research Technician)**  
**Caroline Booraem (Graduate Student)**

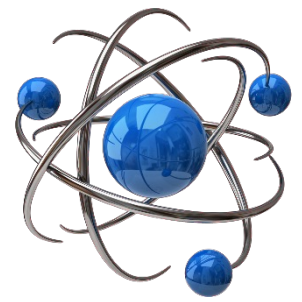


**Double congratulations to Dr. Till Zimmer** in the Orr lab,  
who received TWO postdoctoral fellowships, one from  
**BrightFocus Foundation** and one from the **Alzheimer's  
Association!**

The funded projects are focused on the mechanisms and  
effects of dementia-related lipid dysregulation in astrocytes.



# Orr Lab



## New Members, Accomplishments, and Milestones

**Congratulations to Daniel Barnett** in the Orr lab,  
who received the **F31 NRSA Predoctoral Fellowship** from the  
NIH!

The funded project is entitled: Mitochondrial complex III-derived  
ROS in astrocytic signaling and Alzheimer's disease-related  
pathogenesis.





## New Members, Accomplishments, and Milestones

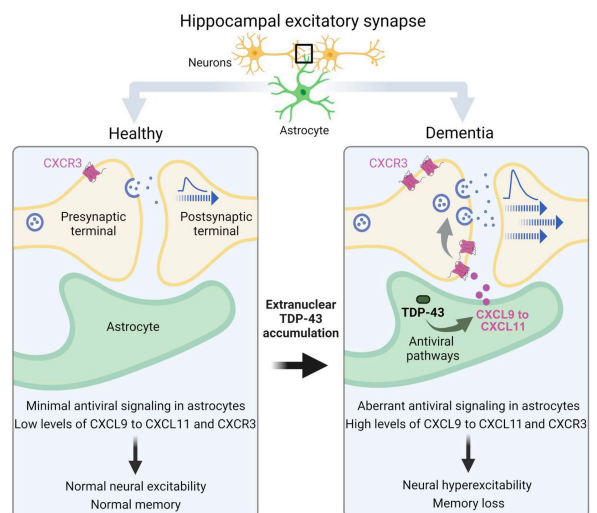
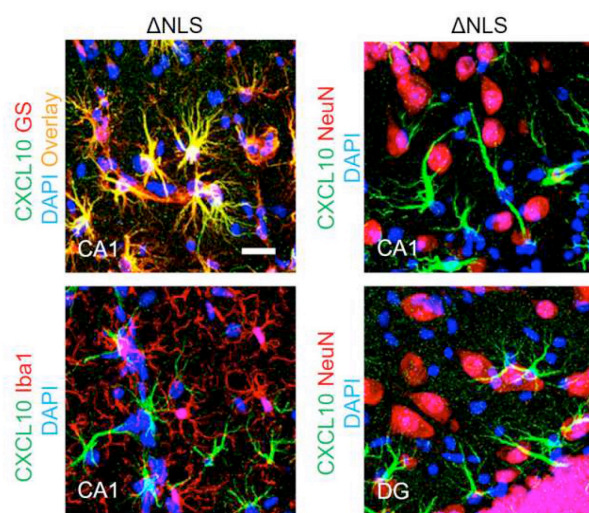
A new study by the Orr lab reveals that dementia-linked buildup of TDP-43 in astrocytes disrupts antiviral pathways and impairs aspects of cognitive function through chemokine signaling.

SCIENCE ADVANCES | RESEARCH ARTICLE

### NEUROSCIENCE

## Astrocytic TDP-43 dysregulation impairs memory by modulating antiviral pathways and interferon-inducible chemokines

Avital Licht-Murava<sup>1,2\*</sup>, Samantha M. Meadows<sup>1,2,3</sup>, Fernando Palaguachi<sup>1,2</sup>, Soomin C. Song<sup>4</sup>, Stephanie Jackvony<sup>1,2,3</sup>, Yaron Bram<sup>5</sup>, Constance Zhou<sup>1,2,6</sup>, Robert E. Schwartz<sup>5</sup>, Robert C. Froemke<sup>4</sup>, Adam L. Orr<sup>1,2\*</sup>, Anna G. Orr<sup>1,2,3,6\*</sup>



# Orr Lab



Welcome  
**Minwoo!**



**Hello Appel!** My name is Minwoo Wendy Jang and you can call me either by Minwoo or Wendy, whichever you prefer. I grew up in South Korea and received Ph.D. in Neuroscience (Nano-Bio-Information-Technology integrated major) at Korea University. I worked with Dr. C. Justin Lee characterizing pathophysiological functions of a protein TMEM43 in glial cells of the cochlea and the brain. I was also engaged in elucidating the molecular mechanism of astrocytic volume changes in the hippocampus and astrocyte-neuron interaction during hemodynamic responses in the sensory cortex. I joined the Orr lab this August as a Postdoctoral Associate in Neuroscience. I wish to expand my research interests to investigating molecular and physiological roles of astrocytes in brain diseases. Outside lab, I love exploring the exciting New York City and the parks. I look forward to meeting you all!



