Our long, hot summer

Racial justice in the age of global crisis

The UC Davis Environmental Health Sciences Center (EHSC) lends its voice to the beautiful chorus of organizations supporting the anti-racism movement at this historic moment. This movement stands in sharp contrast to the ugly actions of police brutality that have targeted George Floyd and thousands of Black people over centuries, unabated. Equally ugly is the context, in which structural biases perpetuate unequal opportunities and resources for people in education, housing, health care, social services and criminal justice.

Racism is devastating to the direct victims even as it erodes the social fabric of all of our lives. EHSC seeks to uncover the impacts on health from environmental chemicals—such as lead, pesticides, pollution and endocrine disrupting chemicals in our air, water, housing and consumer products—as well as environmental processes and events such as climate change and ensuing wildfires, drought, heat waves, flooding and sea level rise. It is a well-documented fact that environmental exposures are, on average, far higher in communities of color, while increasing evidence on disasters suggests that communities of color are often the hardest hit, and have the most difficulty in recovering.

We therefore commit to working at the intersection of public health and environmental justice through three avenues: research, community engagement with a focus on at-risk populations and the translation of scientific evidence into policy aimed at achieving full

access to clean and healthy places for all. Our Center and our resources are open to all schools and colleges at UC Davis, and we extend a special invitation to BIPOC members of the campus community with interests in achieving justice and equity in environmental health.

Irva Hertz-Picciotto, PhD

Director, UC Davis Environmental Health Sciences Center

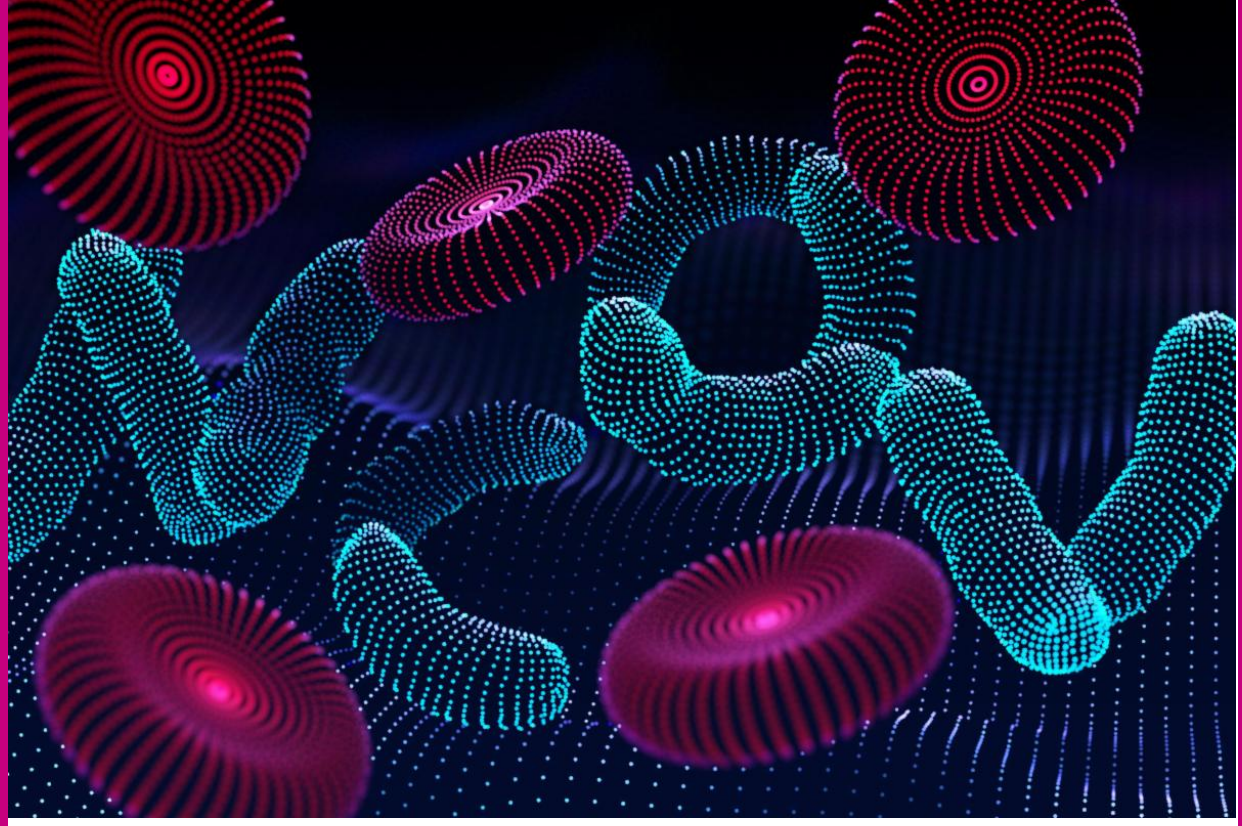
Congratulations to our new EHS Scholar Dr. Randy Carney

