

CMRR Newsletter

News from the Center for Memory and Recording Research at UC San Diego

Issue 1 · September 2026 · Quarterly newsletter



The Center for Memory and Recording Research at UC San Diego.

DIRECTOR'S WELCOME

A new chapter begins

Welcome to the first issue of CMRR Newsletter. I became Director on July 1, and this summer has brought much to share: an international conference on our campus, new Endowed Chairs and Faculty Fellows, and opportunities to strengthen our connections with industry and alumni. Each quarter, we will bring you research highlights, faculty and student stories, events, and ways to engage with the Center.

The AI era runs on memory. Advances in computing depend on how efficiently we store, retrieve, and process information, creating new challenges for recording technologies, memory devices, and materials. Since 1983, CMRR has brought researchers and industry together to address these challenges while training the scientists and engineers who help move the field forward.

I look forward to building on that history with our faculty, students, staff, alumni, and partners. Thank you for being part of the CMRR community.

— Vitaliy Lomakin, Director of CMRR

TMRC 2026 brings the field to San Diego



TMRC 2026 participants gather at UC San Diego, August 3, 2026.

On August 2–5, CMRR hosted the 37th Magnetic Recording Conference at UC San Diego. More than 200 participants from industry, academia, and government gathered for 45 invited talks across six sessions. The program connected magnetic recording and solid-state magnetic memory with storage architectures for artificial intelligence, spanning advanced materials, heat-assisted magnetic recording, MRAM, neuromorphic computing, and recording channels.

The conference was chaired by Niranjana Natekar of Western Digital with local Chairs Vitaliy Lomakin and Eric Fullerton, supported by program leaders and an international organizing committee. It also offered an opportunity to celebrate more than four decades of CMRR. Organized with colleagues at Western Digital and Seagate, the celebration included a film tracing the Center's history and contributions to the field.

Thank you to the organizers, speakers, participants, and partners who made the meeting possible.

Explore TMRC 2026 → tmrc2026.ucsd.edu

New Endowed Chairs and Faculty Fellows



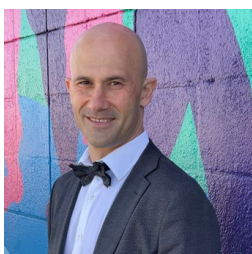
Eric Fullerton
Endowed Chair



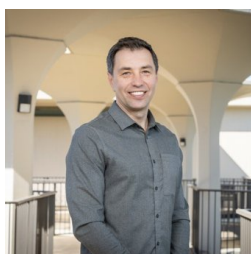
Paul Siegel
Endowed Chair



Ivan Schuller
Endowed Chair



Vitaliy Lomakin
Director and Endowed Chair



Oleg Shpyrko
Endowed Chair



Massimiliano Di Ventra
Endowed Chair



Prabhakar Bandaru
Endowed Chair



Abdoulaye Ndao
Faculty Fellow



Oscar Vazquez Mena
Faculty Fellow

Four new CMRR Endowed Chairs took effect July 1, 2026: Oleg Shpyrko and Massimiliano Di Ventra in Physics, Prabhakar Bandaru in Mechanical and Aerospace Engineering, and Vitaliy Lomakin in Electrical and Computer Engineering. CMRR also welcomes two new Faculty Fellows: Abdoulaye Ndao in Electrical and Computer Engineering and Oscar Vazquez Mena in Nanoengineering. They join continuing Endowed Chairs Eric Fullerton, Paul Siegel, and Ivan Schuller.

Their work connects fundamental materials science with memory and recording technologies, material research, coding and signal processing, nanoscale imaging, computational modeling, and new approaches to computing. Together with CMRR's shared facilities, these complementary strengths create opportunities for collaboration across disciplines and with industry.

Meet the people behind this work in CMRR's ongoing Meet the Faculty series on LinkedIn.

Follow CMRR on LinkedIn → [linkedin.com/company/cmrr-ucsd](https://www.linkedin.com/company/cmrr-ucsd)

About the new Director



Vitaliy Lomakin is a Professor of Electrical and Computer Engineering and has been on the UC San Diego faculty since 2005. He leads CEMM Lab, the Computational Electromagnetics & Multiphysics Lab (cemm.ucsd.edu). His group develops fast computational methods and GPU-accelerated simulators for magnetization dynamics and electromagnetics, with applications in magnetic recording, MRAM, magnetic and photonic materials, and spintronic devices.

