

From the kitchen to the lab and back: exploring microbial interactions with food

Miller Fellow Focus: Vayu Maini Rekdal

Proper preparation and digestion of food is critical for human health and physiology. However, much of food processing is not done by humans alone, but by microorganisms living inside and outside the human body. Despite their tiny size, microorganisms such as bacteria and fungi are brilliant chemists with incredible metabolic capabilities, and we fully rely on them in many areas of food processing. For example, microorganisms have historically been and remain critical for food preparation in the form of fermented food, which makes up approximately a third of food consumed globally. Microbial involvement does not end in the kitchen – once food has entered our bodies, trillions of microorganisms inhabiting our intestines help us break down food and extract nutrients and vitamins. My research focuses on characterizing interactions between food and microorganisms in these contexts, with the ultimate goal of manipulating microbial processes to benefit human and planetary health.

My hunger for research started early on in my life, in the kitchen of my home in Stockholm, Sweden, where I grew up. My family comes from all around the world. My mother



is Indian from Kenya, and my father is Cuban and Norwegian. With family scattered around the world, cooking and food served as my window into my cultural heritage and identity. Some of my earliest memories in life are from the kitchen by my mother's side, chopping, whisking, measuring, smelling, and tasting my way into a world of discovery and learning.

I originally thought I would be a chef. I moved to the U.S on my own to work in restaurants in New York City at age 18, working in restaurants and teaching cooking classes. But after enrolling at Carleton College in Minnesota, I discovered that my passion for food transcended the kitchen. Cooking connected me not only to culture and to people, but also to the inner workings of the natural world, to

INSIDE THIS EDITION

Miller Fellow Focus	1-3
Next Steps	3
From the Executive Director	4
Recent Publications	4
Call for Applications/Nominations	5, 6
MSF Announcement & Thank You	6
In the News	6
24th Annual Symposium	7
Welcome New Executive Committee & Advisory Board Members	8

Visiting Miller Professorship Departmental Nominations

Deadline: September 6, 2022

Miller Research Fellowship Nominations

Deadline: September 12, 2022

Miller Research Professorship Applications

Deadline: September 16, 2022

See pages 5-6 for more details on all our programs.

"My time as a Miller Visiting Professor gave me the freedom to focus on research exclusively – what a delight! Being immersed in a world class atmospheric science research environment and at the same time hearing and learning from a wide variety of excellent researchers outside my own field of expertise was refreshing in numerous ways."

Astrid Kiendler-Scharr

Institute for Energy and
Climate Research IEK-8,
VMP Spring 2022



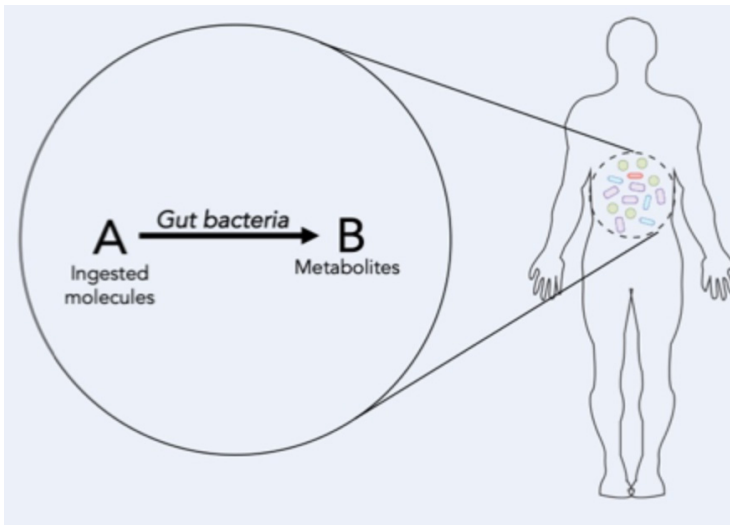


Figure 1. The human gut microbiota is a diverse and complex community of microorganisms inhabiting the human gastrointestinal tract. Among other functions, these microbes modify food and other molecules that we ingest, producing metabolites with altered activity and availability in the human body. My PhD work elucidated the organisms and enzymes involved.

chemistry and biology. In addition to working as a private chef, I spent my college years doing research between molecular gastronomy, food science, and microbiology labs. My early experiences in the kitchen had fostered a deep interest in food and an affinity for experimentation, eventually leading me to science and to studying microbial foods.

