



UC DAVIS
ENVIRONMENTAL HEALTH
SCIENCES CENTER

Science for a healthy planet

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EHSC Public Policy Intern Kyle Kreuger, Senator María Elena Durazo, filmmaker Paige Bierma and Jennifer Biddle (L-R) during the filming of "Dignidad: Domestic Workers' Struggle for Justice in California." Biddle connected EHSC to Durazo and the California Domestic Workers Coalition, whose work around SB 321 was the basis of the documentary.

Director's message

By Irva Hertz-Picciotto

This issue of the UC Davis Environmental Health Sciences Center (EHSC) Newsletter is dedicated to **Jennifer Biddle**, our digital strategist, who will be leaving us this month. During her four years with us, she worked tirelessly on an amazing array of activities to strengthen the outreach for environmental health and expand the visibility of research, community connections, and collaborations of the EHSC.

Through her efforts: Our website was reconstructed and optimized to vastly grow the traffic coming to it; an Emmy-award winning documentary filmmaker created several videos ranging from ~10 minutes to an hour long documentary of the 2017 Northern California wildfires that PBS aired for two years; social media platforms were harnessed for recruitment into online surveys about experiences in wildfires and later, COVID; community-based research was documented and highlighted; and the accomplishments of our EHSC scholars, pilot awardees, and members were promoted through social media, our website, digital campaigns, and other outreach.

[Read more](#)

EHSC researchers in the spotlight

Dr. Bill Lasley, Professor Emeritus of Population Health & Reproduction at UC Davis, just published "**Adverse biobehavioral effects in infants resulting from pregnant rhesus macaques' exposure to wildfire smoke**" in *Nature Communications*.

Dr. Janine LaSalle, Professor of Microbiology and Immunology at UC Davis Health, published groundbreaking new research in **Genome Biology** identifying a novel human gene linked to fetal brain development and autism. Read "**Placental methylome reveals a 22q13.33 brain regulatory gene locus associated with autism.**"

Dr. Jonathon London is Associate Professor in the Department of Human Ecology and Co-Director of EHSC's Community Engagement Core. London co-authored an article about **AB-617** with former **CSTAC member Veronica Eady** in the *American Journal of Public Health*. Read "**West Oakland's Experience in Building Community Power to Confront Environmental Injustice Through California's Assembly Bill 617.**"

Dr. Hong Ji is Assistant Professor in the Department of Anatomy, Physiology and Cell Biology at the UC Davis School of Veterinary Medicine and 2019-20 Environmental Health Science Scholar. Dr.

UC Davis Environmental Health Sciences Center

Reimagining Health Equity in California

Annual Retreat
October 25 & 26



**Call for Poster Abstracts:
Due September 24**

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for more information.

2021 Annual Retreat recap

Our Annual Retreat took place on October 25 and 26, 2021, with a focus on current challenges and future directions for environmental health. Features included a riveting and inspirational keynote speaker **Vi Wahigi**; research updates from Environmental Health Science Scholars **Dr. Randy Carney** and **Dr. Melanie Gareau**; an uplifting youth environmental justice panel; poster presentations; and talks by Dr. Don Hankins on Indigenous fire burning, **Dr. Susan Handy** on transportation, land use and health equity and **Nayamin Martinez** on environmental justice and injustice in the

Ji, along with Dr. Lisa Miller and Dr. Janine LaSalle, have been investigating early life wildfire smoke exposure associated with epigenetic changes in rhesus macaques at the California National Primate Research Center. Ji and her colleagues recently published a paper in *Environment International* on methylation changes in nervous and immune system genes. **[Read about Dr. Ji's exciting new discoveries.](#)**

Recently published

See the most **[recently published research](#)** by Drs. Keith Bein, Deborah Bennett, Cristina Davis, Irva Hertz-Picciotto, Hong Ji, Nicholas Kenyon, Kent Pinkerton, Rebecca Schmidt, Tom Young and many others.

Q&A with Alex Mendelmar

We're excited to announce that Dr. Alex Mendelmar joined our team as our Center's new Program Director in January. Dr. Mendelmar comes to us from UC Berkeley where, as the Director of Experiential Learning at the Fung Institute, he ran a large, highly successful program for engineering graduate students.

Alex's background is in qualitative research, social sciences and communications. He received his PhD in Anthropology from UC Berkeley, after completing his dissertation on youth activism, political innovation and leadership. He holds an undergraduate degree in Economics from the University of Toronto. **[Learn more about Alex Mendelmar's unique background in this Q&A.](#)**

Coming soon

The Journal of *Toxicology and Environmental Health* accepted **Dr. Kent Pinkerton's** manuscript "Effects of life-stage and passive tobacco smoke exposure on pulmonary innate immunity and influenza infection in mice."

