

UC Davis Environmental Health Sciences Center Newsletter / December 2020



Change is in the air



November of 2020 will likely go down in history! A national election in which over one-third of ballots cast were by mail, is the first in modern history in which the winner was not declared for several days, and the loser has not conceded nearly a month after the election. Then, eight months into a pandemic that has now taken the lives of over 1.4 million people worldwide, results from trials of three different

vaccines have been released, all indicating strong effectiveness.

Both of these events will have reverberating effects on health. First, we can expect that the change in Administration will impact the interpretation and enforcement of environmental regulations. President-elect Biden has vowed to rejoin the Paris Accord and to propose some form of green new deal. However, we cannot be complacent, as the rate at which the U.S. and other highly developed nations are moving to reduce greenhouse gas emissions is woefully slow and inadequate to the task of limiting the rise in global temperatures. Moreover, several new oil pipelines are moving forward with little opposition from lawmakers, and here in California, fracking, most of it in the Central Valley county of Kern, is not only continuing but is being expanded. Already central

California is home to the worst particulate air pollution in the country, high asthma rates, poor water quality, water shortages, widespread poverty and a large population of Latino immigrants working in low-paying yet essential jobs. Both nationally and in our State, commitments to an environmental health agenda are sorely needed.

Similarly, the pandemic is surging, now at an average of 14,000 new cases and 8,000 new hospitalizations per day. The upward trajectory is expected to continue surging throughout the holidays and into January, as people congregate to celebrate in large numbers, some ignoring all of the public health messaging. Meanwhile, our health systems are being strained to their limits, as the structural racial/ethnic inequities are robbing the lives of Black and brown people. Nationally, the Hispanic population has three times the SARS-CoV-2 infection rate of whites and four times the rate of hospitalizations. Moreover, deaths from COVID in the Latino population account for 43% to 49% of U.S. deaths in age groups 0-24, 25-34, 35-44, and 45-54, while Blacks account for 27% to 30% of deaths in those same age groups, and Native Americans/Alaska Natives, 2.2% to 5.5%. With the hopeful news of vaccines, it is incumbent that those affected the most should receive highest priority for vaccine availability—health care workers, other frontline workers, Latinos, Blacks and Native Americans, as well as older adults. Not just risk for infection, but death rates should enter into the equation of how to prioritize vaccine distribution!

This is, indeed, a time of change. Our EHSC is dedicated to advancing the scientific understanding of how environment affects health, learning what factors influence susceptibility, and translating research results so that policies and community actions can promote environmental justice and move towards elimination of health disparities. In this issue, we highlight some of those activities.

Irva Hertz-Picciotto, PhD

Director, UC Davis Environmental Health Sciences Center

Farewell, Natalie Nardone

Dr. Natalie Nardone, our fearless EHSC Program Manager, is leaving for a new career opportunity! We are sad to see her go, as her speed-of-light efficiency and adaptability (she arrived one week before COVID shelter-in place was enacted) made possible a seamless transition into the new funding period for the Center, and simultaneously, into remote work locations of not only all faculty but also all staff.

