

Dear students, faculty, staff, alumni, friends and prospective students,

Welcome to the 2023-2024 academic year! This is my favorite time of the year when we see new faces in the Hearst Memorial Mining Building, faces shining with hope, optimism, confidence, and aspiration!

A lot has changed since our last Newsletter. On July 1, I stepped in as the Chair of the Department of Materials Science and Engineering (MSE) taking the baton from Prof. Lane Martin. I look forward to leading MSE into the next phase of excellence. To support this effort and our mission to provide world-class research and education, Prof. *Mary Scott* and Prof. *Andrew Minor* have agreed to serve as the Associate Chair for Undergraduate Studies and the Associate Chair for Graduate Studies, respectively. We thank Andy and Mary for their commitment!



While we have walked out of the shadow of the pandemic, some of us are still recovering from the losses and challenges in the past. It is, nevertheless, a good time to look forward. Our department has emerged more resilient and stronger from the pandemic, now better positioned to deliver our promise to create knowledge, educate leaders, and serve the society in the field of materials science and engineering. There has never been a better time to join the MSE Department at UC Berkeley, as reflected in our current ranking of [No.2 \(undergraduate\)](#) and [No.2 \(graduate\)](#) in the country by the US News and World Reports.

We start the Fall 2023 semester with 312 students, including 143 undergraduate students who are eager to learn and 169 graduate students who are keen to discover. We currently have 24 innovative faculty members and one lecturer who are leading scholars in the field, as well as a team of seven dedicated staff members who are committed to the mission of the Department. The Department is committed to fostering a safe, caring, respectful and humane environment that supports every member of the community to grow and thrive. We continue to strive to realize a diverse body of students, faculty, and staff. In this academic year, I am excited to see potential growth of our faculty size and student numbers, as well as a few new initiatives aligned with the department needs and campus and college priorities. I apologize for this super-long Newsletter as we just have too much great news to share! I look forward to hearing from you and working with you as we embark on an exciting new school year!

Prof. *Junqiao Wu*, Chair

Our Students and Postdoctoral Scholars Awards and Recognitions

- Blumentkranz Summer Fellowship – Michelle J. Jeong, Ethan Dunsworth
- Corrosion Award – Mackenzie Farnell, Bella Crouch, Benjamin Lam
- Departmental Citation Award – Ayush Gupta
- Elaine Shen Award – Aishwarya Jayadeep, Ayush Gupta, Daniel Hawthorne
- Jing Gui Award – Shu Wang, Tarun Allaparti, Haowen Hu, Peichen Zhong, Yu-Jen Chiu
- MSE Graduate Student Equity and Inclusion Fund – Enze Chen, Mark Ma
- Ross Tucker Award – Maria Folgueras
- Vedensky Award – Nathan Szymanski
- Gareth Thomas Award – Emma Vargo
- Outstanding GSI Award – David Cook, Zehao He
- MRS Silver Awards – KyuJung Jun, Tina Chen, Jimin Kim
- Forbes 30 under 30 – Jiachen Li
- DoE CSGF Fellowship – Luis Rangel DaCosta
- DOD NDSEG fellows – Daniel Evans, Madelyn Payne

- NSF GRFP fellows – Alexandra Griogoropoulos, Enze Chen, David Haik Cook, Tucker Michael Holstun, Jiyeon Kim, Matthew Charles Kuner, Tammy Ng, Jesse C Schimpf, Meghan Hannah Shen, Samuel William Song, Maxwell Christopher Venetos
- Berkeley Fellowship – Derick Tseng, Hongqian Zheng
- Chancellor’s Fellowship – Iliana Rose Meztli Marrujo, Sherrie Qian, Eric Weiner
- Graduate Division Dean’s Award – Yuan Chiang
- Jane Lewis Award – Yu-Jen Chiu, Mackenzie Farnell, Nathan Szymanski, Shilong Wang

