

## Probing massive black holes with tidal disruption events

### Miller Fellow Focus: Yuhan Yao

**M**assive Black Holes (MBHs) are ubiquitous at the centers of big galaxies. Most MBHs are quiescent. In ~100 nearby galaxies, high-resolution observations of stellar dynamics have confirmed the presence of central MBHs. A landmark example is the MBH at the center of our Milky Way, Sagittarius A\*, whose mass was measured to be  $4 \times 10^6$  the mass of the Sun ( $M_{\odot}$ ) — a discovery that earned the 2020 Nobel Prize in Physics.



**D**uring certain phases of their evolution, MBH actively accrete materials from the surrounding gas and dust, appearing as Active Galactic Nuclei (AGN). The energy released by accretion regulates star formation and influences galaxy growth. There are two categories regarding the nature of accretion, Standard And Normal Evolution (SANE) and Magnetically Arrested Disk (MAD), where the difference lies in the strength of the poloidal magnetic field. Radio observations, e.g., with the Event Horizon Telescope (the one that makes the “donut” pictures) suggest that most AGN are in the MAD state.

**D**espite their critical role in astrophysics, several fundamental questions about MBHs remain unanswered, starting with their origin. How did the initial seed BHs form in the early universe? Were they formed from the collapse of massive stars (low-mass

seed), or did they originate from direct collapse of gas clouds (high-mass seed)? Additionally, the discovery of BHs more massive than  $10^9 M_{\odot}$  in the first billion years of cosmic history suggests that these early MBHs must have grown rapidly, likely through accretion rates exceeding the canonical Eddington limit, where radiation pressure balances gravity. However, this “super-Eddington” accretion regime is observationally poorly characterized.

**F**urthermore, we don't know how often MBHs are offset from the nuclei of their host galaxies. The elusive population of wandering MBHs can arise from galaxy mergers, gravitational-wave recoil (i.e., the kick that a newly formed black hole receives after the merger of two black holes due to the anisotropic emission of gravitational waves), and gravitational slingshot (i.e., a kick that the least massive MBH receives during

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## Call for Nominations

### Miller Research Fellowship Nominations

Deadline: September 12, 2025

### Miller Research Professorship Applications

Deadline: September 15, 2025

### Visiting Miller Professorship Departmental Nominations

Deadline: September 15, 2025

"The Visiting Miller Professorship allowed me to undertake numerous activities and forge valuable interactions and collaborations, which I will cherish for many years to come. I am grateful to the Miller Institute for the wonderful opportunity to be part of the scholarly community at the University of California, Berkeley."

- Jose Fuentes  
Professor  
Meteorology and  
Atmospheric Science  
Penn State University  
Visiting Miller Professor Fall 2023



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## Call for Visiting Miller Professor Nominations

Online Nomination Deadline: September 15, 2025

### Visiting Miller Research Professorship AY 2026-2027

The Advisory Board of the Miller Institute for Basic Research in Science invites UC Berkeley faculty to submit online departmental nominations for Visiting Miller Research Professorships and the Gabor A. and Judith K. Somorjai Visiting Miller Professorship Award for terms in Fall 2026 or Spring 2027. The purpose of these Visiting Miller Professorships is to bring promising or eminent scientists to the Berkeley campus on a short-term basis for collaborative research interactions. It is required that awardees be in residence at Berkeley during their appointment term. Faculty members or research scientists from around the world are eligible to be considered for sponsorship. Non-US citizens must be eligible for J-1 Scholar visa status in order to be awarded. Faculty members at other UC campuses are eligible to be nominated for this program as well. The Miller Institute, as the sponsor and administrative department, will extend an invitation after advising the department of its selection.

Beginning in May 2025, nominations will be accepted from UC Berkeley faculty for Visiting Professorship candidates for the 2026-2027 academic year. Nominations are judged competitively and are due by September 15, 2025. It is anticipated that between four and ten awards will be made.

For more information, and to access the nomination form online, visit [miller.berkeley.edu/visiting-professorship](https://miller.berkeley.edu/visiting-professorship).