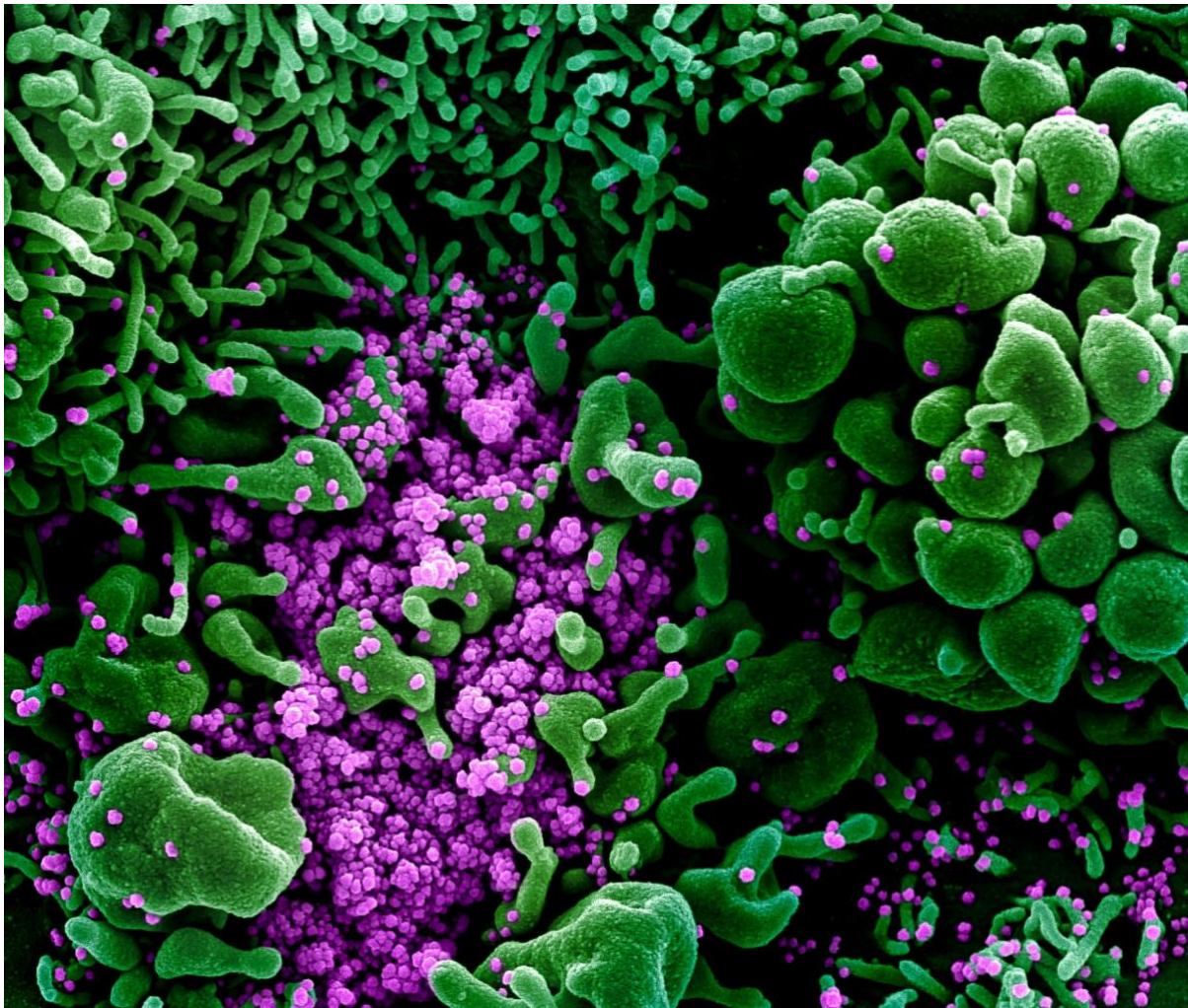
She also helped start up four different initiatives in response to the COVID pandemic, including the \$3.7M grant for the ÓRALE study of strategies to increase testing among Latino populations, for which she accomplished the fastest posting of new positions and hiring for two of them that we've ever seen, along with many other preparations for fieldwork. Her technology savvy-ness was essential to the success of our recent Annual

Retreat. We are grateful for her dedication and will miss her boundless energy, talented management skills, impeccable organization, knowledge, tactfulness and warm smile!

Natalie, thank you so much! We wish you all the best in your new position! — **Irva Hertz-Picciotto, EHSC Director**

Report back: 2020 EHSC Annual Retreat

In October, EHSC held its [5th Annual Retreat](#). This year was full of challenges, not least of which was how best to organize an event with 100 or more people in the middle of a pandemic. While it looked and felt different from years past, the retreat was well attended and received. Of those who completed our evaluation survey, the vast majority (77%) said they were extremely satisfied with our virtual event. While participants gave high marks to all of the sessions, at the top of the charts were the Keynote Address by [Tyrone Hayes](#) and presentations by our [EHS Scholars](#) on their emerging research.



