

DAVIS RESEARCH

UC Davis School of Medicine Office of Research



Message from the Vice Dean for Research



Greetings from the School of Medicine Office of Research, with the hope that you are able to enjoy some summer pursuits. We are marking the beginning of Fiscal Year 2024 with high hopes

that it will exceed the remarkable accomplishments of the past year.

I am honored to be involved in the search for a new Vice Chancellor of Research for UC Davis. We aim to select a VC who will continue to lead us forward in expanding the footprint of UC Davis research, both institutionally and in the School of Medicine. The SOMOR team will also be interviewing candidates for a new Associate Dean for Research Infrastructure, as we just bid a fond farewell to [Angela Haczku](#), who has decided to return her focus primarily to her personal program of research on lung disease.

We started FY 2023 with an increase in extramural funding over the prior year. This increased funding helped to boost the School of Medicine’s national research profile. More importantly, the overall growth in research will mean new and important advances in health care for our community. Notable new initiatives include the [Institute for Psychedelics and Neurotherapeutics \(IPN\)](#), which is advancing research in the psychedelic science realm, unifying academia and industry, and creating a pipeline for the development of novel agents for neuropsychiatric diseases. The IPN opened with a \$5 million investment from the School of Medicine and the UC Davis College of Letters and Science early in 2023, and got off the ground running with a live March symposium that featured nationally recognized speakers. In May,

founding IPN director [David Olson](#) also received the [Rising Star Award in Neurobiology of Psychedelics](#) from the Mahoney Institute for Neurosciences at the University of Pennsylvania.

Some individual awards of note include Public Health Sciences Professor [Rachel Whitmer’s](#) receipt of a \$25 million grant from the National Institutes of Health (NIH) to continue the Life after 90 study, which is researching dementia and brain health in a cohort of patients in their 90s. Department of Otolaryngology Professor [Peter Belafsky](#) likewise received an \$11 million award from the California Institute of Regenerative Medicine for a clinical trial targeted to patients with swallowing problems related to tongue injury from cancer treatment.

Neuroengineer and co-director of the [UC Davis Neuroprosthetics Lab](#), Assistant Professor [Sergey Stavisky](#), received recognition numerous times this year for his work in speech restoration. Among these was the [NIH Directors New Innovator Award](#) for his work using neuroprosthetic technology to advance the understanding of the neural basis of speech production. The [Department of Neurological Surgery](#) has a very active team of scientists conducting a wide variety of research from oncology to neuroengineering. More of their research is featured in this issue.

Finally, I want to point out that in May, Professor and Vice Chair for Research [Andreas Bäuml](#) of the [Department of Medical Microbiology and Immunology](#) was elected to the [National Academy of Sciences \(NAS\)](#), a very prestigious honor. His NAS membership recognizes his career-long efforts in defining the mechanisms and consequences of host-bacterial interactions, including the basis of Salmonellosis and the protean impacts

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of our interactions with our complex symbiotic microbiome. He will have the opportunity, via the NAS, to contribute to national scientific debates and science policy. His election is extremely well deserved, and sheds great luster on the School of Medicine and UC Davis as a whole.

I feel very fortunate to be leading the School of Medicine Office of Research during this unprecedented time of growth and innovation in School of Medicine research and look forward to all the exciting breakthroughs to come in the year ahead.

Kim E. Barrett, Ph.D.

Vice Dean for Research
UC Davis School of Medicine
Distinguished Professor of Physiology and Membrane Biology

Recognition



UC Davis Health Department of Surgery Professor and Chair [Diana Farmer](#) has been recognized again for her pioneering work in pediatric surgery and fetal therapy. Farmer has received the esteemed Robert E. Gross Award for Excellence in Pediatric Research and Achievement from the American Pediatric Surgical Association (APSA). The APSA Robert E. Gross Award for Excellence in Pediatric Research and Achievement acknowledges exceptional contributions that have revolutionized the way pediatric surgeons approach a specific issue. The award recognizes groundbreaking work that stands the test of time and is widely accepted as the gold standard in the field. [Read More.](#)

UC Davis Comprehensive Cancer Center has selected pediatric oncologist and clinical researcher [Elysia Alvarez](#) as the 2023 Christine and Helen Landgraf Memorial Research Award recipient. Alvarez, an associate professor of clinical pediatrics, will receive \$25,000 to expand her research on disparities in cancer survival outcomes among adolescents and young adults. She has special expertise treating young patients with solid tumors and co-leads the [Pediatric, Adolescent, and Young Adult Comprehensive Sarcoma Clinic](#) at the cancer center. [Read More.](#)