## Call for Miller Professor Applications

Online Application Deadline: September 15, 2025

### Miller Research Professorship AY 2026-2027

The Miller Professorship program invites UCB faculty to submit applications for terms in the 2026-2027 academic year. The objective of the Miller Professorship program is to provide opportunities for faculty to pursue new research directions on the Berkeley campus and to participate in the vibrant Miller Institute interdisciplinary scientific community. Appointees are encouraged to follow promising leads that may develop in the course of their research. In order to accommodate a range of faculty members, the Miller Professorship program offers appointees, in consultation with their departmental chair, the option of taking teaching relief or continuing to teach during their Miller Professorship term. Applicants who plan to continue teaching should provide a statement in their research proposal about how they will balance teaching with their research plans and interactions with the Miller Institute during their term.

The primary evaluation criteria will continue to be research excellence. Proposals to write books are not viewed as competitive. Applicants are also encouraged to describe their interest in participating in the interdisciplinary Miller Institute community and providing mentorship to the Miller Research Fellows.

Beginning in May 2025, applications will be accepted from UC Berkeley faculty for terms in the 2026-2027 academic year. Applications are judged competitively and are due by September 15, 2025. It is anticipated that between four and ten awards will be made.

For more information, and to access the application online, visit [miller.berkeley.edu/professorship](https://miller.berkeley.edu/professorship).

:: **Nomination & Application details:** [miller.berkeley.edu](https://miller.berkeley.edu)

:: **Questions?** [millerinstitute@berkeley.edu](mailto:millerinstitute@berkeley.edu)



## Call for Nominations: Miller Research Fellowship

2026-2029 Term

**Nomination Deadline: September 12, 2025**

The Miller Institute for Basic Research in Science invites department chairs, faculty advisors, professors and research scientists at institutions around the world to submit nominations for Miller Postdoctoral Research Fellowships in the basic sciences. Through this program, the Miller Institute seeks to discover and encourage individuals of outstanding talent, and to provide them with the opportunity to pursue their research on the Berkeley campus. Fellows are selected on the basis of their academic achievement and the promise of their scientific research. Miller Fellows also have a keen curiosity about all science and share an appreciation for an interdisciplinary experience. The Miller Institute is the administrative home department for each Miller Fellow who is hosted by an academic department on the Berkeley campus. All details about the fellowship program are found at: [miller.berkeley.edu/fellowship](https://miller.berkeley.edu/fellowship).

The Miller Institute also welcomes nominations for the Kathryn A. Day Miller Postdoctoral Fellowship award for the 2026-2029 Fellowship cohort. Named in honor of the Institute's retired Chief Administrative Officer Kathy Day, this award is intended for an early career scientist who, in addition to excelling in their pursuit of basic science research, also engages in outreach in support of science.

Miller Research Fellowships are intended for exceptional early-career scientists of great promise who have recently been awarded, or who are about to be awarded, the doctoral degree. Miller Fellows are expected to begin their Fellowship shortly after being awarded their Ph.D. A short period as a postdoctoral fellow elsewhere does not exclude eligibility, but applicants who have already completed more than two years of postdoctoral experience are not eligible for nomination. **A nominee cannot hold a paid or unpaid position on the Berkeley campus at the time of nomination or throughout the competition and award cycle which may last through the end of February 2026.** Nominees who are non-US citizens must show eligibility for obtaining J-1 Scholar visa status for the duration of the Miller Fellowship. Non-US citizens will be required to prove English language proficiency prior to award. The Miller Institute does not support H-1B visa status. Eligible nominees will be invited by email by the Institute to apply for the Fellowship after the nomination has been reviewed. Direct applications and self-nominations are not accepted. All nominations must be submitted using the online nomination system at: [miller.berkeley.edu/fellowship](https://miller.berkeley.edu/fellowship).

Nominators will need the following required information to complete the online nomination process:

- Nominee's complete full and legal name (do not use nicknames)
- Nominee's current institution
- Nominee's complete, current and active E-mail address that will be valid through March 2026, and current mailing address with postal code and telephone number
- Nominee's Ph.D. Institution and (expected) Date of Ph.D. (month & year required)
- Letter of recommendation and judgment of nominee's promise by the nominator (saved in PDF format). Letter must be specific to the Miller Fellowship, have a current date, and be on institutional letterhead. The Executive Committee finds it helpful in the recommendation letter to have the candidate compared with others at a similar stage in their development.