Our Faculty

- *Professor Haimei Zheng* was elected **Fellow of the Microscopy Society of America**. Election to MSA Fellow is limited to a small fraction of the Society membership in any given year and represents a major recognition by her peers of her contributions to the field.
- *Professor Kristin Persson* was elected to the 2022 class of the **American Association for Advancement of Science (AAAS)**. The AAAS is one of the most distinguished honors within the scientific community. Professor Kristin Persson also won the **Cyril Stanley Smith Award** from the Minerals, Metals and Materials Society (TMS). This award recognizes an individual who has made outstanding contributions to the science and/or technology of materials structure.
- *Professors Kristin Persson and Phillip Messersmith* were named 2023 **MRS Fellows**. MRS, one of the premier professional societies in materials science, bestows the title of MRS fellow only on those MRS members who are notable for their distinguished research accomplishments and their outstanding contributions to the advancement of materials research world-wide.
- *Professor Gerbrand Ceder* was the recipient of the **Hume-Rothery Award** from TMS. The award recognizes a scientific leader for an exceptional and sustained record of scholarly contributions to the science of alloys.
- *Professor Jie Yao* was selected as a **Heising-Simons Faculty Fellow**. The Heising-Simons Faculty Fellows Program catalyzes scientific discovery by investing in high-risk, high-reward research directions in a diverse set of fields, including astronomy, physics, geology and geophysics, materials sciences, and physical and materials chemistry. The Heising-Simons Faculty Fellows awards are made to two UC Berkeley faculty members each year.
- *Professor Ramamoorthy Ramesh* was elected to the **National Academy of Inventors (NAI)**, the highest professional distinction awarded to academic inventors. The NAI Fellows Program highlights academic inventors who have demonstrated a spirit of innovation in creating or facilitating outstanding inventions that have made a tangible impact on the quality of life, economic development and the welfare of society. Ramesh, professor of materials science and engineering and of physics currently on leave from Berkeley, and vice president for research at Rice University, is known for his pioneering work in the development of complex oxides, quantum materials and multiferroic materials.
- *Professor Ting Xu* was awarded the **Science Breakthrough of the Year in Engineering and Technology** by the Falling Walls Foundation for their work in enzyme-embedded plastics. Prof. Ting Xu also received the 2022 **Faculty Award for Excellence in Postdoctoral Mentoring**. As part of National Postdoc Appreciation Week, Prof. Xu was recognized at PostdocFest - an event organized by the Berkeley Postdoctoral Association (BPA) in collaboration with the campus’s Visiting Scholars and Postdoc Affairs (VSPA) program and the Vice Chancellor for Research - for her efforts in fostering the professional and scientific development of her postdoctoral researchers.
- *Professor Zakaria Al Balushi* was highlighted as a "**rising star of nanoscience**" for his work in devising ways to produce next-generation nanomaterials. Prof. Al Balushi was interviewed for the Nature Index Report on

Nanoscience/nanotechnology, which celebrates the institutions and individuals behind the rapidly growing research in this field which that is enabling the design of new materials and devices.

- *Professor Junqiao Wu* was named the 2023 recipient of the **John Bardeen Award** from the Functional Materials Division of The Minerals, Metals & Materials Society (TMS). This award is named after the two-times Nobel Prize winner John Bardeen, and recognizes an individual who has made outstanding contributions and is a leader in the field of electronic materials. Prof. Wu joins a long list of Berkeley MSE awardees, including Prof. R. Ramesh (2014), Prof. John W. "Bill" Morris (2012), and Prof. Eugene Haller (2010).
- *Professor Ahmad Omar* won the **3M Non-Tenured Faculty Grant**, becoming one of the 10 winners selected from over 100 nominations.
- *Professor Lane Martin* has left Berkeley to pursue a new challenge and opportunity. Effective July 1, 2023, Lane joins Rice University as the Welch Professor of Advanced Materials in its Department of Materials Science and NanoEngineering and the inaugural **Director of the Rice Advanced Materials Institute**.
- *Dr. Matthew Sherburne* was appointed **CEO of Berkeley Educational Alliance for Research in Singapore (BEARS)**. Dr. Sherburne currently splits his time between educating our students in MSE and extending Berkeley Engineering's impact globally. Dr. Sherburne serves as the Director of International Partnerships of the Dado & Maria Banatao Center for Global Learning and Outreach (known as the GLOBE center).
- *Professor Andrew Minor* was appointed the **President of the Microscopy Society of America**, a collaborative community dedicated to fostering research, innovation, advancement, and promotion of microscopy.
- *Professor Junqiao Wu* was elected to the **Chair Line of the Division of Materials Physics at the American Physical Society (APS)**. A division of APS founded in 1984 with currently over 2,700 members worldwide, the Division of Materials Physics applies fundamental condensed matter concepts to complex and multiphase media, including materials of technological interest.