**Minwoo Jang, PhD**  
Postdoctoral Fellow

[mij4009@med.cornell.edu](mailto:mij4009@med.cornell.edu)

# Orr Lab



Welcome  
**Amr!**



Amr Fatafta received his bachelor's degree in Molecular Biology from Skidmore College, with a minor in Management and Business. During undergraduate training, Amr worked in the laboratory of Dr. Bernard Possidente, where he studied the role of glial tauopathy on fruit fly Circadian Rhythms. Amr also studied the possible circadian effects the deletion of SNORD-116 had on Prader-Willi mice models. Outside the Orr Lab, Amr is exploring his new neighborhood in Queens, with all of its locally owned hidden gems.



**Amr Fatafta**  
Research Technician

[mof4009@med.cornell.edu](mailto:mof4009@med.cornell.edu)

# Orr Lab



Welcome  
**Caroline!**



**Hi Appel!** My name is Caroline Booraem. I'm a second-year graduate student in the neuro program and I started in the Orr lab in August! I graduated from Amherst College in 2020, majoring in neuroscience, psychology, and religion. Before coming to Weill Cornell, I worked in Boston at Brigham and Women's Hospital in a lab investigating the inflammatory response after stroke and intracerebral hemorrhage, mainly focusing on changes in peripheral immune cells that eventually contribute to swelling in the brain after such injuries. In the Orr lab, I'm interested in neuroimmunology and redox biology, and I will be working on a project investigating how neurotransmitters can alter astrocytic ROS production. Outside of the lab I enjoy running, knitting, and reading!



**Caroline Booraem**  
Graduate Student

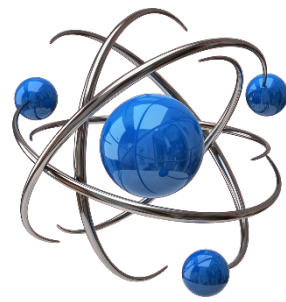
[ceb4003@med.cornell.edu](mailto:ceb4003@med.cornell.edu)



**Wu Lab**

**• NEWS**

# Wu Lab



Welcome  
Annette!



Hi Appel! My name is Annette Izumi and I am a research technician in the Wu lab. I graduated from Brown University this year with a concentration in Neuroscience. Previously, I worked in the Guo Lab at UCLA, investigating genes that could rescue phenotypes of *Drosophila* PINK1 and parkin mutant. At Brown, I worked closely with Dr. Reenan in his lab to observe the regulations of TDP-43 isoforms alongside characterizing *Drosophila* TBPH mutants. As someone especially fascinated by neurodegeneration, I am interested in investigating the structural changes in circuitry seen in disease processes using novel three-dimensional imaging methods in the Wu lab! Outside of the lab, I love to hike, read, and cook for my friends. I look forward to meeting you all and being a part of the Appel community!



**Annette Izumi**  
Research Technician

[ami4003@med.cornell.edu](mailto:ami4003@med.cornell.edu)



# Wu Lab



Welcome  
Jenna!



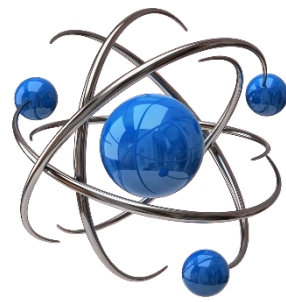
**H**i Appel! My name is Jenna Sayed. I graduated with my A.B. in neuroscience from Princeton University in 2023 and I've since joined Dr. Zhuhao Wu's lab as a lab technician. As an undergrad, I researched hippocampal place cell remapping using two photon imaging in the Tank Lab at the Princeton Neuroscience Institute. In the Wu Lab, I look forward to studying tissue clearing and labeling techniques, as well as imaging. As an aspiring neuroscientist, I believe in a holistic approach to understanding the brain and its maladies, and I hope to further that interest in my time here at Weill Cornell. In my free time, I enjoy drawing, watching films, and studying history.



**Jenna Sayed**  
Research Technician

[jes4040@med.cornell.edu](mailto:jes4040@med.cornell.edu)

# Wu Lab



## Welcome Keerthi!

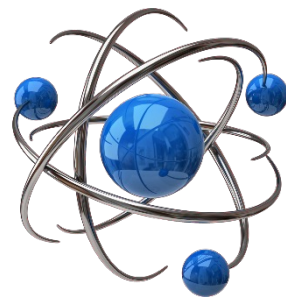
**H**ello! My name is Keerthi Rajamani. I am an Instructor in Dr Zhuhao Wu's Lab. I am thrilled to be a part of the Zhuhao's group and Appel Institute. I received my Ph.D from Ohio State University where I studied how environmental and genetic factors contribute to the etiology of neurodevelopmental disorders. After a brief postdoc at Van Andel Institute in Grand Rapids studying the role of inflammation in neurodegenerative disorders, I came to the Icahn School of Medicine in New York to continue my research in neurodevelopment and neural circuitry of social behavior. I love spending time in nature and try to camp and hike at a National park every year. My latest passion is tending to and expanding my indoor plant collection and building an indoor hydroponic herb garden.