Central Valley.

Congrats to Veneese Brown, Hanyang Li, Lo-Wei Lin, Keegan Malany, Osman Sharifi and Nathaniel Stevens for winning the poster competition awards!

More than 100 people registered, with two-thirds of attendees giving feedback in an anonymous survey afterward. Highlights of the post-retreat evaluation were overwhelmingly positive, with:

- Participants rating the retreat 4.5 out of 5.
- Eighty-eight percent satisfied or extremely satisfied.
- All sessions receiving high ratings with the keynote address by Viola Waghayi, a native Alaskan activist and the youth environmental justice panel moderated by Sarina Rodriguez receiving the highest marks.

We're now planning the 2022 retreat. If you're interested in helping, please contact the planning committee by emailing Alex Mendelmar (abeliaev@ucdavis.edu).

Announcements

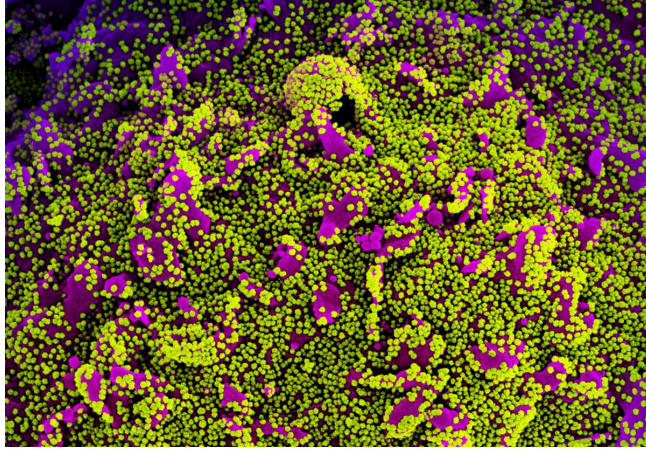
- Join us for the next **[EHSC Anti-Racism Community Meeting](#)** on May 12 (9-10 AM). Contact Shosha Capps for more details (sacapps@ucdavis.edu).
- Learn how to be more inclusive and bias-free by getting certified in **[Cross-Cultural Competence](#)** and **[Understanding Diversity](#)**. These courses are free and highly recommended by EHSC staff who've participated in them.

RESEARCH UPDATES

COVID-19 research

COVID-19 Survey for Workers

Through recruitment in hundreds of Facebook groups that our Center posts in daily, more than 5,000 people have participated in our **[COVID-19 Survey for Workers](#)**. This survey is still open, with no anticipated date of



closing yet.

In addition to the online survey, we've been working with community organizations representing workers in jobs that put them at a higher risk of exposure to the virus. These groups have distributed the survey to their workers directly. Last year, we produced a summary report on the impacts of COVID-19 experienced by **domestic workers**. Our next report will be completed soon on members of the Service Employees International Union-United Healthcare Workers West.

—Camille Burlaza, José Lopez García, Jasmine Montes, Dr. Irva Hertz-Picciotto

ÓRALE Project

ÓRALE in numbers

- 21,950 total COVID-19 tests (February 6, 2021 to April 3, 2022)
- 4,091 COVID-19 tests during the Omicron surge in California (mid-December 2021 to mid-February 2022)
- 582 ÓRALE testing events to-date
- 2,292 total positive cases detected (February 6, 2021 to April 3, 2022)
- 100 ÓRALE surveys administered (February 3, 2022 to April 3, 2022)

The ÓRALE Project has been busy; the team ended the 2021 year with 17,529 COVID-19 tests total administered and recently surpassed 21,000 tests. On the tail of the Delta variant, the recent Omicron wave has greatly increased interest for testing resulting in record high demand for COVID-19 tests.

With the reopening of schools in the fall and the onset of Delta, ÓRALE has seen an uptick in the number of children coming to get tested. In the month of December, one-third of patients were children under the age of 18, children also accounting for 36% of positive cases and ages 18-55 accounting for over half (51%) of positive cases in December. In the last few months, it has been Madera and Stanislaus Counties that have had the highest positivity rates. Previously high rates in Fresno County began falling even as these other two counties continued to have enormous needs for testing and record-breaking positivity rates affecting both children and adults.

A supplement to the main ÓRALE grant led by **Dr. Miriam Nuño** was awarded last fall. Dr. Nuño will be looking into the root causes behind vaccine hesitancy in Latinx communities where ÓRALE currently works.