The Institute provides a stipend of \$90,000 with minimum 3% annual increases, and an annual research fund of \$10,000, for total initial package of \$100,000. There is provision for travel to Berkeley for incoming Miller Fellows and their immediate families and a maximum allowance of \$3,000 for moving personal belongings. Benefits, including medical, dental, vision and life insurance, are provided with a modest contribution from the Miller Fellow. All University of California postdocs are represented by the UAW. Fellowships are awarded for three years, generally beginning August 1, 2026 and ending July 31, 2029. Approximately eight to ten Fellowships are awarded each year. Candidates will be notified of the results of the competition starting in mid-December, and a general announcement of the awards will be made in the spring.

We are grateful for your thoughtful participation in this process and the contribution you are making in the careers of distinguished early-career researchers.

:: **Nomination & Application details:** [miller.berkeley.edu](https://miller.berkeley.edu)

:: **Questions?** [millerinstitute@berkeley.edu](mailto:millerinstitute@berkeley.edu)



# Miller Research Fellowship Awardees 2025-2028

The Miller Institute is pleased to introduce the 2025-2028 Miller Research Fellows. Each year, the Miller Research Fellowship program seeks to discover individuals of outstanding talent and to bring young scholars of great promise to the Berkeley campus. The Fellows will be working with Berkeley faculty hosts for a three-year term beginning in the 2025-2026 academic year. A full list of all past and present Miller Fellows is available on our website.

## Announcing the Kathryn A. Day Miller Postdoctoral Fellow!

This year, the Institute named incoming 2025-2028 Fellow **Manish Gupta** as the **Kathryn A. Day Miller Postdoctoral Fellow**! This award was established in 2019 through a major pledge to the Institute by Professor Randy Schekman and Professor Sabeeha Merchant in honor of Kathy's dedicated service to the Institute over a 30-year career as its Chief Administrative Officer. In addition to demonstrating great promise in research, Manish was chosen for his work in outreach and communication in science. We're thrilled to welcome Manish and celebrate Kathy's legacy at the Institute through this special Fellowship award!



**Manish Gupta**  
Kathryn A. Day Award

Ph.D.: University of Chicago  
Undergraduate Institution: Presidency University,  
Kolkata, India  
Berkeley Dept.: CBE  
Faculty Hosts: F. Kranthi K. Mandadapu,  
Karthik Shekhar

I am broadly interested in computational biophysics, machine learning and statistical mechanics. During my PhD, my research focused on the assembly and nuclear entry of the cone-shaped capsid during the HIV-1 replication cycle using multiscale simulations and modeling. As a Miller fellow, I will explore statistical field theory and machine learning approaches to uncover the physical principles governing electromechanical processes in biological systems.

## Ethan Epperly

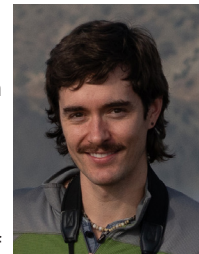
Ph.D.: California Institute of Technology  
Undergraduate Institution: University of California,  
Santa Barbara  
Berkeley Dept.: Mathematics  
Faculty Host: Lin Lin



My research focuses on developing fast computational methods for problems in machine learning, scientific computing, and quantum information science, with a focus on problems with linear algebraic structure. I am interested in both fundamental questions about the best-possible algorithms for computational problems and pragmatic questions about the design of methods that are effective in practice. Some ongoing areas of interest for me are connections between quantum eigensolvers and signal processing, kernel and Gaussian process machine learning, and making randomized algorithms that are as reliable as classical deterministic methods.

## Jeffrey Groh

Ph.D.: University of California, Davis  
Undergraduate Institution: University of British  
Columbia (UBC)  
Berkeley Dept.: MCB / IB / PMB  
Faculty Hosts: Noah Whiteman, Ben Blackman



Flowering plants exhibit a remarkable diversity of reproductive strategies, many of which enhance cross-pollination while balancing trade-offs between male and female function. My research explores the evolutionary origins and genetic mechanisms underlying sex-specific temporal mating strategies across diverse groups of hermaphroditic flowering plants. By integrating comparative genomics, phylogenetics, population genetic models and molecular genetics, I aim to uncover why and how these temporal strategies have evolved and are maintained over time.

### Emeritus Miller Institute Members!

Do you wish to receive the Miller Institute newsletter at your home address? Please email [millerinstitute@berkeley.edu](mailto:millerinstitute@berkeley.edu) with your updated address information so as not to miss a single issue.