The UC Davis Environmental Health Sciences Center is excited to announce that Randy Carney, PhD is our 2020 EHS Scholar. Dr. Carney is an assistant professor in biomedical engineering who designs tools for early-stage cancer diagnosis.

The Carney Lab builds Raman spectroscopy and surface-enhanced Raman scattering (SERS) devices to investigate a type of extracellular vesicle called an exosome. Exosomes are responsible for biomolecular messaging between cells.

“The technology is exciting and has lots of potential for environmental health applications,” says EHSC Program Manager Natalie Nardone.

Dr. Carney has a PhD in Materials Science and Engineering from the Swiss Federal Institute of Technology in Lausanne, an SM in Materials Science and Engineering from MIT and a BS in Chemistry from the University of Arkansas. Check out The Carney Lab’s *very* cool website and follow him on Twitter @carney_lab. Read the full interview with Randy on our EHS Scholars page.



COVID-19 research

For a couple of months now, EHSC's COVID-19 Survey for Workers has been recruiting through Facebook groups (including our own). We've collected data from across 42 US states and have workers representing a range of industries: nurses, pharmacists, factory workers, postal clerks and educators, to name a few.

Over the next couple of months, we'll be partnering with workers' organizations and unions to disseminate the survey to larger groups. We're developing a version of the survey specific to day laborers and domestic workers, through partnerships with Sonoma's Graton Day Labor Center and the California Domestic Workers Coalition.

We're also excited to announce that we launched the Encuesta COVID-19 Para Trabajadores, making the survey accessible to Spanish-speakers. We're hoping to translate it into Chinese, Tagalog and Vietnamese, so if you know anyone who is bilingual and fluent in those languages, please contact EHSC Program Manager Natalie Nardone (nlnardone@ucdavis.edu).

#WhiteCoats4BlackLives (WC4BL)

There has been a lot of chatter and activism online in academic, scientific and medical circles since George Floyd's death over what our institutions must do to make structural changes needed to dismantle racism. #BlackAndSTEM and #BlackInTheIvory have become virtual town halls for discussions ranging from student

deportation to inequities in academic hiring.

One group that has been particularly prolific in organizing is White Coats for Black Lives (WC4BL). Medical students founded WC4BL in 2014 after Eric Garner and Michael Brown died at the hands of police and there were no indictments against their killers. The organization now has 32 chapters from coast to coast, including one at UC Davis. Among its other activities, it uses its Racial Justice Report Card to give medical students a means to assess their school's student and faculty diversity, curriculum, patient care and treatment of workers, and identify ways in which institutions can better pursue racial justice. Learn how our own medical school fared in the 2020 UC Davis Health Racial Justice Report Card.

Updates from our cores

Community Engagement Core

One vital aspect of EHSC's work is community outreach and engagement. Our Community Engagement Core (CEC) is dedicated to overseeing this work which includes science communication, facilitating Community Stakeholder Advisory Committee (CSTAC) meetings and acting as a bridge between scientists and local communities where research takes place.