**Keerthi Rajamani, PhD**  
Instructor in Neuroscience

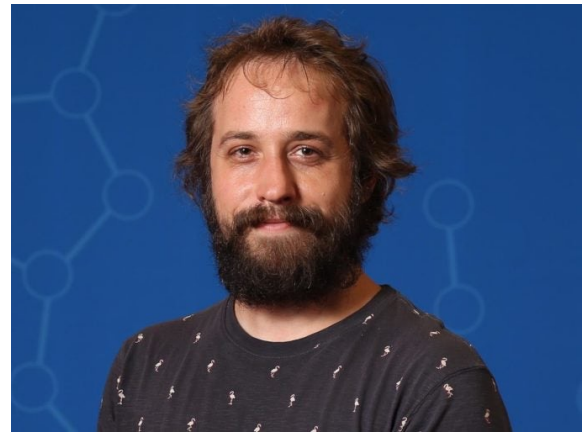
[ket4007@med.cornell.edu](mailto:ket4007@med.cornell.edu)

# Wu Lab



## Welcome Rodrigo!

My background is in psychology and psychopharmacology. I did my PhD in Salamanca, Spain, at the laboratory of Dr. Weruaga where my research focused on understanding the early stages of cerebellar neurodegeneration and the expression of different endocannabinoid receptors as well as the effect of the administration of the endocannabinoid oleoylethanolamide (OEA) on the neurodegenerative process, microtubules dynamic and dendritic morphology development. I later moved to Cold Spring Harbor Laboratory, where I did my postdoc at Dr. Osten laboratory where I worked on whole brain analysis, studying whole brain cell-type anatomical organization in collaboration with the research consortium of the BRAIN Initiative Cell Census Network (BICCN). Here I worked on multiple computational methods used in the consortium, from machine learning-based cell detection to volumetric brain registration to understand whole brain and MOp organization using multiple imaging modalities.

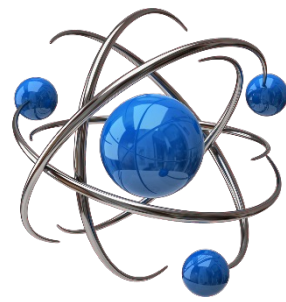


**Rodrigo Munoz Castaneda,  
PhD**

Research Associate

[rom4023@med.cornell.edu](mailto:rom4023@med.cornell.edu)

# Wu Lab



## Welcome Erica!

Hello! My name is Erica Bulzomi. I received a B.A. in Biochemistry and Molecular Biology from Goucher College in Baltimore, Maryland. My undergraduate research was focused on the retinal regeneration of zebrafish under the mentorship of Dr. Jenny Lenkowski. The Lenkowski Lab was focused on understanding the fate and motility of muller glial cells in cases of injury repair by looking at perturbations of the TGF $\beta$  signaling pathway. After graduation, I joined Tony Zador's lab at Cold Spring Harbor as a research technician. There, I focused on performing the technique "BARseq2" to gain an understanding of neural projection patterns and gene expression while maintaining the anatomical integrity of the tissue, at single-cell resolution. I am interested in researching circuitry differences across development in neurotypical and disease-state models. Through my rotation in Dr. Wu's lab, I hope to gain insight into new techniques such as tissue clearing and whole-brain imaging, as well as develop my scientific communication skills. A fun fact about me is that I spent 30 days traveling in Asia this summer.



**Erica Bulzomi**  
Graduate Student  
Rotation

[erb4018@med.cornell.edu](mailto:erb4018@med.cornell.edu)

# Wu Lab



Welcome  
Jie!


My name is Jie Chen, I have been working in research field many years. I graduated from medical school and earned medical degree in China. I was a clinician in infectious disease field for 7 years. I got a visiting scholarship for an Ecology of Germfree animal research from Karolinska Institute Sweden after my residency and a few years attending physician. Since I had done it and moved to USA to continue my research careers. My research service works included protein biochemistry-amino acid sequencing and peptide synthesis, I also joined diabetes research in an insulin receptor working mechanism. Thereafter, I had joined to WCM Department of Urology to do urological research include UUO (unilateral urinary obstruction) and kidney stone, bladder urodynamic study. I have been training residences, research fellow and graduate students. Recently I joined into a cancer research group and setup an orthotopic mouse bladder cancer model. Using this model for mouse bladder cancer treatment with VTP (laser photodynamic therapy). Result is promising. Project has been finished. Since I talked with Dr. Wu, Zhuhao my view is opening. His research work is deeply attracting me to join the group. From early-stage Neurological structure is a very mystery. Mostly like imagination. Nowadays, Neuroscience is amazingly improved I am attracted with all 3D brain structure. I can see the real world. It is amazing. I really love this field wanted to Be Joining the group badly. I have recalled all my images when I was in medical school a few decades ago. My Father was a neuroanatomy professor in my medical school. In his classroom the black board were all showing his drawing draft by two hands neuro-transportation...it is become a memory. It was my dream to be a neurology doctor. I really want to contribute for neuroscience field to make my dream become truth.