Left to right: Professors Fairclough, Zheng and Yarov-Yarovoy

The UC Davis Health Ventures Office is funding three projects through the Investing in the Future of Medicine fund, part of the Clinical Strategic Plan sponsored by Dr. David Lubarsky and the CEO's office budget. The awardees are: [Robert H. Fairclough](#), professor emeritus, Department of Neurology, [Vladimir Yarov-Yarovoy](#), professor, Department of Physiology and Membrane Biology and [Jie Zheng](#), professor, Department of Physiology and Membrane Biology. Each of the projects will receive \$50,000. [Read More.](#)

Impactful Publication



[Diana Miglioretti](#), professor of public health sciences, is co-author of “[Digital Breast Tomosynthesis versus Digital Mammography Screening Performance on Successive Screening Rounds from the Breast Cancer Surveillance Consortium](#),” published in the June edition of *Radiology*. This article looks at three dimensional digital breast imaging (tomosynthesis) in comparison to traditional digital mammography.

Award

The School of Medicine and the School of Veterinary Medicine teamed up this year to reward distinctive research efforts with the first ever **Reaching Across the Causeway** awards. These pilot awards reflect the fact that UC Davis is uniquely positioned to conduct groundbreaking collaborative research in our nationally ranked medical and veterinary schools. “We decided to support these joint awards to accelerate collaborations between our highly ranked schools, recognizing the important health insights that can result from applying a comparative lens” said [Kim Barrett](#), Vice Dean for Research in the School of Medicine. Each team is receiving up to \$50,000 for one year of support to fund planning, preparation, and submission of grant applications. Two awards were granted to projects with a School of Medicine lead contact or PI; two awards were granted to projects with a School of Veterinary Medicine contact or lead PI. The awardees are: [Amy Brooks-Kayal](#) (Professor and Chair, School of Medicine Department of Neurology), [Robert Canter](#) (Professor, School of Medicine Department of Surgery), [Stephen McSorley](#) (Professor, School of Veterinary Medicine Department of Anatomy, Physiology & Cell Biology, and [Kimber Stanhope](#) (Researcher, School of Veterinary Medicine Department of Molecular Biosciences). [Read More.](#)



Clockwise from upper left: Professors Brooks-Kayal, Canter, Stanhope, McSorley

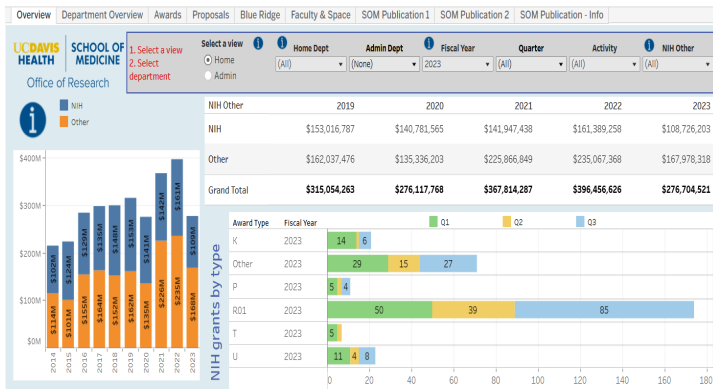


Tableau Dashboard Update

The School of Medicine Tableau Dashboard has undergone major updates and a name change! Now known as the **School of Medicine Research Metrics Dashboard**, this tool for accessing detailed grant information at the departmental and faculty level has even more functionality. The Overview, Blue Ridge, and Faculty & Space tabs remain unchanged, providing the same information as before. Two Departmental tabs have been merged into a single view, streamlining the user experience. The merged Departmental Overview tab now includes the Sponsor filter feature, providing a streamlined way to filter data.

There are new tabs for Awards and Proposals, enabling users to easily search for information by PI name. Additionally, there are two new SOM Publication tabs in this update. Users can now access various publication metrics data for individual authors by utilizing their Scopus ID (unique author identifier). Access is granted to department administrative teams.

Get to know SOMOR

Starting in 2021, [Research Operations](#) took on the challenge of increasing the number of faculty applications for research prizes and honors. A number of prizes have been under the purview of the unit for many years, but, during COVID, team-supported prize applications dipped (in part because of a suspension of some prizes offered during 2020 and 2021). Reversing this trend and increasing applications was an initiative wholeheartedly embraced by Kim Barrett when she arrived as Vice Dean for Research. The unit's support for prize nominations leapt from 2 In FY 2021 to 13 in FY 2023.

