

Molecular Basis of Cognition

The First Annual Scialog Conference
October 13-16, 2022

scialog2022[®]



THE
KAVLI
FOUNDATION

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CIFAR

RESEARCH CORPORATION
for SCIENCE ADVANCEMENT



THE FREDERICK GARDNER
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Objectives

Engage in dialogue with the goal of accelerating high-risk/high-reward research.

Identify and analyze bottlenecks to advancing fundamental science for understanding the molecular basis of cognition and develop approaches for breakthroughs.

Build a creative, better-networked, collegial community that is more likely to produce breakthroughs.

Form teams to write proposals to seed novel projects based on highly innovative ideas that emerge at the conference.

Most importantly, enjoy the discussions about where this field should go and how we can work together to get there.

Process

Brainstorming is welcome; don't be afraid to say what comes to mind.

Consider the possibility of unorthodox or unusual ideas without immediately dismissing them.

Discuss, build upon and constructively criticize each other's ideas – in a spirit of cooperative give and take.

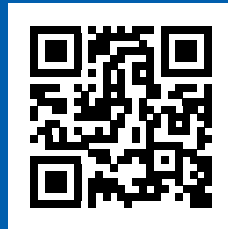
Make comments concise to avoid monopolizing the dialogue.

Diversity, Inclusion and No Harassment

Research Corporation for Science Advancement fosters an environment for listening and considering new ideas from a diverse group, with respect for all participants without regard to gender, race, ethnicity, sexual orientation, age or any other aspect of how we identify ourselves other than as fellow scientists.

RCSA does not tolerate any form of harassment, which could include verbal or physical conduct that has the purpose or effect of substantially interfering with anyone else's participation or performance at this conference, or of creating an intimidating, hostile, or offensive environment; any such harassment may result in dismissal from the conference.

Read RCSA's Code of Conduct



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Scialog: Molecular Basis of Cognition

From the President

Welcome to the inaugural meeting of *Scialog: Molecular Basis of Cognition*, a new initiative cosponsored by Research Corporation, CIFAR (the Canadian Institute for Advanced Research), and the Frederick Gardner Cottrell Foundation, with additional support from The Kavli Foundation and the Walder Foundation. This is the first of three annual Scialog meetings on this theme. We hope the face-to-face exchanges, including informal times, will offer a rich experience in scientific ideation. We hope you find the opportunity to write team proposals “on-the-spot” exciting and rewarding.



The goal of this Scialog is to build a network of researchers across multiple disciplines to develop novel collaborative projects to accelerate deeper understanding of the molecular basis of cognition.

Scialog’s overarching purpose is to advance cutting-edge science of great significance to humanity by catalyzing innovative, basic research leading to fundamental discoveries. Our focus is on scientists in the early years of their independent careers. Through the unique Scialog process, we seek to lay the foundation for an ongoing, highly creative, cross-disciplinary community of scientists that will prove adept at identifying exciting areas for research advances for decades to come.

To that end, under the guidance of Program Directors **Richard Wiener**, **Andrew Feig**, and **Silvia Ronco** from Research Corporation, **Stephanie Albin** from The Kavli Foundation, and **Sandra Laney** from the Walder Foundation, we hope you will be engaged in passionate discussions with colleagues, many of whom you will have met for the first time at Scialog. The process may even push you out of your comfort zone with the goal of stimulating new and better ideas. The result, we expect, will be a meeting unlike others that you attend. We are confident that you will find the next few days to be extremely worthwhile.

This is your opportunity to air that wild idea you have been reluctant to share with others, or to discuss a nagging hunch that does not yet have sufficient supporting data, or to take a leap on a high-impact/high-risk project instead of concentrating all your effort on somewhat more “incremental” studies. This is the time to come up with, and be open to, completely new ideas that may truly change the scientific understanding of how minds work.

We hope this first meeting on this topic yields a crop of outstanding team proposals, which will make our job of determining who receives funding very challenging. I wish you every success in exploring new and compelling ideas over the next few days.

Have a terrific meeting!

Daniel Linzer

President & CEO

Research Corporation for Science Advancement

From the Program Director

Research Corporation's highly interactive Scialog meetings aim to catalyze new collaborations based on blue-sky ideas among a highly select group of exemplary early career U.S. and Canadian scientists. For Scialog Fellows, the emphasis is on dialogue, networking, and building new collaborations to pursue novel, high-risk discovery research.



Cosponsors Research Corporation, CIFAR, and the Frederick Gardner Cottrell Foundation, with additional support from The Kavli Foundation and the Walder Foundation, chose to focus on Molecular Basis of Cognition because we believe this critical area of science requires major breakthroughs in fundamental understanding. Just as firmly, we believe these breakthroughs can best be accelerated by scientists across disciplines, including neurobiology, neuroscience, and related cognitive sciences, working collaboratively on novel, high-risk projects, particularly with multiple approaches and methodologies.