I have a passionate and unrestrained personality. I love singing, swimming, chatting and curious to new things in difference fields. I am looking forward to assimilating this amazing research group.



**Dr. Jie Chen**  
Laboratory Supervisor

[jic2002@med.cornell.edu](mailto:jic2002@med.cornell.edu)

A close-up photograph of two microscope lenses resting on a DNA gel. The gel shows multiple lanes of DNA bands in various colors (red, green, blue, yellow, orange). The lenses are positioned over the gel, creating a sense of depth and focus. The background is a dark, textured blue.

**Burré &  
Sharma Labs**

• NEWS

# Burré & Sharma Labs



•Four **new technicians** have started in our labs: **Karlton Gaskin, Eseosa Uwaifo, Jillian Haller, and Luca Black.**



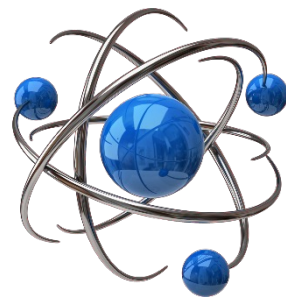
•**Julita Chlebowicz** joined the Burré lab as postdoc.



•**Aditya Rao** has joined the Sharma lab as graduate student



# Burré & Sharma Labs



- Valentine Giret**, high school student at Bronx High School, **will volunteer** over the next year in the lab



- Jack Briano has left our labs to start as medical student at Weill Cornell Medicine.

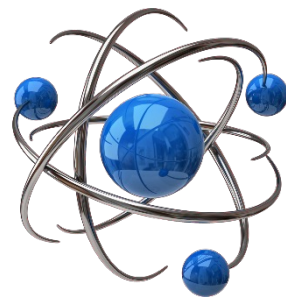
- Saad Ahmad has left our labs to start as medical student at SUNY Upstate Medical University

- Lauren Komer has graduated May 1<sup>st</sup>, 2023. She is starting a position in scientific consulting.

- Aniv Brukner has left the Burré lab to start a position in scientific consulting.



# Burré & Sharma Labs



- Virginia** received a **Travel Award** for the 148th Annual Meeting of the American Neurological Association (September 9-12 in Philadelphia, PA) and an International Congress Travel Grant Award to participate in the International Congress of Parkinson's Disease and Movement Disorders (August 27 – 31 in Copenhagen, Denmark) to present her work on alpha-synuclein in the gut.

- Virginia** just received the **Emerging Scholar Award for the 2023 ANA Annual Meeting.**

- Congratulations Virginia!**

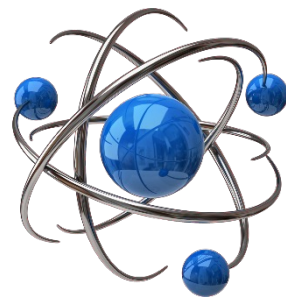


# Burré & Sharma Labs



- **Zyrai Lisse**, sophomore at Fordham University, is spending her summer as BMRI Summer Research Scholar in the lab (last day yesterday).
- **Tenzin Panamserkhang** (Sophomore, Bronx High School of Sciences) is volunteering in the Burré lab over the summer.
- **Cindy Li** (High school student) is **volunteering in the Sharma lab** over the summer.
- **Alan Long** (Junior at Great Neck South High School) is **volunteering in the Sharma lab** over the summer.
- **Leena Attyani** (1<sup>st</sup> year medical student at WCM Qatar) is **volunteering in the Sharma lab** over the summer.
- **Citlalli Thomas Baltazar** is **joining the lab as a rotation student starting October 1<sup>st</sup>**. Citlalli is part of the neuroscience graduate program.

# Burré Lab



Welcome  
Jillian!



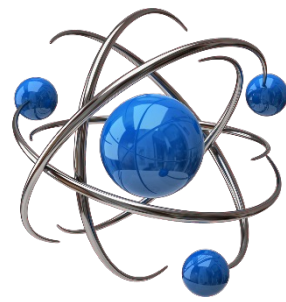
**H**i Appel! My name is Jillian Haller, and I am a research tech in the Burré Lab. I graduated in May 2023 from the University of Scranton where I studied Neuroscience. At the University of Scranton, I focused on the neural circuitry behind anosmia-induced anxiety in zebrafish. In the Burré Lab, I am excited to transition to a new area of research studying alpha-synuclein pathology in Parkinson's Disease. I am hopeful that my time in the Burré lab will equip me with the skills necessary to continue my training in an MD/PhD program. Outside of the lab, I enjoy baking, listening to Taylor Swift, and spending time with my two dogs, Sofie and Ellie!