Why is the institution so enthusiastically involved in supporting individual awards? Individual or team research prizes can provide a boost to a research project and are CV-enhancers; they also reflect positively on School of Medicine departments, and UC Davis as a whole. Successful nominations can boost innovation, institutional reputation, and in turn inspire more faculty to apply for prizes.

Research Operations takes lead on several annual national prize nomination submissions, institutional prizes such as Chancellor's awards, and School of Medicine initiatives like the [Cultivating Team Science](#) and [Reaching Across the Causeway](#) awards, for which the team also supports the application process. Building on the creation of an award database in 2021, the team tracks upcoming award deadlines to notify leadership about the need to select suitable nominees. Research Operations collects and edits the application material, contacts individuals for letters of support and prepares the application for final submission.

In addition to reviving prize applications from before COVID, the team has added new awards, such as the Marion Spencer Fay and UCLA Switzer prizes. In addition, the team coordinates submission of a community engagement award, the AAMC Spencer Foreman Award, on behalf of the School of Medicine. This effort includes the input of multiple faculty, including Associate Vice Chancellor for Health Equity, Diversity and Inclusion, [Hendry Ton](#), Medical Education leadership, Employee Relations, and community leaders. In its most recent application cycle, UC Davis

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placed in the top three of this national award, meriting a site visit from the AAMC.

In 2022-23, Research Operations supported the [successful nomination of Craig McDonald](#), Chair of the Department of Physical Medicine and Rehabilitation, for the Clinical Research Forum Top Ten prize. McDonald was the second UC Davis School of Medicine researcher to achieve this prestigious national prize in as many years.

Feature

Neurosurgery Research

August is neurosurgery awareness month



For the majority of Northern California (33 counties, 6.5 million lives), UC Davis Health is the destination hospital for patients with brain tumors, aneurysms, stroke, traumatic brain and spinal cord injury, epilepsy and movement disorders, spine disorders, and the entire spectrum of pediatric neurosurgery. UC Davis neurosurgeons are recognized experts in minimally invasive surgery, robotic surgery, endoscopic surgery, laser interstitial thermal therapy, and motion-preserving spine operations.

Critical to the [neurological surgery department's](#) dynamic clinical success is a world class research effort, overseen by Vice Chair for Research, [Patrick Fuller](#). Department research encompasses basic science and clinical research across the spectrum of neurological surgery. It houses the [Bronte Epilepsy Laboratories](#), which focus on studying the mechanisms underlying epilepsies and conditions related to seizure disorders. A highly collaborative, interdisciplinary effort, the laboratories also serve as a training ground for students and fellows interested in pursuing research or clinical careers in the neurobiology or neurology of seizures and related disorders.

The department also has several exciting translational research efforts. UC Davis has been a leader in traumatic brain injury research for more than two decades. Scientists in the department's [Traumatic Brain Injury Research Program](#) work to evaluate how injury alters brain function and behavior in both laboratory models and at the bedside. It then leverages these findings to develop innovative therapeutic strategies to improve quality of life for patients with traumatic brain injury.

The [Neuromodulation Research Program](#) focuses on the use of targeted delivery of electrical stimulation to specific brain regions to alter brain activity and improve clinical outcomes. Recent projects have included use of deep brain stimulation in the treatment of epilepsy, Parkinson's disease and even exposure to toxins.



Another effort is the [UC Davis Neuroprosthetics Lab](#), which develops technology to restore abilities impacted by neurological injury and disease, such as speech. It is directed by Assistant Professors [David Brandman](#) and [Sergey Stavisky](#). Their team has been the recipient of several recent awards and honors, including Stavisky's 2022 NIH Director's New Innovator Award "They are doing groundbreaking work on developing brain computer interface devices to allow people to one day talk and walk again," says department chair [Kiarash Shahlaie](#).