My PhD at Harvard University, in the laboratory of Emily Balskus, focused on the human gut microbiota, a complex community of trillions of microorganisms inhabiting the human gastrointestinal tract. These organisms are intricately linked to human health and disease and have emerged as important players in human nutrition and in the human nervous and immune systems. At the start of my PhD, we knew a lot about what microbes lived in the gut, but we knew significantly less about *what* the microbes were doing at a functional level. Using a combination of biochemistry, microbial cultivation, and mouse experiments, my work elucidated specific microbial species and metabolic pathways involved in the breakdown of molecules that humans ingest, including molecules from fruits and vegetables, and pharmaceutical drugs. For example, I discovered microbial species and enzymes that degrade a group of molecules called polyphenols present in commonly consumed foods such as coffee, tea, chocolate, and berries. Follow-up work has revealed that the presence of these organisms and enzymes can directly influence how our diet is processed in our body. Because different people have different microbes living inside them, the

same food can impact people very differently. Two people may eat broccoli, for example, but its health impacts could vary depending on the individual microbial makeup in a person's gut. Thus, when we take a bite of food, we feed not just ourselves, but also the trillions of microbes living inside us.

As a Miller Fellow working with professor Jay Keasling as my main faculty host, I am continuing my exploration of microbial metabolism and food, but this time in the context of the food production. After working at the Basque Culinary Center in San Sebastian learning from chefs and food scientists at the end of my PhD, I became fascinated with fermented foods and the microbial processes that make them possible. This became the inspiration for my Miller Fellowship research and so I decided to return to the kitchen where my research journey started. Whereas my PhD focused on bacteria, I currently work exclusively with a group of organisms called filamentous fungi, which include molds and mushrooms. Though many people associate these organisms with toxicity and poison, filamentous fungi are critical for food production globally. Sake, soy sauce, miso, cheese, tempeh, and several modern “meat alternatives” are just some of the foods that owe their existence to fungi.

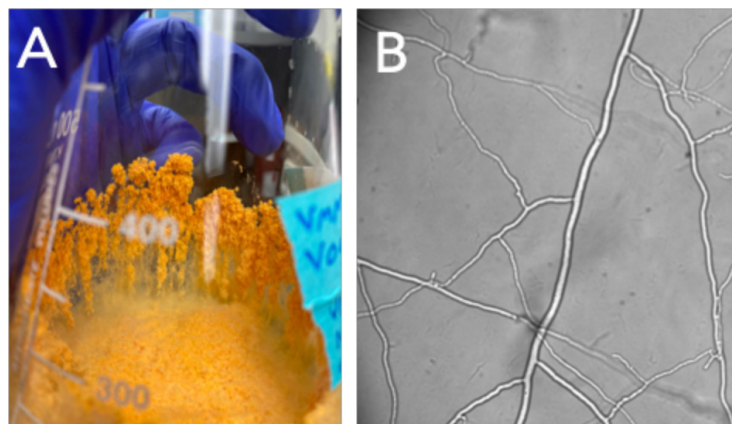


Figure 2. Filamentous fungi growing in the laboratory. A) macroscopic and B) microscopic view. These microorganisms owe their names to their filamentous morphology, as they are composed of individual filaments called hyphae. As a Miller Fellow, I am exploring fundamental processes that could enable us to harness filamentous fungi to make delicious and nutritious foods in the face of sustainability challenges in the food system.