We have outstanding keynote speakers to set the stage for breakout discussions:

Marina Picciotto, Yale, and **Adam Cohen**, Harvard.

Along with **Marina** and **Adam**, we have a team of terrific discussion facilitators:

Roberta Diaz Brinton, Arizona; **Jacqueline Gottlieb**, Columbia; Martin Gruebele, Illinois; **Jacob Hooker**, Harvard; and **Adina Roskies**, Dartmouth.

Program representatives **Stephanie Albin**, The Kavli Foundation, **Sandra Laney**, the Walder Foundation, and **Elizabeth Weiss**, the Science Philanthropy Alliance, are looking forward to interacting with Fellows and Facilitators.

Scialog meetings focus on dialogue and team building with the goal of creating novel strategies and collaborative approaches. An important feature is the opportunity for Scialog Fellows to form teams and write proposals to pursue particularly creative ideas that emerge through the dialogue. We hope this competition is exciting, but regardless of which proposals are funded, the primary purpose is to catalyze a deeper and more meaningful exchange of ideas than ordinarily occurs at scientific conferences. Our intent is for this process to help participants gain new insights and connections that significantly advance fundamental science to enable major advances in understanding the molecular basis of cognition.

We hope each participant finds the Scialog experience of great value. Please do not hesitate to provide feedback on how to make the conference better. My fellow Program Directors, Andrew Feig and Silvia Ronco, the RCSA staff, and I are here to help make the meeting a great experience!

Richard Wiener

Senior Program Director

Research Corporation for Science Advancement

Scialog: Molecular Basis of Cognition

Conference Agenda October 13–16, 2022

Thursday, October 13

2:00 pm	Registration Opens	Sonoran Foyer
2:00 – 5:00 pm	Snacks and Informal Discussions	Sonoran Foyer
5:00 – 6:30 pm	Poster Session and Reception	Javelina/Sonoran Terrace
6:00 – 6:30 pm	Meeting for Discussion Facilitators	Sonoran Ballroom
6:30 – 8:30 pm	Dinner	Sonoran Rooftop
	Welcome Dan Linzer, President, RCSA Stephanie Albin, The Kavli Foundation Sandra Laney, Walder Foundation	
	Conference Overview, Outcomes and Proposal Guidelines Richard Wiener, Senior Program Director, RCSA	
	Introductions/Ice Breakers	
8:30 – 11:00 pm	Starlight Cafe	Sonoran Rooftop

Friday, October 14

7:00 – 8:00 am	Breakfast	Sonoran Rooftop
8:00 – 8:45 am	Keynote Presentation <i>Open Topics in Systems Neuroscience: Finding an Ensemble for Brain-body Communication in Contextual Opiate Tolerance</i> Marina Picciotto, Yale	Sonoran Ballroom
8:45 – 9:00 am	Breakout Session Overview and Instructions	Sonoran Ballroom
9:00– 10:15 am	Breakout Session I	Mesa, Canyon, Desert, Palm, Sonoran Ballroom
10:15 – 10:35 am	Report Out	Sonoran Ballroom
10:35 – 11:15 am	Conference Photo and Morning Break	Stairs near the Main Pool
11:15 – 11:45 am	Mini Breakout Session I (Fellows)	All Spaces
	Facilitator Debrief (Facilitators)	Javelina
11:45 am – 1:00 pm	Lunch	Sonoran Rooftop
1:00 – 1:40 pm	Keynote Presentation <i>Molecular Tools for Mapping Memories</i> Adam Cohen, Harvard	Sonoran Ballroom
1:45 – 3:00 pm	Breakout Session II	Mesa, Canyon, Desert, Palm, Sonoran Ballroom
3:00 – 3:20 pm	Report Out	Sonoran Ballroom
3:20 – 3:50 pm	Mini Breakout Session II (Fellows)	All Spaces
3:50 – 5:15 pm	Afternoon Break	Sonoran Foyer
5:15 – 6:45 pm	Poster Session and Reception	Javelina/Sonoran Terrace
6:45 – 8:00 pm	Dinner	Sonoran Rooftop
8:00 – 11:00 pm	Starlight Cafe	Sonoran Rooftop