A recent training the CEC organized for our 2020 pilot project grantees highlights the importance of creating the space to make these connections. On July 13-14, grantees Peter Havel, Lisa Miller, Tina Palmieri, Crystal Rogers and Anthony Wexler participated in a 2-hour training with Nayamin Martinez from the Central California Environmental Justice Network, Kevin Hamilton from the Central California Asthma Collaborative and Ryan Jensen from the Community Water Center to learn how to develop successful community-engaged research projects. Read more about the training and get materials here

For more information on this year's pilot projects or upcoming CEC work, please contact CEC Program Manager Aubrey Thompson (abthompson@ucdavis.edu).

Environmental Exposure Core

Seed Grants Funded
Grantee: Zhaodan Kong
Project title: Unmanned Arial Vehicles (UAVs) for Large-Scale, Real-Time, Human-Health-Related Data Collection during Wild and Prescribed Fires

Project goal: To explore the possibility of using a swarm of coordinated small (lightweight) Unmanned Aerial Vehicles (drones), equipped with low-cost air-quality sensors, to provide three-dimensional (spatially and temporally resolved), real-time information on aerosol and gaseous pollutant concentrations over a large area affected by nearby wild/prescribed fires.

Integrative Health Sciences Facility Core

Seed Grants Funded

Grantee: Gozde Goncu Berk

Project title: Development of a Novel Protective Face Mask for Children

Project goal: To develop a novel and user-friendly face mask design for children focusing on fit, sizing and material features.

Grantee: Nitzan Shabek

Project title: Perception Mechanism of Wildfires Smoke Derivative, Karrikin, by Human Epoxide Receptor

Project goal: Decoding the mechanism of KAI2-karrikin complex and identifying a unique molecular correlation with homologous human cellular receptors that potentially perceive smoke-derived compounds post-fire. Based on our preliminary deep informatics and structural-based analyses we identified the human soluble Epoxide Hydrolase (sEH) as a putative novel receptor for karrikin. In the proposed research, the Shabek laboratory will integrate biochemistry, structural-functional biology, cellular and computational biology to elucidate the action of human sEH as a novel smoke-derivative receptor.

Recently published

- Tal, Tamara; Yaghoobi, Bianca; **Lein, Pamela J**. *Translational Toxicology in Zebrafish*. Current Opinion in Toxicology. 2020 Oct-Dec; 23-24 :56-66
- Schmuck, Martin R; Keil, Kimberly P; Sethi, Sunjay; Morgan, Rhianna K; **Lein, Pamela J**. *Automated high content image analysis of dendritic arborization in primary mouse hippocampal and rat cortical neurons in culture*. Journal of Neuroscience Methods. 2020 Jul 15; 341 :108793
- Shin, Hyeong-Moo; **Bennett, Deborah H**; Calafat, Antonia M; Tancredi, Daniel; **Hertz-Picciotto, Irva**. *Modeled prenatal exposure to per- and polyfluoroalkyl substances in association with child autism spectrum disorder: A case-control study*. Environmental Research. 2020 Jul; 186 :109514