My research explores fundamental processes that could enable us to harness filamentous fungi to make delicious and nutritious foods in the face of sustainability challenges in the food system. One of my projects characterizes interactions between filamentous fungi and food waste (by-products leftover from food production). Together with collaborators from Michelin-star restaurants and local col-



laborators in Indonesia, I am studying a traditional process from Java, Indonesia, where the bland, fibrous cellulose-rich leftovers from soymilk production (called “okara” or “soy pulp”) are converted by fungi into a food called “Oncom”, which is used as a minced meat substitute in the local cuisine. Understanding this process in molecular detail could inform the design of new processes involving food waste and fungi and ensure that more of the food we grow reaches humans. In another project, I am developing methods to use the Berkeley-born CRISPR-Cas9 technology for gene editing in filamentous fungi. Early experiments indicate that gene editing can modify the culinary properties of fungi, including color and flavor, suggesting a possibility for genetically programming fungi for desired applications in food. This could involve breakdown of specific waste substrates or design of new meat alternatives with ideal nutrition and flavor and minimal impact on the planet.

The flexibility of the Miller fellowship allows me to explore research areas that do not fit into traditional microbiology and food science departments or in restaurant kitchens. I appreciate the unique opportunity to move between traditionally separate worlds, to bridge fundamental research with chefs and practitioners working with food on the ground. In some ways, my daily work feels very different from where I started in my mother’s kitchen. In other ways, I sometimes feel I am still smelling and tasting my way into a world of discovery and learning.

Vayu fell in love with cooking at a young age in his cross-cultural home in Stockholm, Sweden. He first moved to the U.S. to work in restaurants, but the flavors, textures, and sensations of the kitchen eventually led him to scientific research. His journey in both cooking and science has brought him to restaurants and laboratories around the world. He recently earned his PhD in biochemistry from Harvard University, where he spent several years in the lab of Emily Balskus studying how bacteria living in the human gut digest food and medicine that humans ingest. As a Miller Fellow, Vayu works with Jay Keasling and other faculty to characterize and engineer fungi to produce sustainable and delicious foods. Vayu collaborates with restaurants and food producers in his research, including the 2-Michelin star restaurants Alchemist in Copenhagen and Blue Hill at Stone Barns in New York. In addition to pushing the boundaries of knowledge in the laboratory, Vayu loves sharing his passion for cooking and science with the public, and runs the organization Young Chefs, which uses cooking to teach science in classrooms all around the world.

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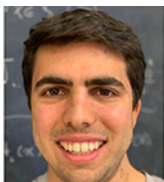
Websites: <http://vayumainirekdal.com>; <http://youngchefsprogram.org>.

Next Steps

The Miller Institute congratulates these Miller Fellows on their next endeavors:



Allison Gaudinier
Postdoc @ Blackman lab
PMB Department
UC Berkeley



Reza Gheissari
Assistant Professor
Mathematics Department
Northwestern University



Anna Ho
Assistant Professor
Astronomy Department
Cornell University



Naomi Latorraca
Postdoc @ Marqusee and Isacoff labs
MCB Department
UC Berkeley



Aavishkar Patel
Physicist
Flatiron Institute
Center for Computational Quantum Physics



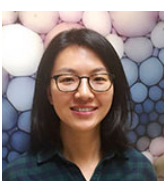
Ekta Patel
Postdoc @ Weisz lab
Astronomy Department
UC Berkeley



Ellen Vitercik
Assistant Professor
EECS Department
Stanford



Danqing Wang
Postdoc @ Wu lab
MSE Department
UC Berkeley



Qiong Zhang
Postdoc @ Dueber lab
Bioengineering Department
UC Berkeley

From the Executive Director



Marla Feller, Miller Institute Executive Director & Professor of Neurobiology

*May your hands always be busy
May your feet always be swift
May you have a strong foundation
When the winds of changes shift*

Forever Young,
- Bob Dylan (1974)

"Forever Young" is one of my favorite Bob Dylan songs; it is sweet song that some say was a sort of blessing that Bob Dylan wrote for his youngest child, and it includes important advice for anyone: to try and live your best life, despite what the world might throw at you. This is also great advice for young scientists starting their own

careers – to keep moving and do the best science you can given the circumstances. And if there is one thing we have all learned over the past few years, "circumstances" that affect our ability to do science – whether they be the personnel in your lab, the finances of your institution, structural racism or the presence of a worldwide pandemic - can change dramatically.