COVID-19 research

ÓRALE: The [ÓRALE Project](#) (Organizaciones para Reducir, Avanzar y Lograr Equidad contra el COVID-19) is our latest Center initiative focused on COVID-19, which will bring COVID testing to underserved, Spanish-speaking communities in the Central Valley. Lots of activities have been going on behind the scenes to get the project up and running as quickly as possible. The team has been hiring new staff, ordering COVID tests, purchasing mobile vans, holding committee meetings and much more!

We're now actively looking for a Project Manager to join the team (see more below). This person will be managing the day-to-day of the project, supervising the mobile van staff and ideally be bilingual, bicultural and have experience working with community groups. If you know of anyone who might be a good fit, please reach out to Kristi Lusso (klusso@ucdavis.edu).

COVID-19 and pregnancy: Rebecca Schmidt and her team have collected survey data on how the pandemic has affected participants of three ongoing studies. This included two pregnancy cohorts: Women who were pregnant during Northern California wildfires ([B-SAFE](#)), and those who had at least one child with autism and were pregnant again ([MARBLES](#)). Schmidt also collected surveys from mothers of children with autism at older ages for a local cohort involved in the national ECHO (Environmental Children's Health Outcomes) Study, and is collaborating on several COVID-19 studies within ECHO.

The MIND Institute's Intellectual Developmental Disorders Research Center funded Schmidt's team to pilot the collection of COVID-19-relevant biospecimens and data from an additional cohort of women delivering in the Sacramento region.

Schmidt is also working with Laura Jelliffe at UCSF who's leading the larger [HOPE COVID-19 Study](#) that's investigating how the coronavirus and pandemic-related stress are affecting pregnant women and infants. This study focuses on under-represented groups and includes a qualitative component. Results from the first 256 women showed that most (58%) reported feeling nervous, anxious or on edge "several days" to "nearly every day;" 82% were worried about not having a support person with them during labor and delivery if they gave birth in the hospital; 65% felt increased stress about losing a job or decrease in family income; 90% felt increased stress about self, baby or someone in family getting infected with COVID-19 over the past few weeks.

Schmidt plans to conduct follow-up surveys for these studies in early 2021, and to analyze biospecimens for immune and other biologic responses to the COVID-19 virus and pandemic-related stress. She hopes to relate these to future child health outcomes.

COVID-19 Survey for Workers: Since the last [COVID-19 Survey for Workers](#) update, we've been collaborating closely with the [CA Domestic Worker Coalition](#) (CDWC) to get the survey out to its members. The organization is currently fielding it to 200 domestic workers across California. We also had a successful first push that generated an initial report for the CDWC to use in its advocacy efforts around [SB 1257](#).

Other organizations we're currently collaborating with include: Graton Day Labor, Street Level Health Project, SEIU 2015, SEIU UHW-West and the AFL-CIO. Please contact Sarina Rodriguez with questions (sverodriguez@ucdavis.edu).

COVID-19 Statewide Agriculture and Farmworker Education Program: The Labor and Workforce Development Agency provided a grant to the [Western Center for Agricultural Health and Safety](#) (WCAHS) for its COVID-19 Statewide Agriculture and Farmworker Education (SAFE) Program. The 1-year contract includes \$1.9 million in funding to develop and implement the SAFE Program. WCAHS also created a [COVID-19 Resources for Agriculture](#) page on its website, which community partners loved. For more information, please contact Kent Pinkerton (kepinkerton@ucdavis.edu).



Center members on UC Davis Live! wildfire program

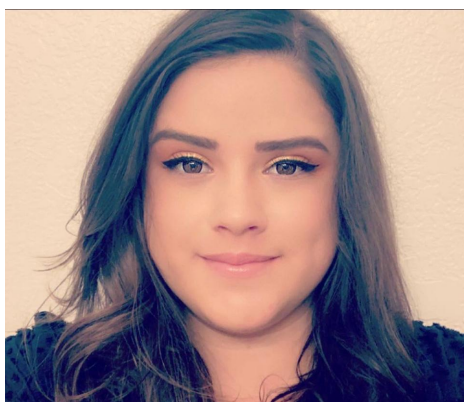
[Soterios Johnson](#) hosted a [UC Davis Live!](#) event on wildfires and health with **Drs. Rebecca**

Schmidt and **Irva Hertz-Picciotto**. The researchers discussed the physical and mental health impacts wildfires have had on Northern California communities. Schmidt's [BSAFE Study](#) is investigating the impact wildfires are having on pregnant women and their babies, and Hertz-Picciotto's [WHAT-NOW Study](#) is doing the same with a non-pregnant cohort. Schmidt said stress and anxiety were the most prominent symptoms for moms-to-be, and Hertz-Picciotto said her research also showed survivors' biggest needs were around mental health support, even two years out.