## Make a Gift

Private donations are becoming an increasingly significant resource for the Miller Institute. Your personal investment in support of the future of the Miller Institute will be greatly appreciated. Visit our "Make a Gift" page at: [miller.berkeley.edu/gift](http://miller.berkeley.edu/gift)





## Yuxiao Jiang

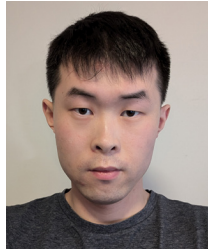
Ph.D.: Princeton University  
Undergraduate Institution: Beijing Normal University  
Berkeley Dept.: Physics  
Faculty Hosts: Feng Wang, Mike Crommie



I have broad interests in the electronic and optical properties of quantum materials. Specifically, my research focuses on discovering and understanding novel quantum phases of matter, such as topological and correlated electronic states. In parallel, I am interested in designing and engineering quantum materials using modern experimental techniques, seeking to enable new quantum functionalities with real-world applications.

## Ce Jin

Ph.D.: MIT  
Undergraduate Institution: Tsinghua University  
Berkeley Dept.: EECS  
Faculty Host: Jelani Nelson



I have a broad interest in theoretical computer science, in particular on fine-grained complexity and algorithm design. I study algorithms and conditional lower bounds for fundamental computational problems in combinatorial optimization, pattern matching, graph theory, and computational geometry. I am also interested in algorithmic applications of algebraic methods and additive combinatorics.

## Daniel Kunin

Ph.D.: Stanford University  
Undergraduate Institution: Brown University  
Berkeley Dept.: Neuroscience  
Faculty Host: Michael DeWeese



Neural network models have revolutionized artificial intelligence, yet the mathematical foundations of their success remain unclear. My research investigates the learning dynamics of neural networks to understand how inductive biases emerge through training and how networks extract meaningful representations from data. Integrating insights from statistics, physics, and neuroscience, I aim to uncover fundamental mathematical principles governing learning in both artificial and natural intelligence.

## Abby Lee

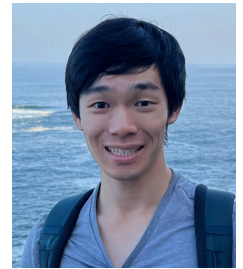
Ph.D.: University of Chicago  
Undergraduate Institution: University of Pennsylvania  
Berkeley Dept.: Astronomy  
Faculty Host: Daniel Weisz



My research interests lie in using near-infrared observations of AGB stars from space-based telescopes like the James Webb Space Telescope (JWST) to address pressing questions about cosmic expansion and galaxy evolution. For example, I am interested in developing new techniques to reconstruct the formation histories of galaxies from their resolved AGB stellar populations. I am also interested in using AGB stars to measure distances to nearby galaxies to determine the local expansion rate of the Universe.

## Allen Liu

Ph.D.: MIT  
Undergraduate Institution: MIT  
Berkeley Dept.: EECS  
Faculty Host: Prasad Raghavendra



My research is in algorithms and machine learning theory, broadly defined. The general theme of my work is to build a rigorous theoretical understanding of what we can learn from data. I focus on designing efficient algorithms with provable guarantees in fundamental settings, and aim to connect these insights to modern problems in machine learning and scientific applications, particularly in quantum information.

## Nathaniel Vilas

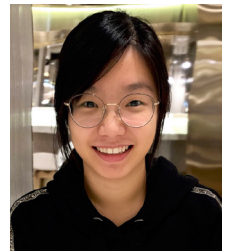
Ph.D.: Harvard University  
Undergraduate Institution: Williams College  
Berkeley Dept.: Physics  
Faculty Host: Dan Stamper-Kurn



My research focuses on quantum control of atoms and molecules at ultracold temperatures. These objects can be effectively isolated from the environment using lasers and ultra-high vacuum, making it possible to control their quantum states with high fidelity. This can be applied to topics including quantum computation, quantum simulation, and precision measurement. I am specifically interested in developing and applying techniques to control increasingly complex objects (e.g. molecules), and to implement increasingly versatile quantum interactions between them (e.g. over long ranges). At Berkeley, I am working to use optical cavities to control photon-mediated, long-range interactions between atoms in optical tweezer arrays.

