

Message from the Assistant Dean



Greetings from the School of Medicine Office of Research! This is the inaugural edition of our quarterly newsletter on School of Medicine (SOM) research. Together with Associate Dean for Research, Dr. Ted Wun, and Associate Dean for Translational Research, Dr. Angela Haczku, I want to acknowledge the hard work and accomplishments of our faculty and staff who

persist and continue to excel in 2021, despite the difficulties of the past two years. The diverse units of

the School of Medicine Office of Research (SOMOR), from **Grants Facilitation** to **Evaluation, Space and Safety**, work together to provide excellent and comprehensive support for SOM researchers. This has been a busy year for our team - our Space and Safety units worked onsite throughout COVID-19 under stressful and ever-changing conditions. Fiscal Year 2021 also saw an increase in grant facilitation services as well as a record-setting year in extramural funding. We will go into more detail about the work our group has been doing by featuring each unit in this and subsequent newsletters. This first issue features our **Research Operations** unit.

This issue also highlights recent high impact publications from SOM faculty **Dr. Diana Farmer**, **Dr. Aguilar-Gaxiola** and a research team from the UC Davis Department of Family and Community Medicine. These publications in top health science and medical journals reflect the high caliber of research happening here. Our feature article for this issue is a review of just *some* of the recent research focused on addressing **health disparities**.

Finally, we are pleased to welcome our new Vice Dean for Research, **Dr. Kim E. Barrett**, whose appointment is scheduled to begin on November 1. Dr. Barrett's most recent positions at UC San Diego were Dean of the Graduate Division and Vice Chair for Research in the Department of Medicine. She is an internationally recognized scholar in the area of gastrointestinal physiology and her numerous awards include the 2021 Distinguished Achievement Award for Basic Science from the American Gastroenterological Association.

Please remember to visit our [website](#) for comprehensive information about the services our office provides and reach out with any questions or feedback.

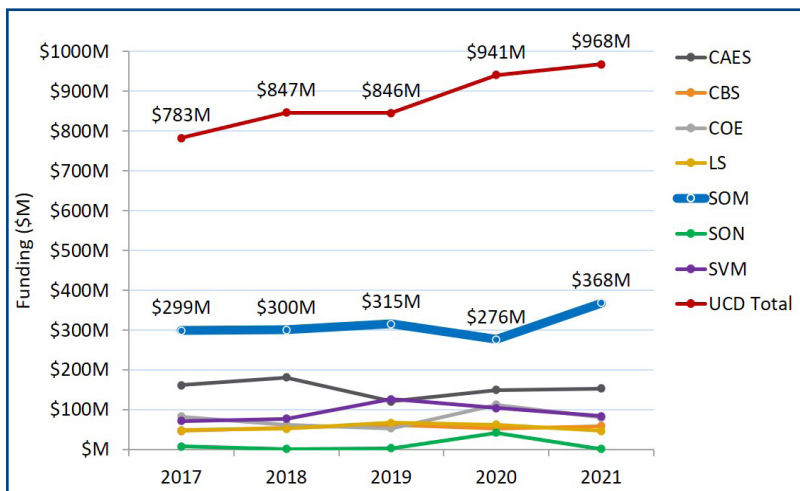
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SOM Extramural Funding Reaches New Heights in 2021

UC Davis extramural funding trend: contribution of SOM



In fiscal year 2021, SOM remained the main driver for UC Davis research funding, accounting for approximately **38% of all UC Davis extramural funding**, up from 29% in 2020. Overall, the SOM saw a significant 33% increase in funding of approximately \$92 million, spurred by state contract funding (approximately \$71 million) and health science contracts funding (approximately \$38 million). Many of these awards are multi-year projects with continuing expenditures into subsequent years. The number of **R01 awards** increased by nearly 14% over FY 2020 and the number of **P awards** by 28%, reflecting the SOM's excellent track record in obtaining Center grant awards. Other research funding highlights in FY 2021 include the number of our active **U awards** (32), as well as the **K awards** (26) that affirm UC Davis SOM's strong foundation of early career and mentored faculty conducting innovative and recognized research.

get to know **SOMOR**

Research Operations

Research Operations is the administrative unit of SOMOR, a team that is responsible for SOM faculty and project coordination and the facilitation of a wide range of services for research activities, including research grant proposals, data analysis and reporting, award notices, grant and nomination support, and the SOM Grant Tableau Dashboard.