Saturday, October 15

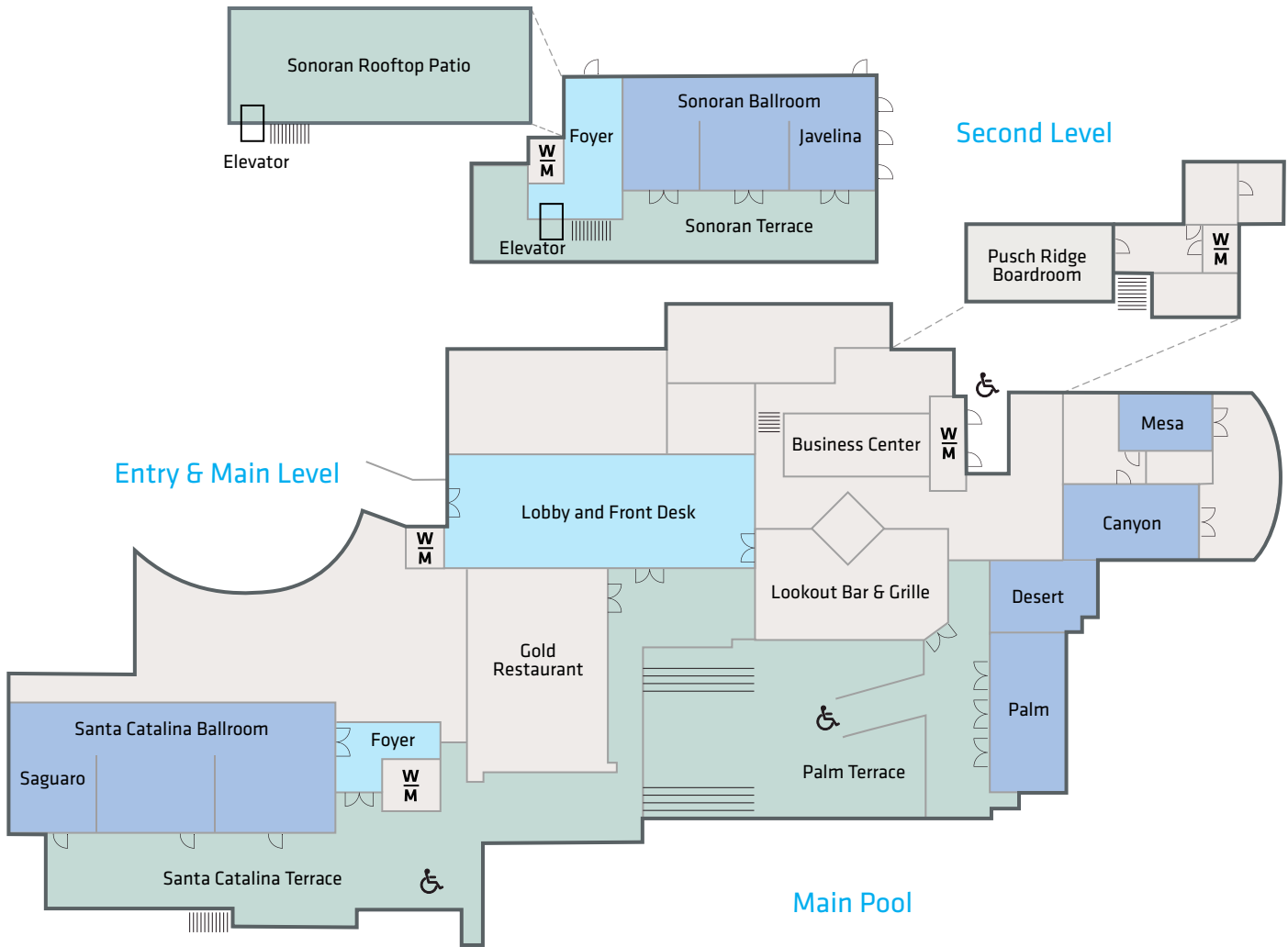
6:45 – 7:30 am	Optional Guided Nature Walk	WL Trails – Meet in Lobby
7:30 – 8:30 am	Breakfast	Sonoran Rooftop
8:30 – 8:45 am	Discussion on Team Formation and Proposal Writing	Santa Catalina Ballroom
8:45 – 9:15 am	Mini Breakout Session III (Fellows)	All spaces (except Sonoran)
9:15 – 9:45 am	Morning Break	Santa Catalina Foyer
9:45 – 11:00 am	Breakout Session III	Mesa, Canyon, Desert, Santa Catalina, Saguaro
11:00 – 11:20 am	Report Out	Santa Catalina Ballroom
11:20 – 11:50 am	Mini Breakout Session IV (Fellows)	All spaces (except Sonoran)
	Facilitator Debrief (Facilitators and Guests)	Santa Catalina Ballroom
11:50 – 1:00 pm	Lunch	Palm Terrace
1:00 – 5:45 pm	Team Formation, Informal Discussions and Proposal Writing	All spaces (except Sonoran)
5:45 – 6:30 pm	Reception	Santa Catalina Terrace
6:30 – 7:30 pm	Dinner	Palm Terrace
7:30 – 11:00 pm	Starlight Cafe	Palm Terrace

