

PERC-med Overview: Pesticide Analytical and Response Center May 20, 2020

Diana R. Simmes, MPH
University of California Davis
Oregon State University



PERC-med Funding (2018-2023)

U.S. EPA Office Of Pesticide Programs

Cooperative Agreement #X8-83935901

University of California Davis in collaboration
with Oregon State University

PERC-med Aim

To help health care providers prevent, recognize and treat pesticide-related health conditions through education, resources and technical assistance.



PERC-med Advisory Board



- B.S. Microbiology Oregon State University; DVM Washington State University; PhD Toxicology OSU
- 18 years as Director, Toxicology Information Center, Oregon Institute of Occupational Health Sciences at Oregon Health & Science University
- Co-investigator at the National Pesticide Information Center
- Consultant to the Oregon Department of Agriculture's Pesticide Analytical and Response Center
- 10 years' experience in veterinary clinical and emergency medical practice

John
Forsyth

Advisory
Board
Member

Occupational Health Services, Woodland Healthcare

John.Forsyth@DignityHealth.org



- Practicing physician, Occupational Medicine, Woodland Healthcare, 1995 to present. Practice includes evaluating and treating pesticide exposures.
- California Medical Supervisor Program for pesticide surveillance 1995 to present
- Physician, US Navy 1986 to 1995; duties included CAW-17 flight surgeon, Puget Sound Naval Shipyard branch clinic Officer in Charge
- UCSF Occupational Medicine Residency
- St. Louis University Medical School

Charlotte
Halverson

Advisory
Board
Member

Agrisafe Network

chalverson@agrisafe.org



- Clinical Director, AgriSafe Network
- Graduate of Agricultural Medicine Core Course – University of Iowa
- BSN (1986), COHN-S (1998)
- Served 17 years as the Clinical Services manager of the National Education Center for Agricultural Safety
- Occupational Health Services nursing – Mercy Medical Center, Dubuque, IA – 5 years
- Served 10 years as the manager of the Rural Outreach services for Mercy Medical Center in Dubuque IA – serving eastern Iowa, northwest IL, and southwest WI

PERC-med Advisory Board cont'



- B.S. Biochemistry, PhD Entomology
- Professor and Extension Specialist, Department of Environmental and Molecular Toxicology, Oregon State University
- Director, National Pesticide Information Center
- Former Chair AGRO Division of the American Chemical Society, President Toxicology Education Foundation, and collaborator Extension Toxicology Network (ExTOXnet)
- 40+ years working with producers, state governments, NGOs, industry, federal agencies, and international organizations concerned about the adverse impacts of chemicals.

Catherine
Karr

Advisory
Board
Member

Department of Pediatrics/Department of Environmental &
Occupational Health Sciences, University of Washington

ckarr@uw.edu



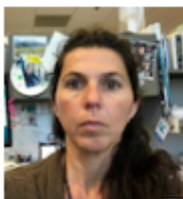
- Professor, jointly appointed in the Department of Pediatrics and the Department of Environmental & Occupational Health Sciences at the University of Washington. Adjunct Professor of Epidemiology
- Primary Care Pediatrician, UW Pediatric Care Center – Roosevelt Clinic
- Internal Advisor, Pacific Northwest Center for Agricultural Safety and Health, University of Washington
- Director, NW Pediatric Environmental Health Specialty Unit, University of Washington
- Research focuses on environmental contaminant exposures in pregnancy and childhood and impacts on respiratory and neurodevelopmental health
- Trained as MD (Univ WA), PHD (Epidemiology, Univ WA), MS (Toxicology, Univ WA)

Ouahiba
Laribi

Advisory
Board
Member

Office of Environmental Health Hazard Assessment

Ouahiba.Laribi@oehha.ca.gov



- PhD in cell and molecular biology, University François Rabelais of Tours, France (1998-2001)
- MPH in Environmental Health Hazard Assessment, French National School of Public Health (EHESP)
- 10 years of experience working as a scientist in different academic organizations in the US, Spain, France and Switzerland
- Since 2002, toxicologist at the Office of Environmental Health Hazard Assessment (OEHA) primarily working on the Medical Supervision Program and Outreach on Pesticides Related Illnesses.
- OEHA's Environmental Justice coordinator.

PERC-med Advisory Board cont'

Diane
Rohlman

Advisory
Board
Member

Occupational & Environmental Health, University of Iowa

diane-rohman@uiowa.edu



- Associate professor in the Department of Occupational & Environmental Health in the University of Iowa's College of Public Health where she holds the Endowed Chair in Rural Safety and Health.
- Director of the University of Iowa's Healthier Workforce Center and Agricultural Safety and Health Training Program in the University of Iowa's Heartland Center for Occupational Health and Safety. Research focuses on the health effects of occupational and environmental exposures, with emphasis on the increased workplace risks faced by younger employees.
- Studies have examined agricultural workers in the United States and around the world, including research on the effects of pesticide exposure on adolescents and their developing nervous system.
- Received masters and doctorate in experimental psychology from Bowling Green State University in Ohio.

Marc
Schenker

Advisory
Board
Member

Public Health Sciences and Medicine, University of California Davis

mbschenker@ucdavis.edu



- Distinguished Professor Emeritus of Public Health Sciences and Medicine at the UC Davis School of Medicine.
- Over 30 years of experience in medicine and public health research, teaching and public service.
- Founding director of the Davis Center for Occupational and Environmental Health, the Western Center for Agricultural Health and Safety, and the Migration and Health Research Center.
- Specialty is occupational and environmental disease, with a focus on respiratory and reproductive health.
- Conducts epidemiologic research and public policy advocacy on the health of global migrant populations with a particular focus on farmworkers and occupational disease.
- Editor of the book, "Migration and Health: Research Methods Handbook."

