



Pacific Northwest Center for Translational Environmental Health Research

WHO WE ARE

The Center is a group of scientists across the Pacific Northwest with a deep interest in environmental health. Our interests include air and water pollution, pesticides, impacts from wildfires, and more.

We work with communities and partners in the Pacific Northwest to co-develop research and resources that address pressing environmental health issues and inform methods for reducing risk from these exposures.

Center researchers and partners are supported by five research cores.

Community Engagement Core

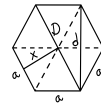


Facilitate collaboration with partners to address environmental public health questions.

Chemical Exposure Core



Provide passive sampling devices and analytic services for measuring environmental toxicants.



Translational Research Support Core

Provide consultations, services, and resources to establish translational team collaborations.

Zebrafish Biomedical Research



Provide support for use of aquatic models in environmental health research.

Pilot Projects Program

Center members can apply for pilot grants to support new and innovative research in environmental health.

Center Membership

We welcome new members to our Center. Why become a member?

- Increased research visibility
- Interdisciplinary collaborations
- Access to facility research cores
- Support for community-engaged research
- Administrative research support
- Access to Pilot Project funding

Membership is open to researchers in the Pacific Northwest. As a Center member, we ask you to:

- Create a research expertise profile in the Center's Discovery Index
- Participate in Center-sponsored meetings, retreats, or seminars
- Conduct research relevant to environmental health, or provide complementary expertise
- Utilize a facility core and/or provide expertise to a facility core
- Cite the Center grant in publications when appropriate

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Oregon State
University

Translational Research Support Core

The TRSC provides connections and resources to facilitate research translation and establish team science-based collaboration to transform the way we perform environmental health research across an enhanced definition of NIH-defined T0-T4 translation.

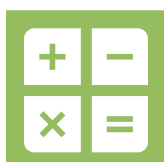
Services



- Human subject research support
- Regulatory compliance (IRB, FDA)
 - Clinical trial planning, recruitment & retention, testing procedures, sample collection
 - Clinical Research Nurse Coordinator



- Bioinformatics support:
- Study design
 - Data analysis
 - Best practices



- Biostatistics support:
- Study design
 - Grant proposal design, data analysis, results interpretation
 - Publication assistance
 - Customized statistical models



Request more information about services and fees here:

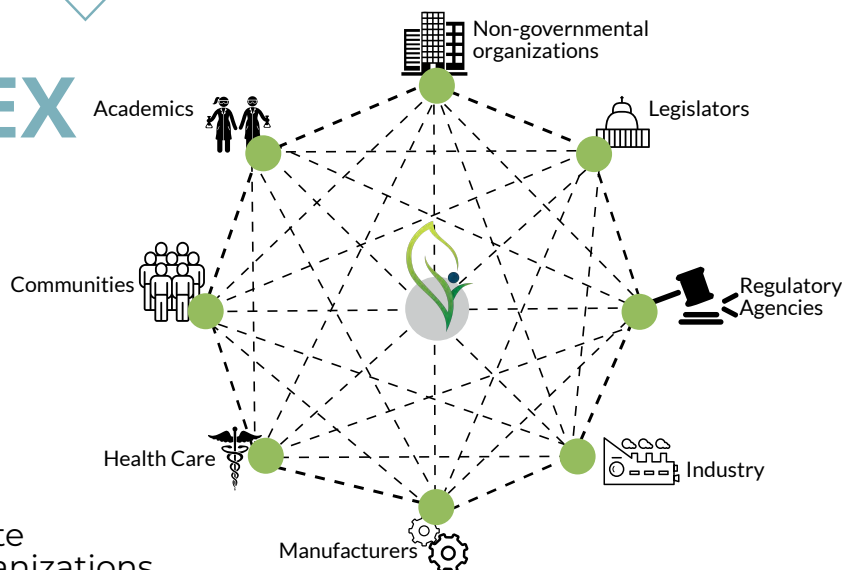
- <https://beav.es/5UG>

DISCOVERY INDEX

The Discovery Index is a searchable database that will be utilized to facilitate connections among researchers and partners in the PNW on a broad range of environmental health topics.

BUILDING CAPACITY, BUILDING COLLABORATIONS

The Discovery Index is designed to facilitate connections between individuals and organizations with shared interests in environmental health.



The Index captures expertise, resources, and existing partnerships.

Through the Index, participants can list their expertise and resources to initiate collaborations and identify relevant environmental health topics.