His connection to CMRR began in 2006 with an invitation from then-Director Paul Siegel to speak at the Center. Early collaboration with H. Neal Bertram helped shape his group's work in micromagnetics. Lomakin served as CMRR's Associate Director before his appointment as Director and as Local Co-Chair of TMRC 2026. He also serves as Chair of the IEEE Magnetics Society San Diego Chapter.

Continuing the legacy of the Stephen O. Rice Chair

The Stephen O. Rice Chair honors the Bell Laboratories researcher whose work on noise and random signals helped establish the foundations of modern communication theory. Dr. Rice continued his research at UC San Diego after retiring from Bell Labs.

From 1984 until his death in 2011, the chair was held by Prof. Jack Keil Wolf, a pioneer in information theory whose contributions helped bring modern coding and signal detection into data storage. Prof. Wolf was a recipient of the Claude E. Shannon Award and a member of both the National Academy of Engineering and the National Academy of Sciences. His influence continues through his research and the students he trained.

The appointment of Prof. Lomakin renews a chair with a distinguished history at CMRR.

Thank you to Eric Fullerton



This summer, Prof. Eric Fullerton concluded fifteen years as CMRR's Director. Under his leadership, CMRR broadened from magnetic recording into the wider landscape of memory and materials research, sustained its industry partnerships, and strengthened its role as a home for the field's community. We thank him for his leadership and service, and we look forward to his continued contributions as an Endowed Chair. [Read more about Prof. Fullerton](#)

We also remember Leo, Eric's dog and CMRR's unofficial greeter for the past ten years, who passed away this September. A familiar presence around the Center, Leo was part of daily life for many in our community. We remember him with affection.

This fall at CMRR

CMRR's Endowed Chairs and Faculty Fellows will meet in October to discuss the Center's next directions. On the evening of November 19, the first day of the CMRR Research Review, we will hold a special celebration of the new Endowed Chairs and Faculty Fellows, together with our faculty, students, sponsors, alumni, and campus leadership.

We are preparing an in-person CMRR Research Review to be held on November 19–20, offering sponsors and partners an opportunity to learn about the Center's current work and discuss future collaborations. Organizations interested in attending are invited to contact the Director.



Details for these events and the fall seminar series are announced on the CMRR website.

[Visit CMRR for event updates cmrr.ucsd.edu](http://cmrr.ucsd.edu)

Our sponsors. Our next generation.

CMRR gratefully acknowledges our sponsors: Seagate, Samsung, the Department of Defense (DoD), and TSMC.

Seagate	Samsung	DoD	TSMC
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We are in talks with several more sponsor companies and look forward to expanding the Center's research and education partnerships.

TSMC-UCSD Academy at CMRR

Semiconductor Microfabrication Clean Room Program

The Academy combines bootcamp training and selection, **200+ hours of hands-on clean-room experience at UCSD Nano-3**, and faculty-supervised process development projects. It prepares students for semiconductor careers and to apply for internships at TSMC Arizona.

- Fall 2026** Semiconductor Fabrication Bootcamp at CMRR; NANO3 clean-room training.
- Winter 2027** Semiconductor fundamentals and supervised clean-room project I.
- Spring 2027** Supervised clean-room project II.

Who should apply: Third-year undergraduates in Mechanical Engineering, Chemical Engineering, Nanoengineering, and Chemistry interested in semiconductor manufacturing.

Program team: Oscar Vazquez Mena, Coordinator; Andrew Kummel, Materials Advisor; Yu-Hwa Lo, Technology Advisor.

[Pre-register and view program details](#)

Engage with CMRR

Partner with the Center. Explore industrial membership, sponsored research, and opportunities to connect with CMRR faculty and students. To discuss your organization's interests, contact Director Vitaliy Lomakin at vlomakin@ucsd.edu. [Explore CMRR sponsorship](#)

Students and postdocs. Interested in research in memory, storage, materials, or computing? Explore CMRR's faculty groups and contact researchers whose work aligns with your interests.

Alumni. We would love to hear where your CMRR experience has taken you. Share an update about your work or a memory of the Center at cmrr-admin@ucsd.edu. We look forward to featuring alumni in future issues.

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