In just the last few months, the ÓRALE team has said goodbye to Clinical Research Coordinators, Glenda Espinal and Leyla Teos, and welcomed a new Clinical Research Coordinator, Conrado Preciado. ÓRALE's team of highly dedicated Clinical Research Coordinators and Laboratory Assistants has gone above and beyond, providing counseling services to positive cases and testing services on short notice in high-risk sites. One of these routinely visited sites included the migrant centers which closed in mid-November. With the recent surge in cases and the emergence of new SARS-CoV-2 variants, ÓRALE is committed to continue to provide COVID-19 testing services to Latino/a communities living in remote and underserved areas in our focus counties.

—Inigo Verduzco Gallo and Mariela Peña

Wildfire research

The wildfire research team has been working hard over the past several months testing the **Baseline 2020-2021 Wildfire Survey** and **Follow-up 2018 Wildfire Survey**, making sure they're ready to disseminate to California communities. After a two-year break, the Follow-up 2018 Wildfire Survey is now live and soon (or by the time you read this) the 2020-



2021 Wildfires Survey will be live and recruiting again for any household in northern California, especially those affected by wildfires in 2020-2021. There are a few improvements:

- The **Follow-up 2018 Wildfire Survey** has been redesigned so all adults and children ages 13-17 can respond individually to the survey. In the past, one person took the survey for the household. This change should make responses more accurate.
- The **Baseline 2020-2021 Wildfire Survey** is being translated into Spanish, which is

expected to launch in late Spring.

- There will be improvements to the specimen collection process in the **Baseline 2020-2021 Wildfire Survey**. We'll be collecting hair, saliva, toenail clippings, urine, blood and cat fur from the participants to help identify the fire and smoke-related chemicals that may be related to wildfires.
- EHSC scientists will also be recruiting for a study that will take air samples, breath samples, and nasal swabs to compare chemicals and microbes in the wildfire season and in the off-season. We will be recruiting for households that are located in an area that has been directly affected by fires or heavy smoke, especially if this occurred more than one year in the last 5 years.

—Camille Burlaza, José Lopez García, Jasmine Montes, Dr. Irva Hertz-Picciotto

CENTER UPDATES



Community Engagement Core

Society of Toxicology (SOT) poster presentation

Spearheaded by **CSTAC Co-Chair Marilyn Silva**, the CEC presented an abstract “Community Outreach and Engagement: Building Partnerships to Promote Health” that Marilyn presented at the **Society of Toxicology’s** Annual Meeting in March 2022.

High school field trip

The CEC is building connections with local high school science programs as part of EHSC’s commitment to expanding opportunities in environmental health sciences for Black, Indigenous and

other students of color (see [Anti-Racism Work at EHSC](#) for more). As part of this effort, **Sarina Rodriguez** recently visited Grant High School in Sacramento, California. Sarina met with teachers to learn about the school and its environmental science program, and spoke to several classes about how her interest in environmentalism blossomed into a desire for a career in public health research. [Read about Sarina's journey here](#).

Environmental Exposure Core

Meetings

The Exposure Core gathered with other researchers recently to discuss wildfire research. There was an engaging, free flowing conversation that covered a wide range of topics—from metals to organics to toxicity to modeling. It was exciting to see scientists exchange so many ideas. The group is looking forward to sharing again in the future. [Find out more about the Environmental Exposure Core](#).

The EEC's next meeting will focus on resources at UC Davis that help work with Environmental Justice communities. Once the EEC outlines and shares potential resources with one another, it'll follow-up with those more involved in community-based work. —Debbie Bennett

Let **Debbie Bennett** (dhbennett@ucdavis.edu) know if you're interested in joining either of these discussions.

New project at the tunnel facility

Dr. Peter Havel's pilot project started up at the tunnel research facility in January 2022. It aims to better understand environmental factors related to Type 2 diabetes and is a collaboration with **Dr. Laura Van Winkle**, **Dr. Anthony Wexler** and community partners **Kevin Hamilton** and **Tim Tyner** from the [Central California Asthma Collaborative](#).

As the incidence of Type-2 diabetes rises and current treatment provides limited success in preventing long-term morbidity and mortality, more attention is being focused on prevention, such as avoiding or mitigating environmental exposures such as Traffic Related Air Pollution (TRAP).

Dr. Havel's research team is using a unique rat model of type-2 diabetes developed in his laboratory ("UCD-T2DM rats") to see if TRAP accelerates the development and progression of diabetes. The team is also investigating if there's an increase in lung inflammation and metabolically important tissue like the liver, muscle and adipose, along with endoplasmic reticulum stress and impaired insulin signaling.

New mouse facility

A new facility at the tunnel now allows investigators with mouse models to perform exposures on site.