It is with this spirit that the Miller Institute launches the next set of young scientists into the world to start their own independent scientific careers. We say goodbye to nine Miller Fellows this fall who will be populating science and engineering departments and institutions throughout the world while a couple remain at UC Berkeley to continue their research (see Next Steps on p. 3.) There are also transitions in the leadership of the Miller Institute. First, I offer my deepest gratitude to Roland Burgmann from Earth and Planetary Science who has been a colleague during my entire tenure here at the Miller Institute. I also want to offer special thanks to Michael Jordan (Electrical Engineering and Computer Sciences/Statistics), who was one of our Senior Miller Fellows. We are also bidding good-bye to Luis Caffarelli (University of Texas – Austin) who served for 5 years on our external advisory board.

Never fear – the Miller is still in good hands. We welcome Jeffrey Long (Chemistry) to join Yun Song (Math/Statistics/MCB), Chung-Pei Ma (Astronomy/Physics) and myself (MCB/Helen Wills Neuroscience Institute) on the Executive Committee. We also welcome Ken Ribet (Math) to join Susan Marqusee (MCB/Chemistry) as a Senior Miller Fellow. Finally, we welcome Anna Gilbert (who recently moved from University of Michigan to join the Math Department at Yale) to join Feryal Ozel (University of Arizona), Tim

Stearns (Stanford) and Scott Edwards (Harvard) on the Advisory Board. As always, we are grateful for the wisdom they provide to our program. And of course, we are most excited to welcome 10 new Miller Fellows, 9 new Visiting Miller Professors and 3 new Miller Professors this fall.

There are so many great events that happened this year at the Miller Institute: our Fall dinner when speaker Jill Banfield dazzled us with her work on phages, our Spring dinner when Hitoshi Murayama gave us a whirlwind tour of cosmology and a Spring Reception that was attend by nearly 100 members of the Institute community (including a guest appearance by Kathy Day!) The highlight of the year was the Spring Symposium – it finally happened after a 3-year hiatus. A giant shout out to the Miller Fellows, led by Professor Michael Manga, who put together a fantastic scientific program at the beautiful Marconi Center on Tomales Bay. The speakers skewed toward more local talent (to avoid difficulties for travel for out-of-town guests) – including Becca Tarvin, an Assistant Professor in Integrative Biology and a former Miller Fellow who described the amazing ability of animals that evolve resistance to toxins in their environment. Chung-Pei Ma summarized many recent discoveries regarding black holes of all sizes and who gave us a sense why, despite being less than .2% of the mass of the universe, they have an outsized impact on galaxy and star formation. Venkat Guruswami from EECs, Math and the Simons Institute taught us how theoretical computer scientists classify computational complexity of problems into "simple" and "hard". We were all highly entertained by Mathematician Tadashi Tokieda from Stanford who used captivating demonstrations to show how the traditional art of Japanese origami can be used to solve two-dimensional topology problems. We were also most appreciative to be joined by Paul Turner of Yale who described his strategies for selecting phages that can target bacterial pathogens as a means of developing therapies of antibiotic resistant infections. Peko Hosoi from MIT led an incredible discussion regarding how she approached the problem of determining the relative roles of skill and chance in fantasy (and real) sports. Yours truly was honored to pinch hit for a speaker who was unable to attend. I used the opportunity to discuss the role that neural activity plays in wiring up the neural circuits that mediate our visual sense. These talks, plus the poster presentations from the Miller Fellows, led to two days of animated discussions about science that was nothing short of thrilling. And because of great planning by Hilary Jacobsen and staff we had wonderful in-person interactions without creating a super spreader event.

I want to end on the bittersweet note that this is my last letter as Executive Director of the Miller Institute, as my term ends Summer 2023. It has been an incredible honor for me to serve in this role. I do hope to keep my connection with the Miller Institute moving forward.