The interview took place simultaneously across UC Davis's Facebook, Twitter and YouTube channels. [Watch it here.](#)

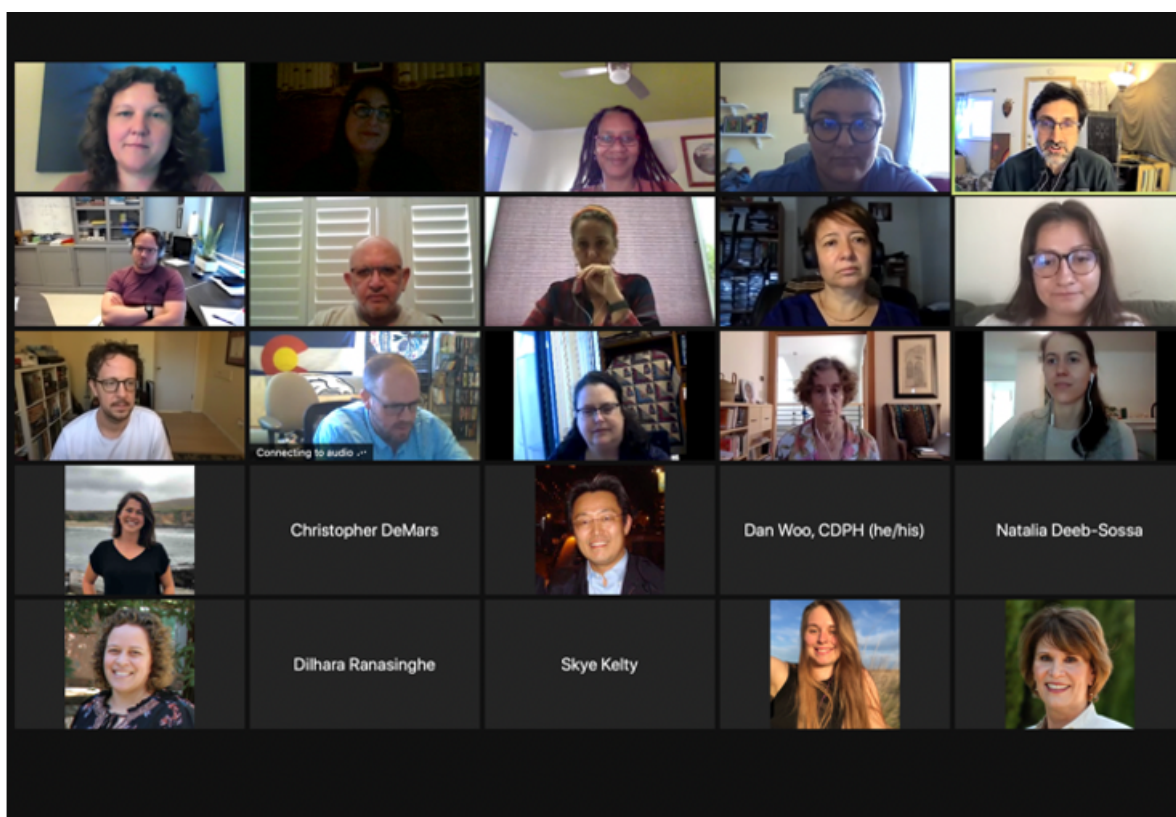
COVID-19: Profiles from the frontlines of the pandemic

To help promote EHSC's [COVID-19 Survey for Workers](#), we're interviewing people we know or have met online through the hundreds of COVID-19 Facebook groups we belong to.