## Tong Zhang

Ph.D.: MIT  
Undergraduate Institution: University of California, Berkeley  
Berkeley Dept.: MCB  
Faculty Host: Russell Vance



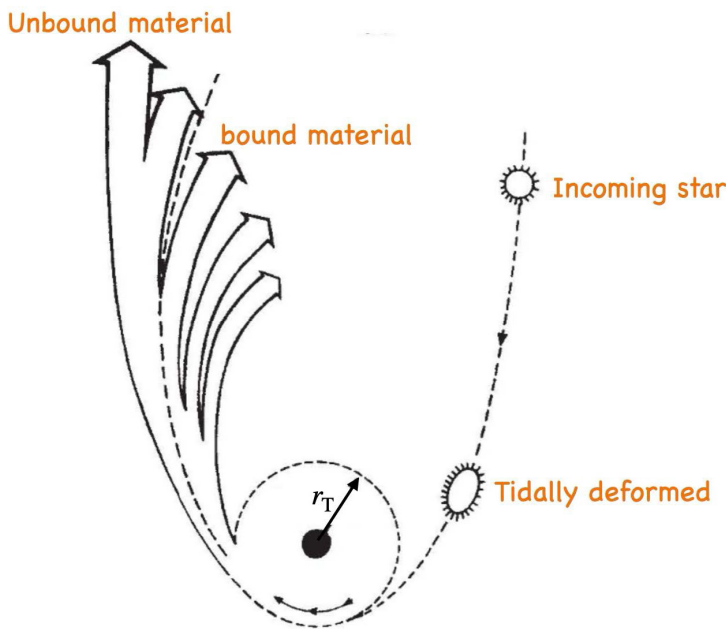
Viruses are ubiquitous, diverse, and fast-evolving pathogens that can infect most living organisms and play an important role in their health and evolution. In response to viruses, host organisms have evolved sophisticated immune responses to restrict viral infection. My research aims to investigate novel mechanisms of immune sensing, with a focus on poxviruses, a diverse family of viruses that infect many host species. This work can provide insights into how poxviruses manipulate their hosts and how novel host immune pathways sense viral infection.

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MBH triple interaction). The latter two effects can displace MBHs from nuclei or even eject them from galaxies entirely.

My research tackles these questions using observations of tidal disruption events (TDEs; see Fig. 1). A TDE occurs when a star passes too close to a MBH and is torn apart by tidal forces. The bound stellar debris falls onto the MBH, powering a luminous transient (i.e., an electromagnetic flare) that lasts for months to years. The expected mass fallback rate during the first ~year often exceeds the Eddington limit, making TDEs a natural laboratory for studying super-Eddington accretion. In the optical band, the luminosity and duration of a TDE encode information about the MBH mass, with more massive black holes producing brighter and longer-lasting transients. I leverage large-scale sky surveys to assemble statistically meaningful samples of TDEs for MBH demographic studies, and conduct targeted, multi-wavelength observations to study MBH accretion physics.



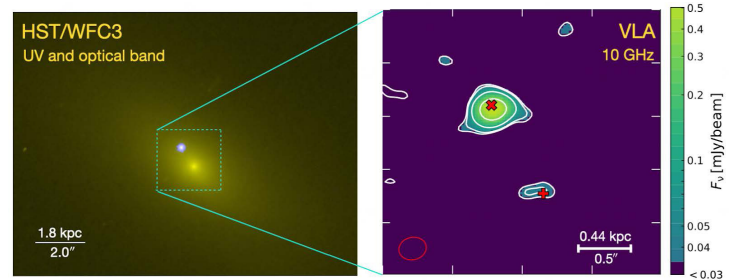
**Fig 1:** A schematic of a solar-type star approaching a MBH on a parabolic orbit with pericenter distance  $r_p$  is distorted and spun up during infall, and then tidally disrupted. About half of the stellar material remains bound to the MBH, falls back to be accreted. Adapted from Rees, M. J. 1988, *Nature*, 333, 523.

During my first year as a Miller Fellow, my research provided evidence that at least some TDEs enter the MAD state. By analyzing X-ray observations of AT2022lri — a TDE I found with the Zwicky Transient Facility (ZTF) optical sky survey — obtained with NASA NICER telescope, I identified spectral features indicative of sub-relativistic outflows. Additionally, I detected rapid, hour-timescale X-ray variability superimposed on a power-law decline — an effect predicted by super-Eddington MAD models but never previously observed. In MADs, regions with stronger magnetic fields create under-densities that erupt outwards, producing sporadic fast X-ray variability. Future studies

of similar systems will be crucial to better understand the role of magnetic fields in super-Eddington accretion and the ubiquity of outflows.