Recent Publications

Miller members **Joel Moore** (Miller Professor 2011-2012) and **Feng Wang** (Miller Fellow 2005-2008, Miller Professor 2021-2022) are co-authors of a paper "*Imaging gate-tunable Tomonaga-Luttinger liquids in 1H-MoSe2 mirror twin boundaries*" published in Nature Materials.

Aavishkar Patel (Miller Fellow 2019-2022) is a co-author of the paper "*Solvable theory of a strange metal at the breakdown of a heavy Fermi liquid*" published in Phys. Rev. B 105, 235111.

James Olzmann (Miller Professor 2020-2021) is a co-author of a paper "*Ribosome stalling during selenoprotein translation exposes a ferroptosis vulnerability*" published in Nature Chemical Biology.

Adair Borges (Miller Fellow 2020-2022) and **Jillian Banfield** (Miller Professor 2006-2007) are co-authors of "*Widespread stop-codon recoding in bacteriophages may regulate translation of lytic genes*" published in Nature Microbiology.



Call For Nominations: Miller Research Competitions

Miller Research Fellowship 2023-2026

Online Nomination Deadline: September 12, 2022

The Miller Institute for Basic Research in Science invites department chairs, faculty advisors, professors and research scientists at institutions around the world to submit online nominations for Miller Research Fellowships in the basic sciences. 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. The Institute also welcomes nominations for the Kathryn A. Day Postdoctoral Fellowship for outstanding candidates who demonstrate a commitment to outreach in support of science. 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 sponsor and the administrative home department for each Miller Fellow who is hosted by an academic department. All research is performed in the facilities provided by the host UC Berkeley academic department(s), however, remote work may be allowable in accordance with campus policies. A list of current and former Miller Research Fellows is available on our website.

Miller Research Fellowships are intended for exceptional young scientists of great promise who have recently been awarded, or who are about to be awarded, the doctoral degree. Normally, Miller Fellows are expected to begin their Fellowship shortly after being awarded their Ph.D. Applicants who have already completed substantial postdoctoral training are unlikely to be successful except in unusual circumstances. **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.** Nominees who are non-US citizens must be eligible for obtaining J-1 Scholar visa status for the duration of the Miller Fellowship. The Miller Institute does not support H1B visa status. The Fellowship term must commence between July 1 and September 1, 2023. Eligible nominees will be invited by the Institute to apply for the Fellowship.

Direct applications and self-nominations are not accepted. *All nominations must be submitted using the Online Nomination System at: <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, 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. 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.
- + Nominator's current active E-mail address, title, and professional mailing address (include zip code/campus mail code)

The Institute provides a stipend of \$68,000 with annual increases on subsequent anniversary dates and an annual research fund of \$10,000, for total initial compensation of \$78,000. There is provision for travel to Berkeley for 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, 2023 and ending July 31, 2026. 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.

Miller Research Professorship AY 2023 - 2024

Online Application Deadline: September 16, 2022

The Miller Professorship program is pleased to announce the call for applications for terms in AY 2023-2024. 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. Funds will be distributed differently depending upon the choice selected.

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 Miller Institute community and providing mentorship to the Miller Research Fellows.

Applications from UC Berkeley faculty for Miller Research Professorship terms in the 2023-2024 academic year are being accepted online now. Applications are judged competitively and are due by Friday, September 16, 2022. It is anticipated that between five to eight awards will be made. Applications are available on our website:

<https://miller.berkeley.edu/professorship>.

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[Call For Nominations: Visiting Miller Research Professorship]

Call For Nominations: Miller Research Competitions

Visiting Miller Research Professorship AY 2023 - 2024

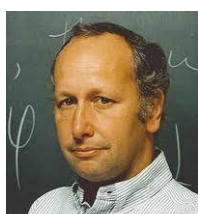
Online Nomination Deadline: September 6, 2022

The Advisory Board of the Miller Institute for Basic Research in Science invites Berkeley faculty to submit online nominations for Visiting Miller Research Professorships and the Gabor A. and Judith K. Somorjai Visiting Miller Professorship Award for terms in Fall 2023 or Spring 2024. 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 are in residence at Berkeley during their appointment term.