Recent Research in the Department of Neurological Surgery

Current research in the department is fueled by over \$7 million in research funding for the 2022-23 fiscal year and includes the following:

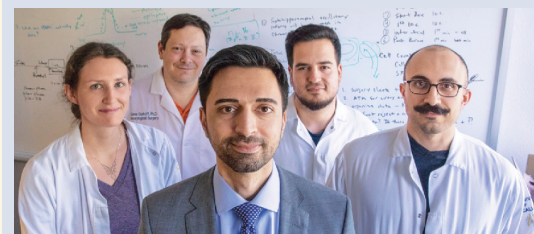
Associate Professor [Christelle Anaclet's](#) studies on the neuronal circuitry regulating sleep-wake cycle. She is investigating the beneficial role of sleep in other physiological functions and in diseases, such as Alzheimer's.

Professor [Orin Bloch's](#) work on brain and spinal tumors as the principal investigator of a NIH-funded Brain Tumor Immunotherapy Laboratory and the team leader for multiple brain tumor clinical trials.

Assistant Professor [Branden Cord's](#) study to assess a new device for the treatment of acute ischemic stroke.

Professor [Patrick Fuller's](#) work that focuses on understanding the circuit, synaptic and cellular basis of wakeful consciousness, with the long-term goal of restoring arousal in patients who are comatose.

continued on p. 5



Neurological Surgery Research, cont.

Associate Professor [Gene Gurkoff's](#) research centers around the hypothesis that in neurologic diseases such as traumatic brain injury and epilepsy, changes in neural connectivity will correlate with cognitive dysfunction. He proposes to use this data to develop novel tools to improve or restore outcome in individuals with chronic deficits.

Chief of Spinal Neurosurgery and Co-Director of the UC Davis Spine Center, Professor [Kee Kim's](#) studies on novel devices and cutting edge technologies to improve patient outcomes without surgeries or with spinal surgery procedures to improve function, stability and spinal pain relief.

Assistant Professor [Allan Martin's](#) work to develop and validate a novel method to categorize the severity of degenerative cervical myelopathy in patients.

Associate Professor [Ryan Martin](#) is currently using PET imaging to measure how neuro-inflammation changes after a traumatic brain injury and how this affects outcome.

Professor and Department Chair [Kiarash Shahlaie's](#) clinical trial using deep brain stimulation to improve the cognitive abilities of patients with Parkinson's disease.

Assistant Professor [Jeffrey Vitt's](#) work on development and validation of a new noninvasive intracranial pressure assessment approach.

Associate Professor [Lara Zimmermann's](#) work on FASTEST, a trial to establish the first treatment for acute spontaneous intracerebral hemorrhage within a time window and subgroup of patients that is most likely to benefit.

In the News

Courtney Lyles named new director of the Center for Healthcare Policy and Research

The UC Davis Center for Healthcare Policy and Research (CHPR) announced the appointment of [Courtney Lyles](#) as the center's new director, starting July 1. She has also joined the [Department of Public Health Sciences](#) as a faculty member. Before moving to UC Davis, Lyles was on faculty at UCSF's Division of General Internal Medicine at Zuckerberg San Francisco General Hospital, Center for Vulnerable Populations, and the Department of Epidemiology and Biostatistics. She served as a co-director of the Innovation in Research and Informatics core for the Clinical & Translational Science Institute (CTSI) and the Population Health Data Initiative at UCSF. [Read More](#)

Interim chair of the Department of Pathology named

[Kuang-Yu Jen](#), professor of clinical pathology, has been appointed Interim Chair of the [Department of Pathology and Laboratory Medicine](#), effective July 1, 2023. He is stepping in for [Lydia Howell](#) who served as department chair for almost 13 years and has retired from UC Davis. Howell will be joining the Association of Pathology Chairs as its founding deputy director.

Jen is a nationally recognized renal pathologist recruited to UC Davis School of Medicine in 2016 from UCSF to establish UC Davis Health's medical and transplant renal pathology service. Dr. Jen currently serves on the board of the [Renal Pathology Society](#) as Treasurer and is actively involved in developing computational pathology in various areas of renal pathology and other emerging applications.

Research Headlines

- [Are biopsies needed in pediatric and young adult patients with lymph node metastases?](#)
- [Top psychedelic researchers featured in new video series](#)
- [Can 20 minutes of cool running water improve burn outcomes?](#)
- [UC Davis and Orgenesis partner to boost access to gene and cell therapies in California](#)
- [Wildfire smoke increases inflammation, lung disease risk](#)
- [Nephrology researchers shining a light on chronic kidney disease](#)
- [Transcatheter edge-to-edge heart valve repair shows benefit for severe tricuspid regurgitation](#)
- [Is epinephrine effective during neonatal resuscitation?](#)

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