One of the reports generated by Research Operations is the **Publications Metrics Report**, which tracks the research productivity and scholarly impact generated by researchers in the UC Davis School of Medicine. This report provides quantitative and qualitative information about the state of SOM research across its 25 departments and is shared with Dean Brashear, and the respective department chairs and chief administrative officers. This data offers an invaluable insight into publication volume, prestige of publications and the number of citations our UC Davis SOM researchers are receiving.

For example, the data from the most recent report shows a 6% increase in the number of publications by UCD SOM researchers between 2016 and 2020. It also shows that their work during this time frame appears in some of the most prestigious peer-reviewed journals and research venues, with **more than 45% of their publications appearing in journals ranked in the top 10% in their respective fields.**

In the fall, Research Operations will generate the *SOM Departmental Extramural Funding Report*. This report has been developed to broadly capture the various extramural funding metrics that can be utilized for future budgeting and strategic planning. The report is divided into three sections: department overview, extramural funding, and an appendix of the current fiscal year's active awards by individual PIs in the respective department.

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impactful Publications



Dr. Diana L. Farmer, Chair of the Department of Surgery and internationally renowned expert on fetal and neonatal surgery, and Dr. Sarah C. Stokes, UC Davis Surgery resident, have published in the July 2021 issue of *The Lancet*. Their article, "Paediatric surgery for congenital anomalies: the next frontier for global health," reports on the mortality rate gap of children with congenital gastrointestinal anomalies from low- and middle-income countries. Because pediatric surgery has historically been neglected in global health efforts, life-saving surgical interventions for these children are largely out of reach. [Link](#)



In the August 3 issue of *JAMA*, Dr. Alicia Agnoli and a team of UC Davis researchers from the Department of Family and Community Medicine published a paper on the psychosocial risks of rapid opioid dose reduction. Dr. Agnoli hopes that the paper helps inform clinical guidelines for patient dose tapering. Read more on this publication [here](#). Collaborators on this research include Drs. Guibo Xing, Daniel Tancredi, Elizabeth Magnan, Anthony Jerant, and Joshua Fenton, from UC Davis Health. [Link](#)



In the September 15 issue of *JAMA*, Dr. Sergio A. Aguilar-Gaxiola, Professor of Internal Medicine and Director of the Center for Reducing Health Disparities, has penned an invited commentary on a study by Dr. Ana M. Mora and colleagues on the COVID-19 risk factors of Monterey County farmworkers and their families, identifying how unique community, workplace and home environments are contributing factors to high transmission and mortality rates among agricultural workers. He and his co-authors point out that to "...design effective interventions for community spread, researchers must address the structural factors and social determinants of health faced by farmworkers and other historically underserved populations. These considerations will also be vital as we prepare our health care, public health, and civic infrastructures to respond more rapidly and effectively to the next pandemic." [Link](#)



Health Disparities Research at UC Davis School of Medicine

Shortly into the COVID-19 era, it became clear that the pandemic was not just a twin crisis to the social justice upheaval of 2020; it was a reflection of it, disproportionately impacting our most vulnerable populations. UC Davis has a long history of serving the most vulnerable populations in the region and our research plays an important role in identifying and tackling issues related to the marginalized and underserved in the health care system. Below are just a few recent examples of UC Davis research focusing on health disparities in community health, education and social justice.