Sunday, October 16

6:30 – 7:30 am	Breakfast	Palm Terrace
7:30 – 11:00 am	Presentation of Proposals	Santa Catalina Ballroom
	Assessment Survey and Wrap-up	
11:00 – 12:00 pm	Lunch (available to go)	Santa Catalina Foyer

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Westward Look Resort



Keynote Speakers

Open Topics in Systems Neuroscience: Finding an Ensemble for Brain-body Communication in Contextual Opiate Tolerance

Marina Picciotto*

Yale University



Abstract: Among the many exciting advances in systems neuroscience, one of the emerging questions is how peripheral signaling informs cognition and how the brain, in turn, regulates peripheral functions and homeostasis. One homeostatic function that is well-studied is tolerance to persistent environmental challenges. For example, as users increase opioid intake, they build tolerance against the effects of these drugs. The molecular changes relevant to opioid tolerance are well described. However, even when molecular and cellular adaptations have taken place, taking an opioid drug in a new environment can result in reversal of tolerance. This represents an opportunity to understand the brain circuits that encode contextual predictors of drug-taking and how these circuits participate in associative analgesic tolerance by regulating physiological responses to the drug. In addition, the goal is to determine how to modulate those circuits to alter drug tolerance. We have therefore used a number of techniques to determine how associative opioid tolerance changes activity patterns throughout the brain, identified two target regions that orchestrate associative tolerance in mice, and are approaching the question of what might define the ensembles in those circuits that regulate associative opiate tolerance. Ultimately, we would like to manipulate neuronal activity in the periphery and determine what regulates two-way communication between the body and brain in this process.

**Authors: Rafael Perez, Wenliang Zhou, Cheryl Chen, and Marina Picciotto*

Molecular Tools for Mapping Memories

Adam Cohen

Harvard University



Abstract: What is the shape of a memory? What are the maps of molecular and cytoarchitectural changes by which the brain encodes past events? These questions do not have single answers, but by combining molecular, optical and computational approaches we are developing toolkits to probe these maps. I will describe several approaches to mapping memory-related dynamics, from sub-millisecond maps of voltage in individual dendritic branches to days-long maps of gene expression across the whole brain.

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Proposal Guidelines

Scialog: Molecular Basis of Cognition

1. Awards are intended to provide seed funding for teams of two to three Scialog Fellows formed at this conference for high-risk, high-impact projects.
2. The application package should be submitted as a single PDF file. Pages one and two should describe the project and role of each team member. A third page may be used for references. No budget is necessary.
3. Awards will be in the amount of \$50K direct funding per team member. Grant duration will be one year.
4. No Scialog Fellow may be a member of more than two teams. If a Scialog Fellow is a member of two teams, other members of the teams must be different. No team may submit more than one proposal.
5. Teams may not include members who have previously collaborated with one another. If you are unsure of your status (e.g., prospective team members were part of a large collaboration but did not significantly interact), please check for clarification with an RCSA program director.
6. Teams are encouraged (but not required) to:
 - a. Include members with different research approaches and methods.
 - b. Include members from different disciplines.
7. Proposals must be submitted electronically by **6:30 a.m. PST Sunday, October 16, 2022**. Instructions for submission will be provided at the meeting.
8. Awards are anticipated to start around **January 1, 2023**.

Conference Evaluation Survey

An online conference survey will be available on **Sunday, October 16, 2022**.

Please complete the survey:



Scialog Fellows

Ahmed Abdelfattah ahmed_abdelfattah@brown.edu
Neuroscience, Brown University

Our research interests are to develop novel classes of molecular tools for large-scale functional analysis and manipulation of brain circuits. In the lab, we repurpose proteins found in nature and engineer them to illuminate brain communication.

Travis E. Baker travis.e.baker@rutgers.edu
Center for Molecular and Behavioral Neuroscience,
Rutgers University

I want to understand the neurobiological mechanisms that underlie cognitive control and memory, how to empirically characterize these functions in the brain, and how these functions are disrupted in clinical populations.

André Bastos andre.bastos@vanderbilt.edu
Psychology, Vanderbilt University

How is it that we use attention to focus on important stimuli in our environment? How do we predict and filter out familiar and expected aspects of our environment but quickly become aware of unexpected stimuli?

Gordon Berman gordon.berman@emory.edu
Biology, Emory University

Our lab uses theoretical, computational, and data-driven approaches to gain quantitative insight into entire repertoires of animal behaviors, aiming to make connections to the neurobiology, genetics, and evolutionary histories and that underlie them.