Top row, left to right: Professors Haimei Zheng, Kristin Persson, Phillip Messersmith, Gebrand Ceder, Ahmad Omar. Bottom row, left to right: Professors Andrew Minor, Zakaria Al Balushi, Ting Xu, Lane Martin and Dr. Matthew Sherburne

- *Professor Wladyslaw Walukiewicz* passed away on November 9, 2022. He worked at the Lawrence Berkeley National Laboratory until his retirement in 2020. He served as an Adjunct Professor in the Department of MSE at the University of California, Berkeley, and participated in the Singapore-Berkeley Research Initiative for Sustainable Energy (SINBERISE) from 2017 until his retirement. Professor Walukiewicz was instrumental in developing universal models of defect behavior in semiconductors in order to bridge our fundamental understanding of materials with device performance. Professor Walukiewicz was a highly respected scientist, a thoughtful collaborator, a caring mentor, a devoted family-man, and an avid skier and runner

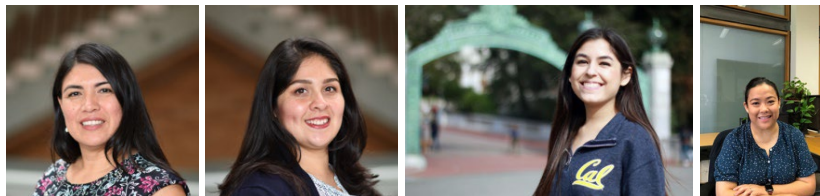


(having run the equivalent of the circumference of the Earth and more in his life). His friends and colleagues had a memorial in April, 2023 to celebrate his life. He will be greatly missed.

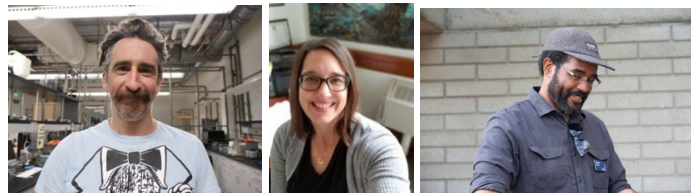
Our Staff

Assuming the pivotal role of leadership is *Catalina Estrada*, who holds the position of Department Manager. She brings to the forefront a wealth of experience and expertise, providing steady guidance to our team. *Ariana Castro* is our experienced Graduate Student Services Advisor who brings her rich expertise to offer valuable insights and skills. Ariana's wealth of knowledge and care guarantees that our graduate students receive the best support possible throughout their academic journey. *Medina Kohzad* is our Undergraduate Student Services Advisor who proactively engages with students to offer them a comprehensive array of information specifically tailored to their academic path. *Karren Capece* joined our team in January 2023 taking on the responsibilities of an External Relations Specialist. She acts as a bridge between our department and the broader external community. We are thankful for our technical staff, *Chad Southard* and *Jennifer Teverbaugh* for their invaluable contributions. Their integral role spans the development, execution, and upkeep of all the laboratory programs we provide. Jennifer accepted our Research and Development Engineer position in February 2023. She left her building manager position for a new challenge supporting our instructional labs. In April 2023, Chad was promoted from his Principal Lab Mechanician appointment to a Research and Development Engineer position taking on all the managerial responsibilities of the Department's instructional lab. Additionally, *Lawrence Michael Pierce* joined our team in April 2023 as our Building Facilities Project Manager. Together, this ensemble of dedicated professionals forms a cohesive unit that drives the success of our MSE department and its various missions.