**Jillian Haller**  
Research Technician

[etc4001@med.cornell.edu](mailto:etc4001@med.cornell.edu)

# Burré Lab



Welcome  
Karlton!

**H**i Appel! My name is Karlton Gaskin, and I am a research technician in the Burré Lab. I graduated from Columbia University in 2023 with a bachelor's in neuroscience & behavior. At Columbia, I worked in the Grueber Lab where I investigated the role of a critical transcription factor in determining dendritic branching levels in drosophila larvae neurons. I am passionate about the neurobiology of psychiatric and neurodegenerative disorders with a special interest in neuronal differentiation and circuit formation. I am currently applying to MD/PhD programs and hope to matriculate this upcoming summer. Outside of the lab, I enjoy riding my bike through central park and going to outdoor concerts.



**Karlton Gaskin**  
Research Technician

[kag4018@med.cornell.edu](mailto:kag4018@med.cornell.edu)

# Burré Lab



Welcome  
Luca!



**Hi** Appel,  
My name is Luca Black. I was born and raised in NYC and graduated from McGill University, majoring in Biology and minoring in Finance. I am a research technician at the Burré Lab and am very interested in research involved in treating neurological diseases. I am specifically intrigued by the mechanisms underlying healthy brain functioning and how mutations in proteins involved in these processes alter functioning. Outside the lab, I enjoy exercising with my friends, swimming, and watching way more TV than I probably should.



**Luca Black**  
Research Technician

[lub4008@med.cornell.edu](mailto:lub4008@med.cornell.edu)

# Burré Lab



Welcome  
Eseosa!



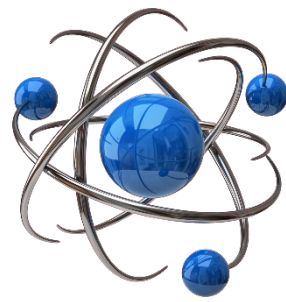
**H**ello everyone! My name is Eseosa Uwaifo and I'm a research technician in the Burré Lab. I graduated from Brown University this past spring where I majored in Neuroscience. While at Brown, I worked at the Fleischmann Lab where I studied olfaction and spatial memory in mouse models. Leaving Brown, I was interested in pursuing further wet lab research experience within the neurosciences, with a focus on research topics with specific clinical applications, such as the study of neurodegenerative diseases and potential treatments. At the Burré Lab, I've been enjoying learning more about behavioral experiments used to better understand Parkinson's and learning various molecular techniques to better diversify my skillset within wet lab research. I'm interested in pursuing either an MD or PhD program in the future so I'm looking forward to spending more time in the lab and getting to meet and speak with other people in the Appel community. During my free time I like to engage in reading, playing video games with my friends, and practicing my Japanese while learning more about Japanese culture. I'm looking forward to meeting more of you in the Appel community!



**Eseosa Uwaifo**  
Research Technician

[esu4002@med.cornell.edu](mailto:esu4002@med.cornell.edu)

# Burré Lab



Welcome  
Julita!



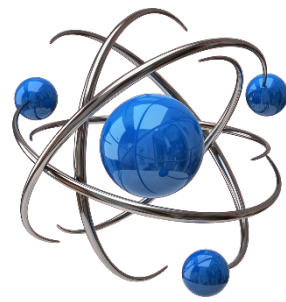
**M**y name is Julita Chlebowicz and I am a postdoc in Jacqueline Burré's lab. Originally from Poland, I completed my bachelor's and master's degrees in biotechnology at Warsaw University of Technology. In 2016 I came to the US for an exchange program at UT Southwestern Medical Center (UTSW) supported by the Fulbright Commission. During my time in Elizabeth Goldsmith's lab, I focused on identifying potential drug candidates for hypertension by targeting WNK kinases. Continuing my academic journey, I applied for grad school and started the PhD program at UTSW in 2017. My research in Marc Diamond's lab centered on the aggregation of alpha-synuclein, the main characteristic of Parkinson's Disease and other synucleinopathies. After earning my doctorate degree, I decided to join Jacqueline Burré's team to investigate the physiological role of alpha synuclein at the synapse. I am excited about the new challenges that it may bring. When I am not at the bench, I enjoy painting and any kind of art. During my time off I try to explore the United States and try new cuisines and dishes. I look forward to meeting you all!



**Julita Chlebowicz, PhD**  
Postdoctoral Associate

[juc4015@med.cornell.edu](mailto:juc4015@med.cornell.edu)

# Sharma Lab



Welcome  
Aditya!



**Hi Appel!** My name is Aditya Rao and I am a first year PhD student in the neuroscience program. I grew up in Long Island, NY, and graduated from Cornell University in 2019 with a major in Biology and Society, with a concentration in neuroscience. During my undergraduate career, I worked with Dr. Ian Ellwood to understand how dopaminergic signals in the prefrontal cortex play a role in explorative or perseverative behavior in mice. Following graduation, I was a research technician in Dr. Richard Axel's lab at Columbia University, where I was working to understand how sensory information is integrated into circuitry involved in navigation. I am currently rotating in the Sharma lab, trying to develop a traumatic brain injury model in mice and to understand how localized head injury can influence mechanisms involved in neurodegeneration. Outside of the lab, I enjoy running and exploring the city for new places to eat!