Dan Burnston dburnsto@tulane.edu
Philosophy / Brain Institute, Tulane University

My research focuses on how perceptual and motor systems represent the world, on the nature of decision-making at the neural level, and on the prospects of functional localization/decomposition in complex biological, cognitive, and neural systems.

Alicia Che alicia.che@yale.edu
Psychiatry, Yale University School of Medicine

We aim to understand how early life experiences, such as sensory inputs, social bonding and stress, impact brain circuit assembly and mature function in models of psychiatric illness.

Fei Chen chenf@broadinstitute.org
Stem Cell and Regenerative Biology,
Harvard University

We develop novel molecular, experimental, and computational tools to bring genomics into the context of tissues, especially to enable genomic measurements with spatial and temporal resolution.

Jerry Chen jerry@chen-lab.org
Biology, Boston University

I am interested in how genes shape circuit function and neural computations underlying perception and abstraction. I employ a vertically integrated approach combining large-scale population imaging, anatomy, and molecular profiling in the awake behaving mouse.

Lulu Y. Chen chenly@uci.edu
Anatomy and Neurobiology,
University of California, Irvine

Synaptic and Molecular Mechanisms Underlying Hyperexcitability and Neuropsychiatric Behaviors.

Christine Constantinople constantinople@nyu.edu
Center for Neural Science, New York University
The Constantinople lab studies the neural circuit mechanisms of value-based decision-making in rats.

Meaghan Creed meaghan.creed@wustl.edu
Anesthesiology, Washington University in St. Louis
Our research focuses on synaptic plasticity and neuromodulation within defined neural circuits in the ventral basal ganglia: the cortico-accumbal-pallidal networks involved in reward processing, learning and selection of flexible behavioral strategies.

Laura DeNardo ldenardo@ucla.edu
Physiology, University of California, Los Angeles
Development and function of mPFC threat circuits.

Brian G. Dias bdias@chla.usc.edu
Pediatrics, Children's Hospital Los Angeles
Multi-generational legacies of stress.

Yun Ding yding19@sas.upenn.edu
Biology, University of Pennsylvania
How do genes and nervous systems evolve to encode novel behavioral patterns during evolution? Where are the evolutionary changes distributed at each level? Are there any general principles? We address these questions using Drosophila social behaviors as the model system.

Anita Disney anita.disney@duke.edu
Neurobiology, Duke University
The ways that neuromodulatory molecules of subcortical origin dynamically modify cortical circuits to support adaptive perception, cognition and behavior.

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Scialog Fellows Continued

Andy Dykstra adykstra@miami.edu

Biomedical Engineering, University of Miami

My research seeks to understand the neural mechanisms of auditory perception and cognition across the lifespan. I approach these questions using a variety of complementary methods that together span multiple spatiotemporal scales, with emphasis on circuit-level insight in humans.

Becket Ebitz r.becket.ebitz@umontreal.ca

Neuroscience, Université de Montréal

My lab uses large scale neural population recordings and computational models to understand how cognitive processes evolve over time.

Fernanda Elliott elliottfe@grinnell.edu

Computer Science, Grinnell College

My overall goal is to develop state-of-the-art cognitively inspired computational approaches to understand where meaningful decisions come from and to enhance human-technology partnerships through the development of AI systems that promote inclusion and assist people.

Luis Favela luis.favela@ucf.edu

Philosophy and Cognitive Sciences Program, University of Central Florida

Interdisciplinary work in the cognitive sciences, experimental psychology, and philosophies of mind and science applying complexity science and dynamical systems theory to research on intelligent behavior (esp. cognition) in diverse systems at various spatial and temporal scales.

Antonio Fernandez-Ruiz afr77@cornell.edu

Neurobiology and Behavior, Cornell University

We employ a multi-disciplinary approach to understand the computational, circuit, and cellular mechanisms of memory-guided, flexible behaviors.

Nicola Grissom ngrissom@umn.edu

Psychology, University of Minnesota

My research goal is to demonstrate the value of diverse cognitive approaches, both within and between individuals, in decision and learning strategies.

Howard Gritton hgritton@illinois.edu

Comparative Biosciences, Bioengineering, and the Neuroscience Program, University of Illinois at Urbana Champaign

My lab is motivated to reveal the mechanisms that promote neural network interactions during cognition. This includes several projects designed to identify sources of cognitive control and the role of neuromodulators in organizing activity to elevate sensory cue processing.