We note that in June 2023, we bid farewell to *Christopher Kumai*, a valued member of our department for over 20 years, as he embarks on his retirement journey. We express our gratitude and appreciation to Chris for his dedicated service and contributions to the Department.



Left to right: *Catalina Estrada, Ariana Castro, Medina Kohzad, Karren Capece*



Left to right: *Chad Southard, Jennifer Teverbaugh, Lawrence Michael Pierce*

Our alumni

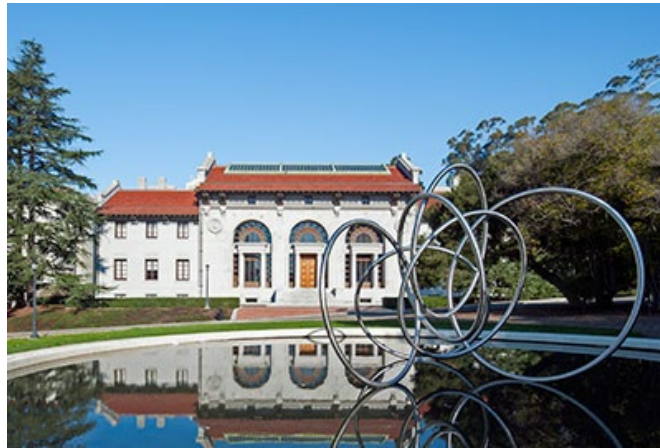
- MSE alumnus *Prof. Ponisseril Somasundaran* (MS, PhD), currently the Lavon Duddleson Krumb Professor in the Department of Earth and Environmental Sciences at Columbia University, was elected to the National Academy of Sciences of India! He will also chair the Hoover Board of Award (representing five engineering organizations: the American Society of Mechanical Engineers, the American Society of Civil Engineers, the American Institute of Chemical Engineers, the American Institute of Mining, Metallurgical and Petroleum Engineers, and the Institute of Electrical and Electronics Engineers). The Hoover board oversees the awarding

of the Hoover Medal, which was established in 1929 and is named in honor of the 31st President of the U.S., Herbert Hoover. This award commemorates the civic and humanitarian achievements of engineers and is conferred upon an engineer whose professional achievements and personal endeavors have advanced the well-being of humankind.