**Aditya Jang**  
Graduate Student

[adr4002@med.cornell.edu](mailto:adr4002@med.cornell.edu)

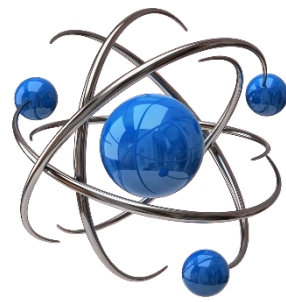


# Gan Lab

• NEWS



# Gan Lab



•Huge **congrats** to to our postdoc **Sadaf Amin for her NIH Aging K99/R00 award!** Her research focuses on the role of antiviral immunity in brain aging and neurodegeneration.



# Gan Lab



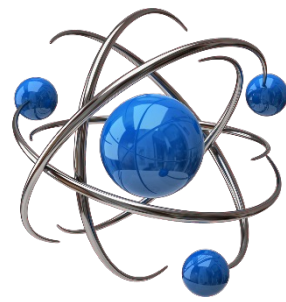
- We hosted three summer students!

- Winston Wong**, a raising senior high schooler in Millburn High School, New Jersey. He remotely worked with Dr Hao Chen and Dr. Wenjie Luo and performed single nuclei RNAseq analysis of human brain samples.

- Kayla Bioh** is a raising senior in University of Massachusetts Amherst. She worked under Dr Wenjie Luo's guidance on the project investigating the function of DAP12 in AD and studied the literature about sex-difference in AD. She received help from Chloe and Man in Gan lab.



# Gan Lab



## •Avi Nessim:

Over the course of 10 weeks, I was privileged to be a full-time research assistant in the Gan Lab. As I return to university and reflect on my experience, I can say with confidence that there are few summers that were as remarkable.

Throughout my time in the Gan Lab, each of my responsibilities was stimulating, gratifying, and something I looked forward to. At the outset, I was tasked with a personal summer project, which addressed an array of abnormal manifestations of Alzheimer's disease. At first, I imaged, quantified, analyzed, and assembled a presentation of the complex interplay between the MEF2C and OLIG2 genes while also observing several staining experiments and perfusions occurring in the lab. By the end of my first month, I was tasked with additional projects such as imaging, quantifying, and analyzing the DAP12 gene in tau pathology and exploring the complement protein C1q through the same methods. I was also assigned many pieces of literature to broaden my knowledge and was able to assemble slideshows, one of which I presented at the final journal club of my summer.

My time in the Gan Lab also came with amazing opportunities outside of research, including numerous panels, presentations, and discussions to attend throughout the summer (including those tailored to undergraduates like me). But most of all, the people in the lab made my experience unique. The bond formed between my mentors and laboratory team remains strong, and I was honored to be surrounded by a brilliant, talented, and kind team.





• Here is our most recent **publication!**

nature neuroscience



Article

<https://doi.org/10.1038/s41593-023-01315-6>

# Tau activation of microglial cGAS–IFN reduces MEF2C-mediated cognitive resilience

Received: 17 May 2022

Accepted: 20 March 2023

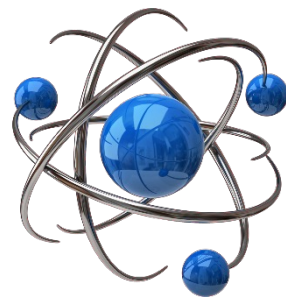
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Check for updates

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Pathological hallmarks of Alzheimer's disease (AD) precede clinical symptoms by years, indicating a period of cognitive resilience before the onset of dementia. Here, we report that activation of cyclic GMP–AMP synthase (cGAS) diminishes cognitive resilience by decreasing the neuronal transcriptional network of myocyte enhancer factor 2c (MEF2C) through type I interferon (IFN-I) signaling. Pathogenic tau activates cGAS and IFN-I responses in microglia, in part mediated by cytosolic leakage of mitochondrial DNA. Genetic ablation of *Cgas* in mice with tauopathy diminished the microglial IFN-I response, preserved synapse integrity and plasticity and protected against cognitive impairment without affecting the pathogenic tau load. cGAS ablation increased, while activation of IFN-I decreased, the neuronal MEF2C expression network linked to cognitive resilience in AD. Pharmacological inhibition of cGAS in mice with tauopathy enhanced the neuronal MEF2C transcriptional network and restored synaptic integrity, plasticity and memory, supporting the therapeutic potential of targeting the cGAS–IFN–MEF2C axis to improve resilience against AD-related pathological insults.

# Gan Lab



Welcome  
Jingjie!