Betty Hong ejhong@caltech.edu

Biology and Biological Engineering, California Institute of Technology

I am an experimentalist working on the molecular, cellular, and circuit-level mechanisms governing odor perception and memory in the fruit fly brain. I am particularly interested in how these processes depend on behavioral state and experience.

Kate Hong katehong@andrew.cmu.edu

Biological Sciences, Neuroscience Institute, Carnegie Mellon University

I am interested in understanding how the brain mediates sensory-guided behaviors and decision-making. We aim to establish how cortical and subcortical areas dynamically orchestrate perception during tactile sensation, and how the sensation can recover after cortical injury.

Rainbo Hultman rainbo-hultman@uiowa.edu

Molecular Physiology and Biophysics, University of Iowa

We're studying how electrical brain networks are organized across multiple levels of analysis to inform the development of new therapeutics for complex brain disorders like depression, schizophrenia, and migraine.

Christina K. Kim tinakim@ucdavis.edu

Center for Neuroscience and Department of Neurology, University of California, Davis

Molecular and optical technologies for accessing activated neural circuits.

Matthew Lovett-Barron mlb@ucsd.edu

Neurobiology, University of California, San Diego

I am interested in the collective behavior of schooling fish – how multiple individual nervous systems interact to produce cohesive actions.

Allyson Mackey mackeya@upenn.edu

Psychology, University of Pennsylvania

I am interested in understanding how children's experiences shape the development of their minds and brains, so we can develop new ways to support their learning at school and at home. I focus on how children's experiences influence neuroplasticity, the brain's ability to change.

Scialog Fellows Continued**Sarah Marzen** smarzen@kecksci.claremont.eduPhysics, Claremont Colleges W. M. Keck
Science Department*I am interested in sensory prediction and memory in all incarnations: if and how.***Elizabeth M. McNeill** emcneill@iastate.eduFood Science and Human Nutrition,
Iowa State University*Understanding the interplay between nature and nurture through the study of genetic mechanisms (such as miRNAs) and their environmental regulation ultimately driving cognition.***Tim Mosca** timothy.mosca@jefferson.edu

Neuroscience, Thomas Jefferson University

*My lab studies everything about synapses – how they form, how they mature, how they function, and how their three-dimensional organization influences behavior. We are tool builders, we are geneticists, and we are explorers.***Kieran O'Donnell** kieran.odonnell@yale.eduChild Study Center and Obstetrics Gynecology and
Reproductive Sciences, Yale University*My research seeks to understand how the prenatal environment contributes to individual differences in child development.***Brian Odegaard** bodegaard@ufl.edu

Psychology, University of Florida

*My research employs an interdisciplinary approach to study the neural and computational basis of multisensory integration, perceptual metacognition, and attention, with an emphasis on how these topics inform current theories of visual awareness.***Azahara Oliva** aog35@cornell.edu

Neurobiology and Behavior, Cornell University

*Understanding the brain computations that support memory, from the cellular to the circuit and system neuroscience levels, and how the different mechanisms are modulated by behavior and brain states.***Megan Peters** megan.peters@uci.edu

Cognitive Sciences, University of California, Irvine

*I work on the interface between perception, metacognition, and conscious awareness using neuroimaging, computational modeling, and behavioral techniques in humans.***Lucas Pinto** lucas.pinto@northwestern.edu

Neuroscience, Northwestern University

*I am broadly interested in the neurobiological mechanisms underlying cognition, both at the level of local circuits and their large-scale interactions. Currently, my lab investigates how different cortical circuits interact flexibly to support different types of decision making.***Patrese A. Robinson-Drummer**probinsond@haverford.edu

Psychology, Haverford College

*I am a Developmental Behavioral Neuroscientist interested in how communication between corticolimbic structures contributes to the ontogenetic emergence of learning and memory, and how early life experiences alter the typical trajectory of neurobehavioral development.***Tomás Ryan** tomas.ryan@tcd.ieTrinity College Institute of Neuroscience,
Trinity College Dublin*My research focuses on the neurobiological basis of long-term information storage in the brain. My team investigates the overlap of memory engrams and innate instinctual representations in the rodent brain.***Tiffany M. Schmidt** tiffany.schmidt@northwestern.edu

Neurobiology, Northwestern University

*The Schmidt Lab studies the circuits and mechanisms by which light affects our behavior and physiology.***Benjamin Scott** bbs@bu.eduPsychological and Brain Sciences, Boston University
*Neural mechanisms of decision-making and genetic tool development.***Amitai Shenhav** amitai_shenhav@brown.eduCognitive Linguistic and Psychological Sciences,
Brown University*I study neural circuits at the intersection of decision-making and cognitive control. I am especially interested in how decision-making supports the process of control allocation, and how affective and control systems support the process of decision-making.***Prerana Shrestha** prerana.shrestha@stonybrook.edu