- As of August 2022, MSE alumnus (BS, MS, and PhD) *Dr. Ilan Gur* has become the founding Chief Executive Officer (CEO) of the newly established UK Advanced Research and Invention Agency (ARIA)! With nearly a billion dollars in initial funding, ARIA is designed to play a similar role to that of DARPA in the U.S. - funding high-risk, high-reward research. Dr. Gur moved to ARIA from his role as founder and CEO of Activate Global Inc., an organization that partners with U.S.- based funders and research institutions to support more than 140 entrepreneurial fellows and catalyze more than 100 science-based startups that have collectively raised nearly \$1 billion and created over 700 jobs.
- *Dr. Christopher DelRe* (PhD) won the Henkel Award for Outstanding Graduate Research in Polymer Science & Engineering! The award was established to recognize a PhD graduate student or recent graduate who has completed an outstanding PhD thesis in research at a university in the US or Canada in the field of polymer science and engineering.
- Alumnus *Dr. Louis Kang* (MSE'15) recently joined as Network Leader at Village Global, a VC fund backed by some of the world's most successful entrepreneurs, including Jeff Bezos, Bill Gates, Mark Zuckerberg, and Reid Hoffman! Since graduating from Berkeley, Louis received his PhD in Applied Physics from Harvard, founded three companies, and has also started a climate change mitigation focused VC fund AccelR8 based in Boston.
- Our graduating doctoral student *Dr. Suraj Cheema* (PhD'23) has won the 2023 Richard L. Greene Dissertation Award in Experimental Condensed Matter or Materials Physics from the American Physical Society! He was also named a 2022 DARPA Riser, and will join MIT as an Assistant Professor in the Department of Materials Science and Engineering!
- Imprint Energy, co-founded by alumna *Dr. Christine Ho* (PhD'10), has been acquired by CCL Industries - a multi-billion dollar global leader in manufacturing specialty labels and packaging at scale! Imprint Energy manufactures ultrathin, flexible, printed batteries for IoT devices, sensors, and wearables. Dr. Ho graduated from the MSE department in 2010 from Prof. Jim Evans' group and developed her PhD research into a battery product with a large group of customers.
- Forty (40) years after her graduation from the MSE Department, *Ms. Verna Manty Rodriguez* (MSE'82) has returned to the Hearst Memorial Mining Building as the Executive Director of the Master of Translational Medicine (MTM) program in the Bioengineering Department. Her connection with MSE started in 1979 when she worked in Prof. Morris' group as an undergraduate student. After many years in the medical device industry where she applied her MSE knowledge and degree, she is starting her new job in the Hearst Mining Building whereas Prof. Morris is offering his last semester of teaching.
- *Fox Janyaprayot*, after a Bachelor's degree in MSE, has taken a journey that is as diverse as it is impressive! Golden Glory with Team USA: Fox is a pro inline hockey player for Team USA, securing a gold medal at the South American Roller Sports Games sanctioned by the US Olympic and Paralympic Committee; Beats and Bass at Lightning in a Bottle: Fox is a Bass Producer and DJ, captivating festival-goers at DoLab's Lightning in a Bottle and EDM events nationwide; Tech Innovator for the US Department of Defense: Fox developed groundbreaking government software that revolutionizes processes for Federal Contracting at Bidscale. And that's not all: Fox is also the founder and CEO of Free Black Therapy Inc., a nonprofit providing free mental healthcare to underserved communities. Her journey embodies versatility, determination, and a compassionate heart, promising even more remarkable accomplishments in the future!
- Alumna *Amy Wat*, currently a staff scientist at the Lawrence Livermore National Laboratory and studying ultra-high temperature ceramics and using biological materials to heal concrete infrastructure, is recently featured on the cover of the JOM magazine! She serves on the DEI committee in the Minerals, Metals and Materials Society

(TMS). She chaired the Best Practices and Policy Working Group to improve accessibility at TMS events, and she is the secretary of the TMS Mechanical Behavior of Materials Committee.

- *Dr. Raj Kumar* (PhD'19) will be joining the Northwestern University Materials Science and Engineering Department as an Assistant Professor of Instruction! Dr. Kumar's research advances efforts in materials science and engineering education, with a focus on teaching effective scientific communication and designing inclusive undergraduate research experiences.
- The Department of Energy has awarded Veritel Energy, founded by MSE alumnus *Anthony Keslinke* (MS'90), a Phase 1 Small Business Innovation Research grant to develop and study the decarbonization impact of incorporating renewable energy systems in complex multimetered environments. These systems are often concentrated in marginalized communities where apartment residents are not able to access the economic, environmental, and social benefits that renewable energy creates. Veritel Energy also earned a coveted spot in the DOE's 2023 IMPEL program at the Lawrence Berkeley Laboratory which promotes business development for innovative new ventures.
- *Dr. Caleb Boyd* (MSE'15), co-founder of Molten Industries - a startup that produces hydrogen to decarbonize heavy industry - was named to the 2023 Forbes 30 under 30 list under Energy, as well as a 2022 Breakthrough Energy Fellow! Molten Industries raised venture capital funding from investors including Union Square Ventures and Fifty Years, featured in the Wall Street Journal, and was awarded an ARPA-E grant to produce clean fuels with their technology and a DOE grant alongside U.S. Steel to produce clean steel using their hydrogen.



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