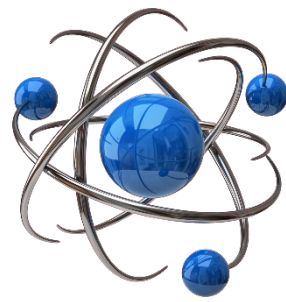
**H**i Appel! My name is Jingjie Zhu, a Research Specialist in Dr. Gan's lab. I received master's degree in biotechnology from Wageningen University, then worked in a non-coding RNA lab in Shanghai to assist research projects on RNAi technology development and miRNA biology. After that I came to New York and worked as Associate Research Scientist in Dr. Feske's lab to study how ion channels and transporters regulate immune cell function and immune responses. In Gan lab, I am eager to work with team members to investigate the mechanisms underlying neurodegenerative disease. It is a pleasure meeting you!



**Jingjie Zhu**  
Research Specialist

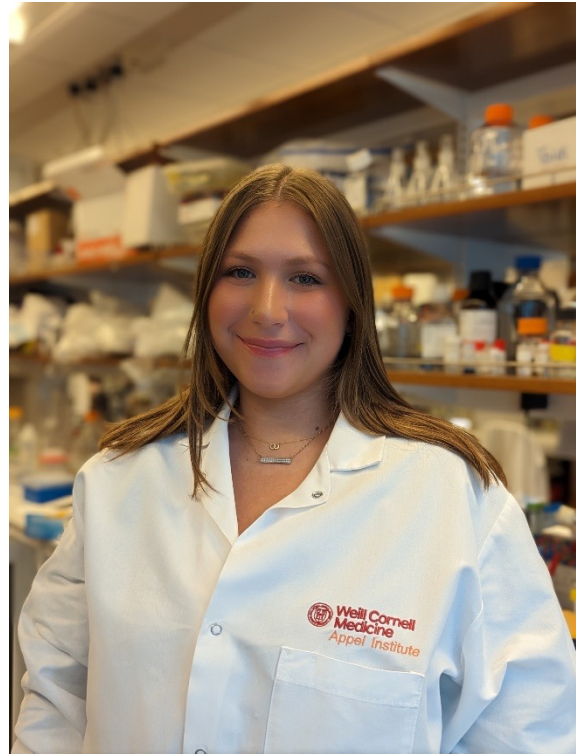
[jzh4018@med.cornell.edu](mailto:jzh4018@med.cornell.edu)

# Gan Lab



Welcome  
Jenna!

I received a BS in Genetics and Genomics and a certificate in Chinese from the University of Wisconsin-Madison in 2023. While at UW, I worked in multiple labs, but ultimately ended up in the Palecek lab doing research focused on modeling the Blood-Brain Barrier using iPSCs. This lab really sparked my interest in neuroscience and inspired me to continue research in this field, leading me to the Gan lab. I love to apply my studies in genetics to other areas of science, and in the future, I am interested in exploring research in the fields of immunology and cancer immunology, virology, and developmental biology. When I am not in the lab, you can find me at a concert, sitting in the park reading a thriller novel, or trying out a new recipe for my friends and family.



**Jenna Cohen**  
Research Technician I

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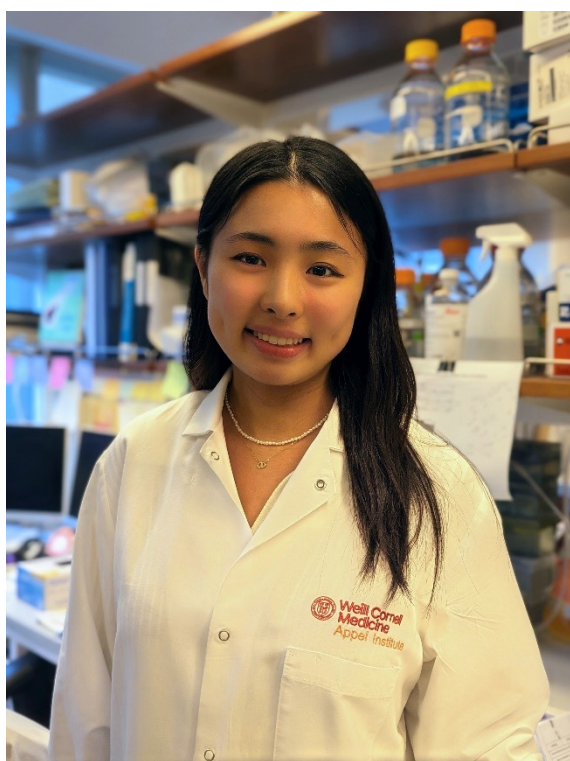
# Gan Lab



Welcome  
Daphne!



Daphne Zhu graduated from Cornell University in 2023 with a Bachelor of Science degree in Human Biology, Health and Society. At Cornell, Daphne developed her interest in human diseases through her experience teaching an anatomy lab course and her time working in Dr. Avery August's immunology lab. In the August lab, she focused on studying the relationship between mitochondria and immune cells, especially in response to infections. Daphne's past research experience increased her passion for learning more about how the human immune system works to combat pathologies, which brought her to the Gan lab where she is excited to apply her knowledge in immunology to studying Alzheimer's disease. Outside of the lab, Daphne loves to explore the city's amazing restaurants and cafes, and take fun fitness classes with friends.