Neurobiology and Behavior, Stony Brook University

*Cell type-specific protein synthesis in innate and learned emotional behaviors.***Monsheel Sodhi** msodhi@luc.eduMolecular Pharmacology and Neuroscience,
Loyola University*Our mission is to understand the molecular basis of psychiatric disorders that include cognitive dysfunction and an increased risk of suicide.*

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Emily Sylwestrak emily@uoregon.edu

Biology, University of Oregon

Our lab investigates how different transcriptionally-defined cell types are functionally organized to drive behavior. Using molecular, anatomical, physiological and behavioral analyses, we focus on role of habenular cell types in healthy reward-guided behavior and in addiction.

Masashi Tabuchi mxt512@case.edu

Neurosciences,

Case Western Reserve University School of Medicine

I am interested in understanding how neural coding regulates persistent internal drive (e.g., sleep) by impacting molecular signaling of synaptic plasticity and how aging influences cellular machinery underlying such coding mechanisms to affect our brain performance.

Evelyn Tang e.tang@rice.edu

Physics and Astronomy, Rice University

I study emergent dynamics in molecular networks and how they support robust biological function, using theoretical and computational tools such as topology, geometry, information theory and statistical physics. Have previously worked on learning, navigation and decision-making.

Sydney Trask smtrask@purdue.edu

Psychological Sciences, Purdue University

I study the neural and molecular mechanisms underlying memory formation, retrieval, and updating. I am primarily focused on understanding memory for context, the environment where learning occurs, and how these processes change with age to produce age-related cognitive decline.

Scott A. Wilke swilke@mednet.ucla.edu

Psychiatry, University of California, Los Angeles

My research aims to determine the prefrontal circuit mechanisms underlying decision making and other motivated behaviors. I am particularly interested in how brain stimulation can modulate these processes to treat neuropsychiatric disorders.

Bob Wilson bob@email.arizona.edu

Psychology, University of Arizona

I study the neural computations underlying our decisions, from simple perceptual decisions about auditory clicks to complex judgements about real-world stimuli such as phishing emails.

Gabriella Wolff ghw23@case.edu

Biology, Case Western Reserve University

In my lab, we investigate how arthropod brains encode salient sensory information into memory. Using comparative neuroanatomical and behavioral assays, we examine how these structures have evolved to adapt to various learning behaviors and host-seeking strategies.

Discussion Facilitators

Roberta Diaz Brinton rbrinton@arizona.edu

Pharmacology, Neuroscience and Neurology,
Center for Innovation in Brain Science,
University of Arizona

My expertise is the female aging brain and Alzheimer's disease, with scientific discoveries that have led to the development of innovative regenerative therapeutics to prevent, delay and treat Alzheimer's disease.

Adam E. Cohen cohen@chemistry.harvard.edu

Chemistry and Chemical Biology, Harvard University

A haiku: Tools for brain science / Watch neurons twinkle like stars / Yikes! Too much data.

Jacqueline Gottlieb jg2141@columbia.edu

Neuroscience, Columbia University

Cognition and decision making; active sensing; information seeking.

Martin Gruebele mgruebel@illinois.edu

Chemistry, Physics, Biophysics, Computational Biology,
College of Medicine, Center for Advanced Studies,
Beckman Institute, University of Illinois at
Urbana-Champaign

Animal behavior; quantum dynamics; biomolecule dynamics from atom to organism.

Jacob Hooker jhooker@mgh.harvard.edu

Radiology, Massachusetts General Hospital and
Harvard Medical School

We dream of, and then work to create, new neurochemical and functional imaging methods that provide insight into human diseases. Our work ranges from neurodevelopment to mental illness to neurodegeneration and often relies on simultaneous MR-PET imaging.

Marina R. Picciotto marina.picciotto@yale.edu

Psychiatry, Neuroscience and Pharmacology,
Yale University

The role of acetylcholine as a neuromodulator in coordinating adaptive and maladaptive behaviors.

Adina L. Roskies Adina.roskies@dartmouth.edu

Philosophy, Dartmouth College

My research lies at the intersection of philosophy and neuroscience. I work on topics such as free will, agency, moral psychology, philosophy of neuroscience, and neuroethics.

Guests

Stephanie Albin salbin@kavlifoundation.org

Life Science, The Kavli Foundation

I support the foundation's program in Open Data in Neuroscience and manage the Neurodata without Borders project – a data standard for neurophysiology. I also seek to provide strategic funding for innovations in neurotechnology through our Observe and Measure the Mind program.