In our interview with Allison Yañez, the hairstylist talks about what it's like going to work every day, how she's adapting to her new work situation, whether or not she feels safe on the job and what her clients say about the impact the pandemic has had on their lives. [Read Allison Yañez's interview here.](#)

If there's someone you know who may want to participate in this project, please contact Jennifer Biddle (jsbiddle@ucdavis.edu).



Updates from our cores

Community Engagement Core (CEC)

Annual 1:1 consults with prospective pilot project grantees: Each Fall, EHSC's Community Engagement Core (CEC) meets with its [Community Stakeholder Advisory Committee](#), then holds individual consultations with researchers applying for EHSC-funded pilot projects to help them establish a strong community engagement component in their proposals. Through this meeting with our community partners and one-on-one sessions with CEC staff, researchers talk through their ideas and challenges conducting outreach and engagement in their pilots and make connections with non-university

partners. This year, we had 11 potential pilot project grantees participate in our 1:1 consults.

The pilot proposal requirement to include community engagement can be difficult for some researchers, particularly those doing primarily lab-based work. The CEC staff loves the challenge of thinking through the ways these projects can start to work beyond the walls of the university. For some of the projects this year, we were able to find a community partner. For others, we discussed ways researchers could use their pilot to learn more about the population their work might impact. We look forward to supporting some of these projects in the year ahead. — **Aubrey Thompson, Program Manager, CEC**

EHSC Anti-Racism Praxis: Over the second half of this year, the CEC has been working on an anti-racism praxis proposal for EHSC. The national conversation around race, institutional racism and police brutality inspired this work, which we hope will help everyone understand how our Center can do better in combating racism in academia. The CEC formally unveiled its proposal at November's Center Leadership Group (CLG) meeting to discuss and get input from all of EHSC's Cores.

The proposal is broken down into a series of high-level priorities and a 3-part strategic plan. It creates action items for the Center to incorporate, including hiring more researchers and faculty who are Black, Indigenous or People of Color, starting a speaker series with topics on diversity, equity and inclusion, and creating a mentorship program for undergraduate students.

The CLG responded positively to our proposal. A CLG working group will continue to meet regularly with the CEC. In the meantime, the CEC has already created a public [Anti-Racism Reading List](#) and a [Mendeley public group](#) page for anyone interested. — **Sarina Rodriguez, Junior Specialist CEC**

Integrated Health Sciences Facility Core

The Pinkerton Lab gave a series of presentations over the month of October:

- [Health effects of exposure to particulate matter: A community, student and laboratory-based study](#), for the Allegheny-Erie chapter of the Society of Toxicology
- [Climate change, wildfires and agricultural worker health](#), a webinar series on adaptive food systems for the UC Davis Climate Adaptation Research Center and UC Davis World Food Center
- [Wildfire Smoke and Health](#), a webinar for the Tahoe Environmental Research Center

Recently published

Evelyn SMD, Vogel CFA, Bein KJ, Lara B, Laing EA, Abarca EA, Zhang Q, Li L, Li J, Nguyen TB, Pinkerton KE. [Differential inflammatory potential of particulate matter](#)

[\(PM\) size fractions from Imperial Valley, CA](#). Atmospheric Environment, Volume 244, 1 January 2021, 117992

Barkoski JM, Philippat C, Tancredi D, **Schmidt RJ**, Ozonoff S, Barr DB, Elms W, **Bennett D**, **Hertz-Picciotto I**. [In utero pyrethroid pesticide exposure in relation to autism spectrum disorder \(ASD\) and other neurodevelopmental outcomes at 3 years in the MARBLES longitudinal cohort](#). Environ Research. 2020 Nov 18:110495.

Zhu Y, Mordaunt CE, Durbin-Johnson BP, Caudill MA, Malysheva OV, Miller JW, Green R, James SJ, Melnyk SB, Fallin MD, **Hertz-Picciotto I**, **Schmidt RJ**, **LaSalle JM**. [Expression Changes in Epigenetic Gene Pathways Associated With One-Carbon Nutritional Metabolites in Maternal Blood From Pregnancies Resulting in Autism and Non-Typical Neurodevelopment](#). Autism research: official journal of the International Society for Autism Research. 2020 Nov 07.