Faculty members or research scientists from any place in the world are eligible to be considered for sponsorship. Non-US citizens must be eligible for J-1 Scholar visa status. Faculty members at other UC campuses are eligible to be nominated for this program. The Miller Institute, as the sponsor and administrative department, will extend the invitation to the nominee after advising the nominator of its selection. Professors with appointments at UCB are not eligible. Nominations can be made through our portal on our website: <https://miller.berkeley.edu/visiting-professorship>.

THANK YOU TO OUR OUTGOING EXECUTIVE COMMITTEE AND ADVISORY BOARD MEMBERS

With the new academic year, we are marking changes in our leadership team. Our thanks to outgoing **Advisory Board member Luis Caffarelli** (2017-2022) (R) and outgoing **Executive Committee member Roland Burgmann** (2016-2022) (L) for their wise counsel and leadership at the Institute.



MILLER INSTITUTE ANNOUNCES 2022 MILLER SENIOR FELLOWSHIP

Kenneth Ribet is the Distinguished Professor of Mathematics at UC Berkeley and is a former Miller Professor (Fall 1990). He studied at Brown University and Harvard University, where he received his PhD in 1973. Ribet works in number theory and algebraic geometry, especially on modular forms and modular curves. He was recently President of the American Mathematical Society and now serves on the Council of the US National Academy of Sciences. Having joined the Miller Institute, Ribet said that "mingling with people who are mostly far from my discipline gives me perspective on my own work and suggests the tantalizing possibility that I will one day be able to shed light on a mathematical question that I extract from a Miller research talk." Welcome, Ken!



In the News

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

The Miller Institute's 24th Annual Interdisciplinary Symposium took place on June 3-5, 2022 at the Marconi Conference Center on beautiful Tomales Bay in Marin County, California.

Aavishkar Patel (Miller Fellow 2019-2022) received this year's **Hermann Kümmel Early Achievement Award in Many-Body Physics** "for outstanding contributions to the theory of transport in non-Fermi liquids."

Ehud Altman (Visiting Miller Professor 2012), Ivan Corwin (Visiting Miller Professor 2021) and Jesse Thaler (Miller Fellow 2006-2009) were named **2022 Simons Investigators**.

Barry Mazur (Visiting Miller Professor 1992) was awarded with the **Chern Medal 2022** "for his profound discoveries in topology, arithmetic geometry and number theory, and his leadership and generosity in forming the next generation of Mathematicians."

Feryal Ozel (Visiting Miller Professor 2014, Advisory Board 2017-Present) is part of the **Event Horizon Telescope project**, a collaboration of more than 300 scientists from 13 institutions that operates an ever-growing global network of telescopes to compose one large telescope as big as Earth.

Arun Majumdar (Miller Professor 2003-2004) was named the inaugural dean of **Stanford's new Doerr School of Sustainability**. "This new school is a critical part of Stanford's focus on amplifying our impact in the world."

Kelly (Thi Hoang Duong) Nguyen (Miller Fellow 2016-2019) was named a winner of the **Eppendorf Award for Young European Investigators 2022**.

James Olzmann (Miller Professor 2020-2021) was selected to receive the **2022 Bakar Fellows Spark Award**, which is designed to accelerate faculty-led research and produce tangible, positive societal impact through commercialization.

John Hartwig (Visiting Miller Professor Fall 2009) was awarded the **2022 Emanuel Merck Lectureship** for his outstanding work in transition metal catalysis.

Corrie Moreau (Miller Fellow 2007-2008) was featured in this new book, "Animal Allies: 15 Amazing Women in Wildlife Science" about women in wildlife science.