During my PhD, I constructed a flux-limited TDE sample to measure the volumetric rate of TDEs in galaxy centers as a function of MBH mass. This allowed me to infer the fraction of galaxies that host central MBHs down to a galaxy total stellar mass of  $10^9 M_\odot$ . I found that this fraction is still high, which agrees with predictions of heavy seed models.

In my second year as a Miller Fellow, the ZTF TDE science working group, led by Prof. Ryan Chornock at UC Berkeley, identified AT2024tvd as a TDE candidate likely at an off-center location in its host galaxy. Scene modeling of ZTF imaging by my collaborator Charlotte Ward at Princeton University confirmed its off-nuclear location at  $7\sigma$  significance. To establish the off-nuclear location and the TDE nature, I led two proposals to request rapid response observation with the Chandra X-ray Observatory and the Hubble Space Telescope (HST) — two telescopes that offer the best astrometric precision in the X-ray and UV/optical, respectively. These observations definitively confirmed AT2024tvd as the first off-nuclear TDE identified through optical sky surveys. HST imaging measured a  $0.92''$  offset from the apparent center of its host galaxy, corresponding to a projected distance of 0.81 kpc (see Fig. 2, left panel).



**Fig 2:** Left: Hubble Space Telescope images at the location of AT2024tvd, showing that the transient (in white) is offset from the host galaxy nucleus (in yellow). Right: VLA 10 GHz radio image made by collaborator Itai Sfaradi (postdoc at UC Berkeley). Radio emission is detected in both AT2024tvd (marked with a red cross) and the host nucleus (red plus).

We also obtained radio observations with the Very Large Array (VLA) under a large program led by Prof. Kate Alexander (University of Arizona). The detection of the host nucleus in radio (see Fig. 2, right panel) suggests the existence of a  $\sim 10^8 M_\odot$  central MBH, while the TDE properties indicate the offset MBH has a mass of  $\sim 10^6 M_\odot$ . This offset MBH either comes from a minor merger or a gravitational slingshot. Future detailed kinematic studies of the host galaxy (e.g., with the James Webb Space Telescope), may help distinguish the two scenarios.

My work on AT2024tvd demonstrates that TDEs are an incredibly valuable probe of offset MBH systems. Moving

forward, I plan to expand my search for TDEs in exotic MBH environments. I am also excited to leverage future sky surveys, such as the La Silla Schmidt Southern Survey (LS4), and the Legacy Survey of Space and Time (LSST at the Vera C. Rubin Observatory, to probe intermediate-mass black holes ( $M_{\text{BH}} < 10^5 M_{\odot}$ ) and offset BHs. LSST has unprecedented sensitivity and astrometric precision, which can help us detect under-luminous TDEs powered by IMBH and TDEs with small offsets.

**Y**uhan Yao, originally from Beijing, China, is a second-year Miller Fellow in the Department of Astronomy at UC Berkeley. She collaborates with Prof. Wenbin Lu and the TRex (Transient Extragalactic) group, led by Profs. Raffaella Margutti and Ryan Chornock, among others. Yuhan earned her BS from Peking University in 2018 and her PhD from Caltech in 2023, advised by Profs. Shri Kulkarni and Fiona Harrison. Her research focuses on time-domain astronomy and high-energy astrophysics. In her free time, she enjoys baking, watching movies, and spending time with her family.

Contact: yuhanyao@berkeley.edu

## Recent Publications by Miller Members

**Jonathan Wolf** (Miller Fellow 2024-2027) is the author of the paper, "Patterns of deformation in the deepest mantle linked to ancient subduction," shared on *ResearchGate*.

**Calvin Leung** (Miller Fellow 2024-2027) is a co-author of a study of the fast radio bursts published in *Astrophysical Journal Letters*. Calvin is a lead developer of three companion telescopes to the original Canadian Hydrogen Intensity Mapping Experiment (CHIME) radio array.

**Robert Dudley** (Miller Professor 2024-2025) is a co-author of the paper, "Biomechanics and ontogeny of gliding in wingless stick insect nymphs (*Extatosoma tiaratum*)," about the latest research findings on the stick insect aerial performance, published in the *Journal of Experimental Biology*.