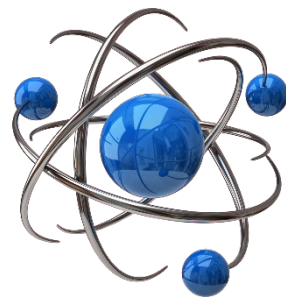


**Daphne Zhu**  
Research Technician I

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# Gan Lab



Welcome  
Ethan!

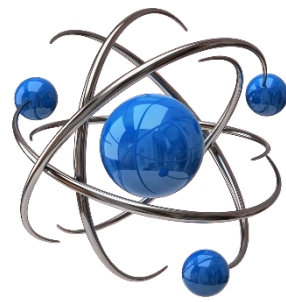
Hello all! My name is Ethan Cordes, and I am a new Laboratory Technician in the Gan lab. I grew up in Colorado and I recently graduated from Washington University in St. Louis with a major in biochemistry. During my time at university, I investigated potential strategies to stabilize the telomerase RNA in Dyskeratosis Congenita patients and developed interests in a diverse set of biomedical topics: including neurodegeneration. As a part of the Gan lab, I am free to pursue this interest by assisting with neuronal cell differentiations and exploring how different proteins affect Tau inclusions. I know the skills and knowledge I accumulate here will assist my efforts to obtain a PhD and work as a research scientist. However, when I am not pursuing my academic interests I focus on skiing, hiking, reading, cooking, and traveling. I love to explore both New York City and the surrounding area and I hope to learn more about the new place I call home!



**Ethan Cordes**  
Research Technician

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# Gan Lab



Welcome  
Wenhui!

Wenhui Qu graduated from China Agriculture University in 2015 with a bachelor's degree in Biological Sciences. With a great interest in neuroscience, she then joined a Master's Biological Science program at the University of Minnesota (UMN) and studied microglia dysfunction in spinocerebellar ataxia type 1 (SCA1) in the lab of Dr. Marija Cvetanovic. Driven by a great interest in uncovering molecular mechanisms of neurological disorders, Wenhui then joined the lab of Dr. Ling Li to pursue a Ph.D. in neuroscience at UMN with a thesis project studying the roles of TREM2 and protein prenylation in the pathogenesis of Alzheimer's disease (AD). After graduation, she worked as a postdoc researcher in the lab of Dr. Gunnar Hargus, characterizing a novel human-mouse chimeric model of AD. In the Gan lab, she will continue studying microglial dysfunction in neurological disorders, employing novel chimeric models. Outside the lab, she enjoys cooking, gaming, playing with her two cats, and exploring the city.



**Wenhui Qu, PhD**  
Postdoctoral Associate

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# Gan Lab



Welcome  
Yuansong!

**H**i Appel! My name is Yuansong Wan and I am thrilled to be joining the Gan lab as a postdoc in April 2023. I grew up in Guangdong, China and graduated from University of Tokyo with a Ph.D. in neuronal cell biology.

During my Ph.D., I worked with Dr. Nobutaka Hirokawa studying the mechanism of one of the kinesin motor proteins, KIF4, mutation-induced susceptibility to seizure via various in vitro and in vivo experiments. I later got fascinated with microglia-neuron crosstalk in AD and joined Dr. Gan Li's lab to explore novel molecular and cellular fundamental mechanisms, especially of tauopathy.

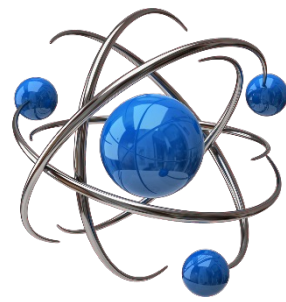
In my free time, I enjoy exploring new recipes and cooking up a storm in the kitchen. I'm also passionate about photography, and enjoy capturing moments and memories through the lens of my camera. I'm excited to be part of the Gan lab team, and look forward to collaborating with and learning from my fellow researchers!



**Yuansong Wan, PhD**  
Postdoctoral Associate

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# Gan Lab



Welcome  
Claire!

**H**i, Appel! My name is Claire Hu. I graduated from Yale University in 2020 where I majored in cognitive science and investigated the neural mechanisms of consciousness in epilepsy at the Blumenfeld Lab. Since then, I've been exploring people-problems in the nonprofit, talent acquisition, and investment banking industries and in training to become a certified life coach. I hope to pursue a graduate degree in psychology and am excited to use AI to improve science communications at the Gan Lab. Outside of work, I practice martial arts and contortion and overanalyze Netflix shows (with friends). Looking forward to getting to know everyone!



**Claire Hu**  
Writer/Editor

[clh4008@med.cornell.edu](mailto:clh4008@med.cornell.edu)

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Warm regards,  
Billy Coronas

[guc9014@med.cornell.edu](mailto:guc9014@med.cornell.edu)