In the news

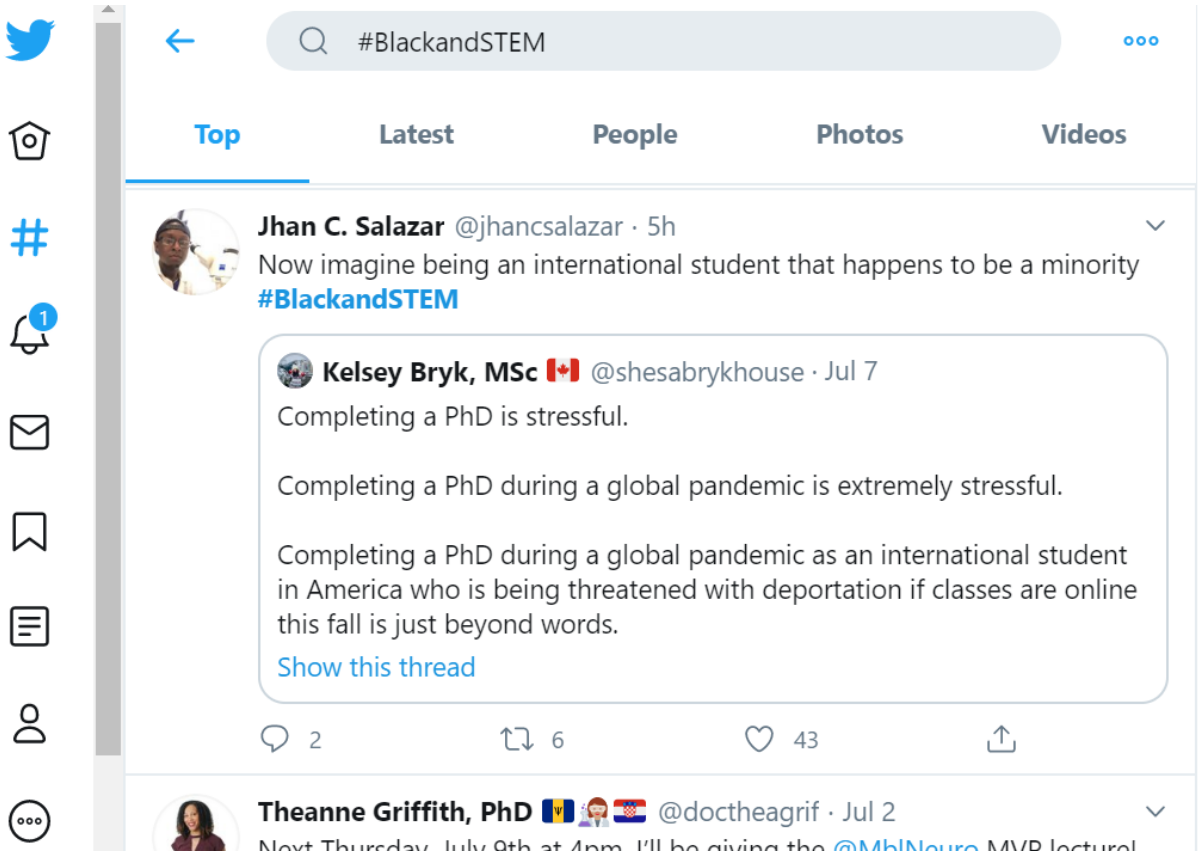
- AgriPulse.com interviewed Kent Pinkerton for *Farmworkers, growers grapple with need for move COVID-19 tests*, July 15, 2020
- Xinhua.net spoke to Kent Pinkerton in *Insufficient COVID-19 testing for US public contributes to high death toll*, June 4, 2020

Announcements

- **Science Seminar Series**: On September 17 from 12:00 PM-1:00 PM Cristina Davis, Nicholas Kenyon and Christoph Vogel will discuss COVID-19 via Zoom. Learn more about their talks and get registration information here.
- **Update on the Emmys** ☹: "Waking up to Wildfires" lost to Robert Redford and the Mill Valley Film Group for their amazing work "The New Environmentalists." While we were sad not to bring home a gold statuette, it was an honor to lose to this talented group of filmmakers.

A good read

- The diversity-innovation paradox in science, Proceedings of the National Academy of Sciences
- Creating real change at academic medical centers—how social movements can be timely catalysts, The New England Journal of Medicine
- For doctors of color, microaggressions are all too familiar, The New York Times
- Addressing the elephant in the room: Microaggressions in medicine, Annals of Emergency Medicine
- Hispanic and Black children at higher risk of coronavirus hospitalization, CDC finds, The Washington Post
- The fullest look yet at racial inequality and coronavirus, The New York Times
- Study of 17 million identifies crucial risk factors for coronavirus deaths, The New York Times
- Can an algorithm predict the pandemic's next move?, The New York Times



If you have any announcements, new research, press coverage or anything else you'd like to share with your EHSC colleagues in this newsletter, please contact Jennifer Biddle (jsbiddle@ucdavis.edu). Thank you!

Background image: Medical students at a #WhiteCoats4BlackLives die-in

Connect with us / environmentalhealth.ucdavis.edu