The Perfect Storm

To illustrate the science behind the interconnected problems of race and health disparities, faculty and trainees from the [UC Davis Environmental Health Sciences Center's NIEHS T32 training program](#), "Advanced training in environmental health sciences," reported on the correlation of COVID-19 severity and existing health disparities.

As explained in their publication, "[Climate Change, Environmental Justice and COVID-19: The Perfect Storm](#)," the virus' ability to cling to particulate matter (PM) most likely increases the chances of contracting COVID-19, as well as the severity of the infection, in areas with higher concentrations of PM. In addition to being at greater risk for conditions that are comorbidities for infection, black and brown communities are also at greater risk of exposure to chronic air pollution. As the report concludes, "we cannot ignore social inequality and expect to see progress in environmental health."

Creating a Model for Change

2021 saw the culmination of an important 5-year joint project between Solano County Behavioral Health, [UC Davis Center for Reducing Health Disparities](#), and community-based organizations to implement and evaluate an innovative mental health services model called the Solano County Interdisciplinary Collaboration and Cultural Transformation Model (ICCTM). The main question that this multi-year project was set to answer is whether it is possible to advance health/mental health equity in historically underserved populations through a community initiated and driven approach. The project focused on increasing access and utilization of mental health services for Latino, Filipino American, and LGBTQ+ communities in Solano County, CA through community engagement. The goal of this project was to assist Solano County Behavioral Health in creating quality improvement action plans that were driven by community defined solutions and incorporated the Culturally and Linguistically Appropriate Services (CLAS) Standards and the Institute for Healthcare Improvement's Quadruple Aim in its approach.

The ICCTM project's outcomes provide evidence that it is possible to achieve health/mental health equity with historically underserved populations through a community-engaged approach. Read more on the project's development and outcomes here. [Link: Final Evaluation Report](#).

Addressing Health Disparities from the Ground Up

The call for medical schools to increase the diversity of health education trainees reflects the basic understanding that health care is improved among all patient groups when their health care providers reflect their backgrounds and lived experiences. UC Davis SOM not only incorporates this as a core value, but it has also taken steps to implement holistic, inclusive admissions practices to increase the diversity of its trainees. Recent outcomes, such as recognition from the [US News and World Report diversity ranking](#) – 4th overall in the nation and 1st in California - and a study looking at 15 years of admissions data, support the effort.

As published in the Summer 2021 issue of the [Journal of Health Care for the Poor and Underserved](#), this broad study led by Dr. Anthony Jerant, Chair of the Department of Family and Community Medicine and Interim Director of the UC Davis Center for Healthcare Policy and Research, found that completing pre-medical school post-baccalaureate courses, such as in programs like the one offered by UC Davis SOM, was associated with an increase in the number of medical school matriculants with characteristics under-represented in medicine, such as minority race/ethnicity.

[Related: School of Medicine receives state funding to address Native American health needs](#)

RACE, COVID-19 & AIR POLLUTION

WHAT IS THE CONNECTION?

Today we're experiencing a series of crises — systemic racism, the COVID-19 pandemic and debilitating levels of air pollution from wildfires — compounding the impact of each, especially when it comes to health. Research also shows health problems associated with these issues have one thing in common: poverty. In the United States, Indigenous, Black and Latino people are 2 to 2.5 times more likely to be poor than whites. Race has a profound impact on class, which affects opportunities from education and housing to jobs and health. For the better part of a century, racism through redlining and lending in the housing market have pushed poor people of color into areas that lack the resources and political clout needed to prevent pollution where they live and work. These communities typically shoulder more of the burden of bad air because they're near highways, factories and dumps, exposing people to pollution for extended periods of time. Brown and black people already tend to have higher levels of chronic disease like asthma and hypertension, live in food deserts and lack adequate health care or good paying jobs, all of which amplify the impact pollution has on health.