Guy Amichay guy.amichay@northwestern.edu

Northwestern University

Complex systems

Bishakha Mona bmona@sciphil.org

Science Philanthropy Alliance

I have a background in molecular neuroscience and am attending to learn about the research landscape to inform my work with philanthropic funders.

Elizabeth Weiss eweiss@sciphil.org

Science Philanthropy Alliance

Emma Zajdela emmazajdela@u.northwestern.edu

Applied Math, Northwestern University

Canadian Institute for Advanced Research

Rachel Parker rachel.parker@cifar.ca
Senior Director, Research

Frederick Gardner Cottrell Foundation of Research Corporation Technologies, Inc.

Shaun Kirkpatrick skirkpatrick@rctech.com
President

The Kavli Foundation

Stephanie Albin salbin@kavlifoundation.org
Science Program Officer, Life Science

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Executive Assistant to the President

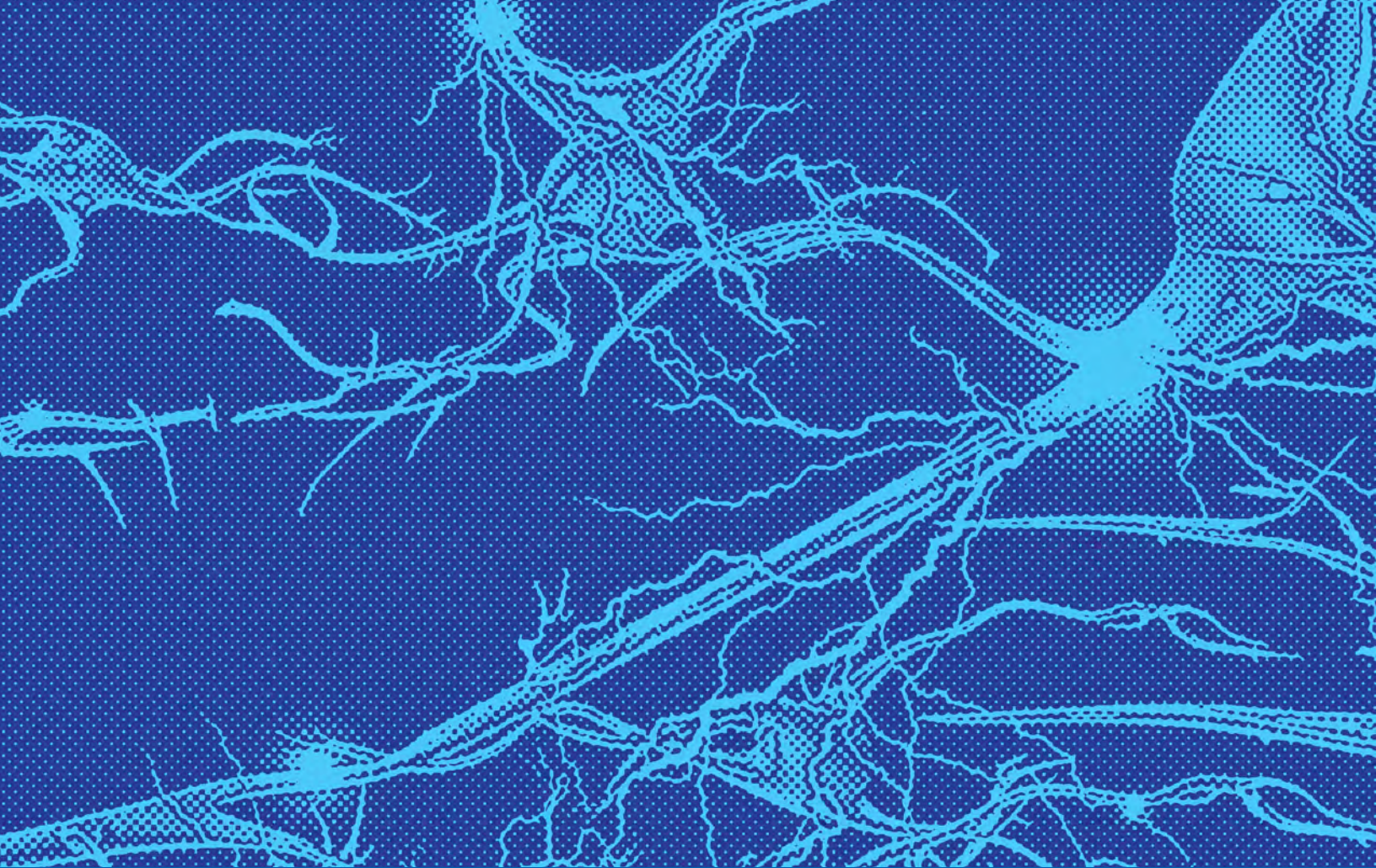
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