Find & Share Resources



Conduct Research



Facilitate Connections



<https://ehsc.oregonstate.edu/trsc>

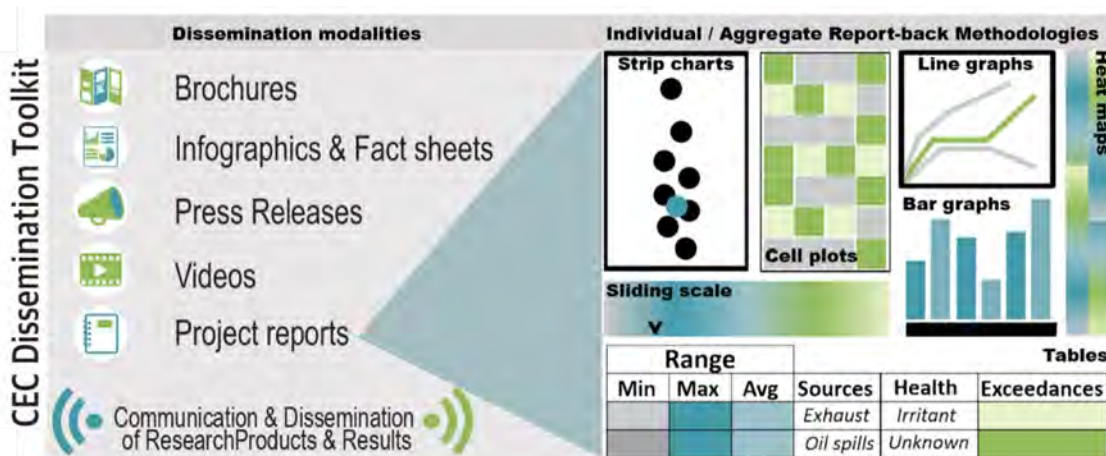
Emily Ho, TRSC Core Director
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Community Engagement Core

The Community Engagement Core facilitates collaborations between communities and researchers in the Pacific Northwest. The CEC collaborates with the Oregon Clinical & Translational Research Institute (OCTRI) Research Liaisons and the Oregon State University Extension Service to identify environmental health concerns throughout the Pacific Northwest.

Services

- Connect with communities
- Return of data
- Project evaluation
- Community-engaged research methodologies



Community Engagement

- Investigator consultations
- Community Engagement Studios



Research Translation

- Video
- Infographics
- Study websites
- Interactive elements



Research Dissemination

- Return of data to study participants
- Aggregate data
 - Individual results
 - Environmental health literacy



Evaluation

Evaluation services available through partnership with OCTRI

Fee Book

Contact the CEC Director for a consultation and to learn about services available as fee-for-service.



<https://ehsc.oregonstate.edu/outreach>

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Chemical Exposure Facility Core

CXC is a state-of-the-art facility specializing in environmental sampling. The core offers passive sampling devices (PSD) and analytical services for PSD extracts, enabling measurement of concentrations of environmental toxins in personal exposures, air, water, sediments, and soils.

Services: Chemical Methods



Endocrine disruptors mimic normal hormones. They can be found in water and food.



Caffeine is an example of **pharmaceutical chemicals**.



We look at household and commercial **pesticides**.



Personal care products include perfume, lotion and cosmetics.



Polycyclic aromatic hydrocarbons are a common type of air pollution produced by burning.



Dioxins & furans take a very long time to break down. They are natural and manmade.



Flame retardants can be used in furniture, making the furniture harder to burn.



Polychlorinated biphenyls (PCBs) are banned but can still be found in fish and toxic waste.



Industrial chemicals can be found in plastic.

Services: Sampling Technology



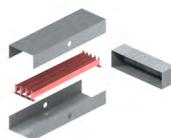
Silicone wristband



Military style 'dog tag'



Animal tags



Air sampler



Water sampler



Sediment sampler

Fee Book

The Core has many services available as fee-for-service.

1 Feasibility meeting with Core Director

2 Select fees

- Project development & support
- Passive sampling devices
- PSD extractions
- Analytic methods
- Sample storage



Request more information about services and fees here:

- <https://beav.es/5Uq>



<https://ehsc.oregonstate.edu/cxc>

Kim Anderson, CXC Director
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Pilot Projects Core

Pilot project grants support new and innovative research in environmental health. These grants provide short-term investments to Center members. These funds can be used to collect preliminary research data, access Core facilities and services, and foster collaborative environmental health science. The program seeks to foster collaborative science, increase access to Core facilities and services, and promote relationships with communities and partners.



There are three mechanisms to support research:

- Funding amount: \$30,000 + \$10,00 for Core Services
- Max budget: \$40,000
- Project duration: 9 months

Vanguard Award - Investigator Initiated

Applications to improve understanding of the cause and/or prevention of environmentally-mediated diseases, test the effectiveness of prevention and intervention strategies in real world settings, or to seed new transdisciplinary collaborations.

Strategic Initiative Award - Community-engaged

Address specific EHS needs of communities, improve coordination between gathering and disseminating EHS knowledge, promote shared research resources, or increase bi-directional communication with communities and partners.

Foundation Award - By Director Nomination Only

Attract and support new investigators to increase EHS research capacity in the Center



<https://ehsc.oregonstate.edu/pilot>

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Zebrafish Biomedical Research Core

The Zebrafish Biomedical Models Core is unique worldwide as a facility equipped to conduct biomedical research using zebrafish as aquatic research models. It primarily consists of a self-contained fish hatchery and high throughput screening facility for toxicity and behavioral studies.

Services

The Core has multiple services and capabilities to support your research. To learn more, contact us.



Gene x Environment Interactions



Exposure assays



Special and defined diets; Microbiome interrogation



Cognitive and behavioral assays



High throughput bioactivity screening



Robotic embryo production & handling



Epigenetic & transgenerational assays



Fee Book

The Core has many services available as fee-for-service.