It's this unequal burden of air pollution that has emerged as one of the main reasons the novel coronavirus has hit Black, Indigenous, People of Color (BIPOC) hardest. Research shows long-term exposure to urban air pollution increases vulnerability to COVID-19, especially for those with underlying health conditions. Many pre-existing conditions that increase the risk of death in people with COVID-19 are the same diseases affected by long-term exposure to air pollution.

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Climate, Health, and Equity Symposium Review

On September 24, 2021, healthcare professionals and students gathered for the 2nd Annual [NorCal Symposium on Climate, Health, and Equity](#) to learn about climate change as a social justice issue. Co-sponsored by UC Davis SOM and partner organizations from UCSF, Stanford, and Kaiser Permanente, the symposium was held over zoom and featured speaker Dr. Robert Bullard, the “Father of Environmental Justice.” Participants were able to attend sessions that included climate justice curriculum and sustainable health care discussions; themed happy hours; and a roundtable session with healthcare leaders, including including Vice Chancellor of Human Health Sciences and UC Davis Health CEO, Dr. David Lubarsky. UC Davis has been chosen as the host for the 3rd Annual Symposium, scheduled for Fall 2022.

Learn more at



Scan or go to our website:

tinyurl.com/norcalclimatechange

grant funding Updates

NIH 2021–2025 Strategic Plan

Funding priorities for biomedical and behavioral research

The NIH 2021-2025 strategic plan is organized around a framework of three key objectives: 1) Advancing Biomedical and Behavioral Sciences; 2) Developing, Maintaining, and Renewing Scientific Research Capacity; and 3) Exemplifying and Promoting the Highest Level of Scientific Integrity, Public Accountability, and Social Responsibility in the Conduct of Science.



Five cross-cutting themes are woven across the key objectives, centered around minority health and health disparities, women's health, public health challenges across the lifespan, collaborative science, and data science.

"As outlined in this Strategic Plan, this approach will enable NIH to build a solid foundation of fundamental knowledge about living systems that will serve to accelerate research aimed at addressing our most pressing health needs."
Dr. Francis Collins, NIH Director

<https://www.nih.gov/about-nih/nih-wide-strategic-plan>

NIH-Wide Strategic Plan for Fiscal Years 2021-2025

The NIH has updated its [Strategic Plan for Fiscal Years 2021-2025](#); the plan articulates NIH's highest priorities over the next five years and outlines the NIH vision for future direction, capacity, and stewardship of biomedical and behavioral research.

As Dr. Francis Collins, the NIH Director, notes in the opening statement, “NIH will invest efficiently and effectively in a wide range of basic, translational, clinical, and applied research, while at the same time supporting the workforce and infrastructure required for a sustainable research enterprise.”

Advanced Research Projects Agency for Health (ARPA-H)

To improve the U.S. government's capabilities to speed research that can improve the health of all Americans, President Biden is proposing the establishment of the [Advanced Research Projects Agency for Health \(ARPA-H\)](#), which will:

- Focus on time-limited projects with goals, benchmarks, and accountability.
- Revolutionize how we prevent, treat, or cure a range of diseases, including cancer, infectious diseases, Alzheimer's disease, and other diseases that have a significant impact on Americans' health and quality of life.
- Foster breakthroughs to serve patients equitably—at levels ranging from the molecular to the societal—and drive them to the point that they will be adopted by medicine and commercialized by industry.

Examples of potential ARPA-H projects

Developing mRNA vaccines to prevent most cancers; creating molecular “zip codes” that target drugs only to specific tissues and cell types, to eliminate serious side effects.

Highly accurate, inexpensive, non-intrusive, wearable monitors for blood pressure and blood sugar that provide real-time data to patients and providers.

Holistic systems that eliminate racial disparities in maternal morbidity and mortality rates and premature births.

Search for funding opportunities, limited submissions and sign up to receive weekly email alerts of new funding opportunities, announcements, and events relevant to research at UC Davis [here](#).

**UC DAVIS
HEALTH**

**SCHOOL OF
MEDICINE**

Office of Research

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