Dahlem C, Kado SY, He Y, **Bein K**, Wu D, Haarmann-Stemmann T, Kado NY, **Vogel CFA**. [AHR Signaling Interacting with Nutritional Factors Regulating the Expression of Markers in Vascular Inflammation and Atherogenesis](#). International journal of molecular sciences. 2020 Nov 05; 21 (21)

Tal T, Yaghoobi B, **Lein PJ**. [Translational Toxicology in Zebrafish](#). Current opinion in toxicology. 2020 Oct-Dec; 23-24 :56-66. Oct-Dec 2020;23-24:56-66.

Shin HM, Dhar U, Calafat AM, Nguyen V, **Schmidt RJ**, **Hertz-Picciotto I**. [Temporal Trends of Exposure to Phthalates and Phthalate Alternatives in California Pregnant Women during 2007-2013: Comparison with Other Populations](#). Environmental Science & Technology. 2020 Oct 20;54(20):13157-13166.

Shin HM, **Bennett DH**, Calafat AM, Tancredi D, **Hertz-Picciotto I**. [Modeled prenatal exposure to per- and polyfluoroalkyl substances in association with child autism spectrum disorder: A case-control study](#). Environ Research. 2020 Jul;186:109514.

Announcements

We're hiring

Our Center is expanding and staffing up as we take on new research. Please help by circulating information throughout your networks about these job postings:

- Program Manager, UC Davis Environmental Health Sciences Center
- [Lab Assistant II](#) (runs the tests)
- [Lab Research Supervisor 2](#) (manages the entire project—despite the title, there is no laboratory component in this position)

Please contact our Human Resources representative Kristi Lusso for details and the link to the Program Manager opening (klusso@ucdavis.edu).

Rebecca Schmidt to speak on COVID-19 research

Rebecca Schmidt will be presenting "Towards Understanding of COVID-19 Impacts on Pregnancy, Mothers, and Children" at the [COVID-19 Research Town Hall](#) on **December 11, 10:30-11:30 am**. This town hall is for UC Davis researchers only, so be sure to sign up early to get the password protected Zoom link.

Dr. Lisa Miller elected AAAS Fellow

The American Association for the Advancement of Science (AAAS) announced the election of its [2020 Fellows](#) which included our very own Dr. Lisa Miller. Congratulations, Dr. Miller!



In the news

- NPR's Morning Edition interviewed **Irva Hertz-Picciotto** and **Rebecca Schmidt** about wildfires in [California Camp Fire Survivors Face The Horror All Over Again In 2020](#)
- Nathan Rott from Boston PBS affiliate WGBH interviewed **Rebecca Schmidt** about wildfires in [Smokey skies are the new normal, are they making us sick?](#)
- Axios Today interviewed **Nicholas Kenyon** about COVID-19 in [Biden's transition talks](#)

- Kaiser Health News interviewed **Anthony Wexler** in [Wildfires provide another reason to mask up](#)

A good read

- The National Domestic Workers Alliance surveyed 20,000 Spanish-speaking cleaners, nannies and homecare workers weekly via social media about their workplace conditions over the first six months of the pandemic. Read the report here: [6 months in crisis: The impact of COVID-19 on domestic workers](#).
- This editorial highlights the potential links between exposure to air pollution, COVID-19 severity and disproportionate impacts COVID-19 is having on inner-city racial minorities. Brandt EB, Beck AF, Mersha TB. [Air pollution, racial disparities, and COVID-19 mortality](#). *J Allergy Clin Immunol*. 2020;146(1):61-63. doi:10.1016/j.jaci.2020.04.035
- This study found urban air pollution, especially NO₂, may make people more susceptible to dying from COVID-19 and showed a reduction in air pollution could have saved 14,000 Americans from dying of COVID-19. Shi L, Zhao J, Liu P, Sarnat JA, Gao S, Schwartz J, Liu Y, Ebelt ST, Scovronick N, Chang HH. [Urban air pollution may enhance COVID-19 case-fatality and mortality rates in the United States](#). *Cell: Innovation*. Volume 1, Issue 3, 100047, November 25, 2020.



Happy Holidays!

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!

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