1 Feasibility meeting with Core Directors

2 Select fees

- ACUP assistance and/or training
- Per diem fish care
- Chemical testing
- Diet preparation
- Consultations
- Project liaison



Request more information about services and fees here:

- <https://beav.es/5Ui>



<https://ehsc.oregonstate.edu/ZBR>

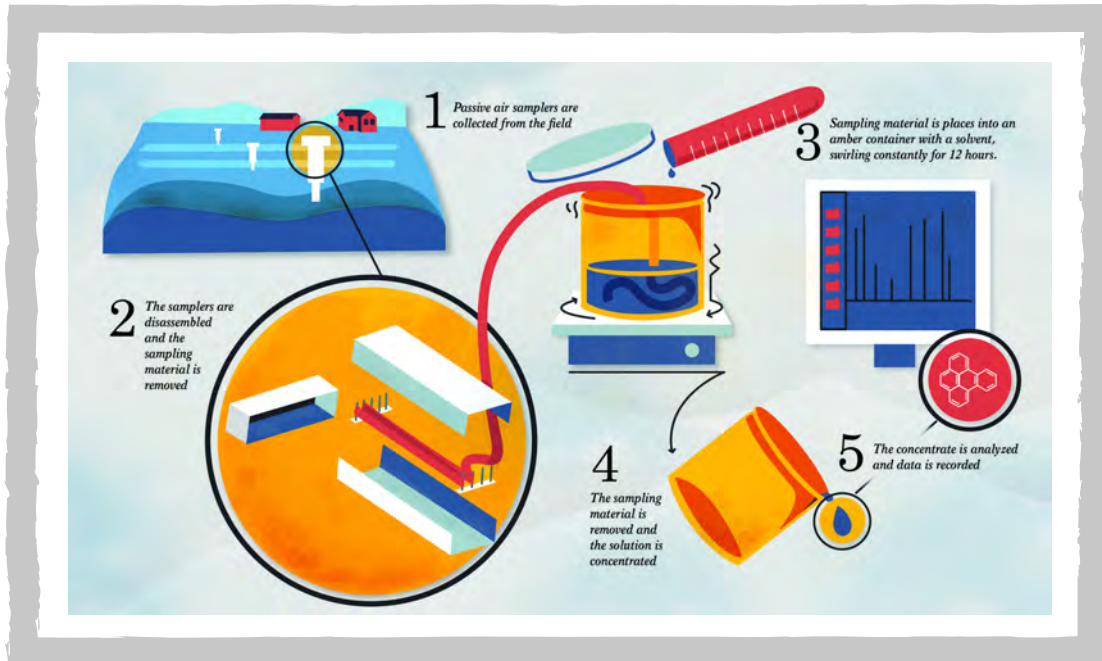
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ENVIRONMENTAL PASSIVE SAMPLING DEVICES

The passive sampling devices use the basic properties of chemicals to act like a chemical sponge and "absorb" chemicals in the environment.

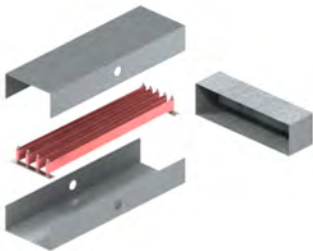
i How it works



i Our Environmental Samplers

Air

These samplers measure chemicals in the air. The metal cage protects from rain and animals.



▶ Air Passive Sampling Device. https://youtu.be/M_j3HEbxIAY

Water

These samplers are suspended in the water. The metal cage protects against small creatures and dirt.



▶ Water Passive Sampling Device. <https://youtu.be/M08r3Ss5VVg>

Sediment-Pore Water

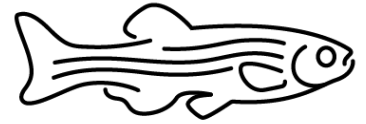
This sampler is buried underwater. The metal cage is designed to be pressed deep into the sediment.



▶ Sediment-Pore Water Passive Sampling Device. <https://youtu.be/M08r3Ss5VVg>

The Zebrafish as a Research Tool

Zebrafish as a research model



- There are thousands of chemicals in our environment.
- We are always exposed to mixtures of chemicals.

- Humans and zebrafish share >70% similar genes.
- 84% of human disease genes are also in zebrafish.

- Humans and zebrafish have many of the same organs.
- Zebrafish develop very quickly – from a single cell to swimming fish in 5 days.

Zebrafish as a chemical screening tool

- Zebrafish are small and easy to use, allowing us to rapidly assess thousands of chemicals.
- Some chemicals can affect DNA and cell signaling to change the way animals develop.
- Changes in zebrafish development identifies chemicals that may be hazardous to humans. We measure dozens of effects in these chemical screens.

Can Evaluate

- Which chemicals may pose a higher risk than others to human health
- Effects of individual and real-world mixtures of chemicals.

Cannot Evaluate

- The actual effect of a chemical on the human body
- The precise amount of a chemical that may cause a harmful effect in humans