**Ioannis Kipouros** (Miller Fellow 2023-2024) is a first author of the paper, "Mechanism of O<sub>2</sub> Activation and Cysteine Oxidation by the Unusual Mononuclear Cu(I) Active Site of the Formylglycine-Generating Enzyme," published in *ACS Publications*.

**Iwnetim Abate** (Miller Fellow 2021-2022) is a co-author of the paper, "Geological ammonia: Stimulated NH<sub>3</sub> production from rocks," published in the journal *Joule*. His team of researchers at MIT has developed an innovative way of making ammonia by using the Earth itself as a geochemical reactor, producing ammonia underground.

## Next Steps



**Ioannis (Yanni) Kipouros**  
Associate Research Scholar  
Chemistry  
Princeton University

## In the News

(see more past & current Miller Institute News: [miller.berkeley.edu/news](https://miller.berkeley.edu/news))

Miller members were among the recipients of the 2025 UCB College of Letters & Science Faculty Awards: **William Boos** (Miller Professor 2021) and **James Olzmann** (Miller Professor 2020-2021) were recognized with the **2025 Beatriz Manz Award**. Boos "*exemplifies excellence across research, teaching, and service.*" Olzmann was praised for his "*contributions to the profession that exceed expectations in both volume of commitments and impact.*" **Chung-Pei Ma** (Miller Professor 2010, 2019-2020, Executive Director 2023-Present) was honored with the **2025 Jessica Blanche Peixotto Award** for "*her extensive and important service to her department, UC Berkeley, and the larger scientific community.*"

The **Maryam Mirzakhani New Frontiers Prize** was awarded to **Ewin Tang** (Miller Fellow 2023-2026) "*for developing classical analogs of quantum algorithms for machine learning and linear algebra, and for advances in quantum machine learning on quantum data.*"

Miller members named **fellows of American Association for the Advancement of Science (AAAS)**: **Chris Greene** (Visiting Miller Professor Spring 2007), **Richard Henderson** (Visiting Miller Professor Spring 1993), **Julius Lucks** (Miller Fellow 2007-2010), **Kam-Biu Luk** (Miller Professor Fall 2001), **Anne Pringle** (Miller Fellow 2001-2004), **Bernard Sadoulet** (Miller Professor Spring 2011), **Jeffrey Townsend** (Miller Fellow 2002-2005) and **Fei Xu** (Miller Professor 2024-2025) for their achievements across disciplines, from research, teaching and technology to administration in academia, industry and government to excellence in communicating to and interpreting science for the public.

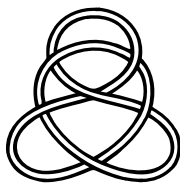
**John Hartwig** (Visiting Miller Professor 2009) was awarded the **Frontiers of Knowledge Award in Basic Sciences from the BBVA Foundation** for his work on metal-based catalysts, which have changed the way drugs are manufactured.

The German National Academy of Sciences Leopoldina honored **Nicola Spaldin** (Miller Professor Spring 2007, Visiting Miller Professor Spring 2025) for her outstanding research in the interdisciplinary field of materials science with the **2024 Carus Medal**.



Miller Fellow Hosts, Executive Committee members and Miller staff enjoyed a Host Appreciation Luncheon at the Women's Faculty Club on 3/14/25. Pictured from left clockwise: Michael Boots, Rasmus Nielsen, Benjamin Safdi, Michael Hutchings, Hilary Jacobsen, Jeff Long, Chung-Pei Ma, Andrew Minor, Alistair Sinclair, Eugene Chiang and Donata Hubert.





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**Miller Institute News - Spring 2025**  
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## Annual Spring Dinner 2025



Miller Professor Fei Xu, Chief Administrative Officer Hilary Jacobsen and guest speaker, Dr. Claire Max, Professor Emerita at UC Santa Cruz and Director Emerita of the UC Observatories



Former Miller Fellows Nick Rodd, Simone Ferraro and Anna Barth, Miller Fellow Boryana Hadzhiyska and guest Zach Lou



Miller Fellow James Santangelo, former Miller Fellow Michael Celentano and Miller Fellow Ian Waudby-Smith



Five Miller Institute Executive Directors attended the Spring Dinner (from L to R): Marla Feller (2017-2023), Chung-Pei Ma (2023-Present), Jonathan Arons (2003-2006), Michael Manga (2010-2012, 2013-2016) and Raymond Jeanloz (1998-2003)