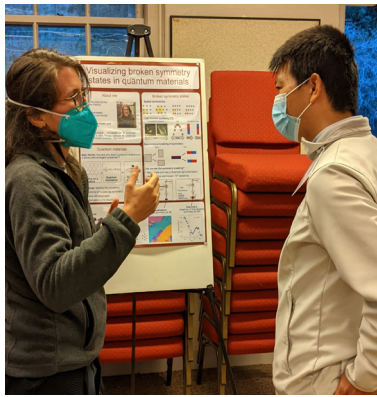
Nicolas Mathevon (Visiting Miller Professor Fall 2008) was elected as a member of the **Accademia Europaea** (Academy of Europe).



24th Annual Interdisciplinary Symposium



Miller Fellow Michael Celentano, Miller Fellow Alumna Anna Ho, Miller Fellow Yao Yang, Miller Fellow Alumnus Aavishkar Patel, Miller Fellows Antoine Koehl & Alfred Zong



Miller Fellow Veronika Sunko & former Miller Professor Feng Wang



Miller Fellow Alumnae Allie Gaudinier, Alison Feder & Symposium Speaker Paul Turner



Miller Fellow Iwnetim Abate, Advisory Board member Tim Stearns, Miller Fellow Alumna Sarah Slotznick, Symposium Chair Michael Manga & Former Executive Director & Miller Senior Fellow Raymond Jeanloz



2022 Symposium Participants



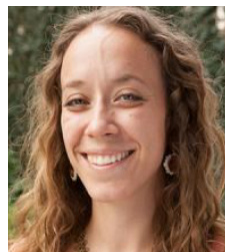
Miller Fellow Alumnus Nikhil Bhatla, Executive Committee member Chung-Pei Ma & Miller Fellow Alfred Zong

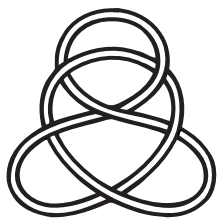


Speakers: Marla Feller, Venkatesan Guruswami, Anette "Peko" Hosoi, Chung-Pei Ma, Becca Tarvin, Tadashi Tokieda & Paul Turner



Miller Fellow Alumna Allie Gaudinier & Symposium Chair Michael Manga





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Miller Institute News - Fall 2022

Please send address corrections to:
miller_adm@berkeley.edu

WELCOME TO OUR NEW EXECUTIVE COMMITTEE AND ADVISORY BOARD MEMBERS

Welcoming new Executive Committee member Professor Jeffrey Long!



Jeffrey Long is a Professor of Chemistry and Chemical & Biomolecular Engineering at UC Berkeley and a Faculty Senior Scientist in the Materials Sciences Division at Lawrence Berkeley Laboratory. His 370 publications have received more than 80,000 citations, and his recent awards include election to the American Academy of Arts and Sciences, the American Chemical Society F. Albert Cotton Award in Synthetic Inorganic Chemistry, and the Royal Society of Chemistry Ludwig Mond Award. He co-founded and directs the company Mosaic Materials, which is developing metal-organic frameworks for low-energy carbon dioxide capture. Jeffrey Long was a Miller Professor in Spring 2011 and again during the 2021-2022 academic year.

Welcoming new Advisory Board member Professor Anna Gilbert!



Aнна Gilbert is the John C. Malone Professor of Mathematics, Professor of Statistics & Data Science at Yale University, having recently left the University of Michigan. She has received several awards, including a Sloan Research Fellowship (2006), an NSF CAREER award (2006), the National Academy of Sciences Award for Initiatives in Research (2008), the Association of Computing Machinery (ACM) Douglas Engelbart Best Paper award (2008), the EURASIP Signal Processing Best Paper award (2010), and the SIAM Ralph E. Kleinman Prize (2013). She is especially interested in randomized algorithms with applications to harmonic analysis, signal and image processing, and massive datasets.

 **We have a new Facebook page!**
<https://www.facebook.com/millerinstituteUCB>

For More Information:
Staff: Emily Birman, Donata Hubert, Hilary Jacobsen & Vrinda Khanna.