In the works

Dr. Christoph Vogel is working on a new breast cancer research proposal using a mouse model at the tunnel facility. The project is a collaboration with Dr. Colleen Sweeney from the UC Davis Cancer Center and Dr. Michelle LaMerrill from the UC Davis Department of Environmental Toxicology.

When compared with other types of air pollution, there's a stronger association of breast cancer risk with TRAP and polycyclic aromatic hydrocarbon (PAH) exposures, especially for Black and Asian women living in urban areas. This project's central hypothesis is that real-world exposure to TRAP activates AhR signaling and promotes a pro-tumorigenic microenvironment enabling progressive growth of breast cancer and metastasis.

—*Dr. Deborah Bennett and Dr. Anthony Wexler*

Integrative Health Sciences Facility Core

New B-SAFE collaboration

The **B-SAFE** team—**Dr. Debbie Bennett**, **Dr. Katie Conlon** and **Dr. Tanya Khemet Taiwo**—have been working with Elle Ford, MPH, Director, Maternal Infant Health at the California San Francisco Market March of Dimes about what information and materials to share with expectant parents

(primarily in the Bay Area) regarding how to protect themselves and their families from wildfire smoke.

—Dr. Rebecca Schmidt

Knights Landing pandemic update

The **Knights Landing Environmental Health Project** began in 2016 when grad students **Skye Kelty** and **Alfonso Aranda** won an Idea Pitch Award from the UC Davis (UCD) Environmental Health Sciences Center to study cancer. **[Find out how community members played a role.](#)**

—Dr. Natalia Deeb Sossa and Skye Kelty, PhD candidate

National Institute of Environmental Health Sciences (NIEHS)

President Biden's National Institutes of Health budget included \$100 million for research on climate change and health that would go to NIEHS and be distributed through grants from NIEHS and other NIH institutes or centers.

In anticipation, the NIEHS held a symposium that was broadcast widely, on the research needs for addressing the threats to health from wildfires, floods, hurricanes, drought and heat waves. Although initially supported by both the House and the Senate, in the final negotiations on this year's Budget, Congress eliminated this funding.

—Dr. Irva Hertz-Picciotto

MEDIA HIGHLIGHTS



Our domestic worker documentary "Dignidad" is wrapping up!

There are 300,000 domestic workers who labor as nannies, caregivers and house cleaners in 2 million homes across California. Unlike most other workers, however, they're not protected by health and safety guidelines under CalOSHA.

To highlight the health risks these workers have faced during the pandemic, we're producing a documentary about domestic workers, COVID-19 and SB 321. The film "Dignidad" follows several domestic workers as they build support for legislation to protect themselves and

others who labor as domestic workers.

Filmmaker **Paige Bierma** and producer **Jennifer Biddle** are finishing the film in April and will be reaching out to PBS to air it. EHSC will also be organizing a public screening and discussion with UC Davis researchers, Senator María Elena Durazo and the California Domestic Workers Coalition. Look for details on our website and in social media for updates.

Meanwhile, you can check out this [video clip with Kim Alvarenga](#), the Executive Director of the California Domestic Workers Coalition. Alvarenga and other activists and faith leaders petitioned Governor Newsom at the State Capitol in September last year as workers pressed for passage of SB 321, which called for OSHA protections for domestic workers.

New ÓRALE Blog

ÓRALE's communications manager **Clarisse Céspedes** launched a **new blog** in Spanish and English to give a voice to our community partners in the Central Valley who make ÓRALE so successful. The community-based organizations we work with are long-established, trusted partners among farmworkers and essential in getting people tested and vaccinated.

In the news

- Rebecca Schmidt in [A popular supplement's confusing links with autism development](#), in *Discover Magazine*
- Nayamin Martinez in [California Failed to Protect Outdoor Workers from Wildfire Smoke Under Biden's New OSHA Chief](#), in *KQED*
- Rebecca Schmidt in [How toxic wildfire smoke affects pregnant people](#), in *Environmental Health News*
- Irva Hertz-Picciotto in [Burnout Firefighter trauma rises in the American West](#), in *Reuters*
- Jonathan London in [How Sacramento's mayor cleared way for construction of multibillion-dollar Aggie Square](#), in *The Sacramento Bee*
- Marc Schenker in [For poor farmworkers, there is no escape from heat, high prices of California](#), in the *Los Angeles Times*
- Phoebe Seaton in [As UN tackles twin climate threats, California struggles with them, too](#), in *Cal Matters*
- Christian Sandrock in [What does long COVID feel like?](#), in *Pittsburgh Post-Gazette*

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