Recognition and Management of Pesticide Poisonings (p.4)

“Like many illnesses linked to environmental exposures, pesticide poisonings remain commonly under-diagnosed due in large part to barriers in seeking care and diagnosis of pesticide poisonings. ”

A Major Challenge For Pesticide Medical Education

The magnitude of pesticide use, and the settings of pesticide application, are under-recognized by many medical care providers and public health professionals.

Pesticide: Not Routinely Included in Medical Training

75% medical schools require only ~7 hours of environmental health content over 4 years.

What Does PERC-med Do?

- Develops educational materials
- Collaborates with health care provider networks
- Curates resources
- Provides webinars and technical assistance
- Promotes existing resources to amplify reach



Medical Evaluations Prior to Using a Respirator: What medical professionals need to know

Every employee who will be required to use a respirator based on **pesticide product label** information must receive a **medical evaluation** by a physician or licensed healthcare professional** (examiner) before using the respirator (see [OSHA Respiratory Protection Standard](#)). Such an evaluation must consider the employee's health, their specific job duties, the respirator type, and workplace conditions.

Why is a medical evaluation needed before employees use a respirator at work?


It is more difficult to breathe through a respirator than in ambient air. The additional physiological burden may be significant for people with certain medical conditions. As the examiner, your aim is to identify any health conditions that could place the employee at risk by using a respirator, and whether the employee is medically able to wear the

How do the employer-provided answers come into play?

The employer must provide **information** about how the respirator is to be used at work. Examples include the type and weight of the respirator and filters, length and frequency of respirator use, personal protective equipment worn during use, workplace exposures, expected exertion levels during use, and working conditions (such as heat/humidity). The employer must also provide you with the [OSHA Respiratory Protection Standard](#).

What are the potential outcomes of the medical evaluation?

Additional testing and/or follow-up evaluations may be necessary to make a final clearance determination. The need for re-evaluation, or the length of time between



Paraquat Poisoning: One Sip Can Kill

PARAQUAT USE PROFILE

Paraquat is used for weed control and defoliation and is one of the most widely used herbicides in the world. Paraquat is classified by the U.S. Environmental Protection Agency (EPA) as a Restricted Use Pesticide due to its high toxicity. There are no homeowner uses and no products registered for application in residential areas.

HOW PARAQUAT WORKS

The extent of poisoning depends on the amount, route, and duration of exposure as well as the person's health status. After ingestion, it is distributed throughout the body and causes toxic chemical reactions, primarily in the lungs, liver, and kidneys. It damages the lining of the mouth,

IMMEDIATE symptoms after ingestion of LARGE amounts:

- Pain and swelling of the mouth and throat likely
- Followed by gastrointestinal symptoms (e.g. nausea, vomiting, abdominal pain, diarrhea)
- Severe GI symptoms may result in dehydration, electrolyte abnormalities, and low blood pressure

In general, within a FEW hours to a FEW days:

- Acute kidney failure
- Confusion
- Coma

**Helping the
medical
community
prevent,
recognize,
and treat
pesticide-
related
illnesses
and injuries.**



PERC-med

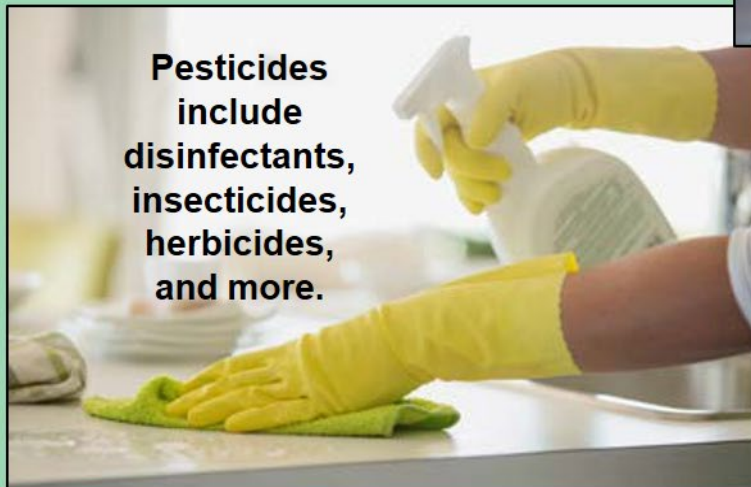
Pesticide Educational Resources
Collaborative - Medical

pesticideresources.org/med

**Contact: Diana Simmes, MPH
drsimmes@ucdavis.edu**

The Pesticide Educational Resources Collaborative - Medical is a cooperative agreement (agreement #X-83935901) between the U.S. EPA's Office of Pesticide Programs and University of California Davis Extension, in collaboration with Oregon State University.

- **Educational resources**
- **Training**
- **Technical assistance**



Pesticides include disinfectants, insecticides, herbicides, and more.

pesticideresources.org/med
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drsimmes@ucdavis.edu



PERC-med

Pesticide Educational Resources
Collaborative - Medical

How Does PERC-med Do That?

- Adheres to operating policies
- Develops solicitations for project ideas
- Conducts key informant interviews
- Navigates stakeholder networks
- Makes the case for “grape jelly”





PERC-med

Pesticide Educational Resources
Collaborative - Medical

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COVID-19 Resources

[COVID-19](#)[PERC-med Collaborations](#)[RMPP](#)[Events](#)[Reporting Pesticide
Exposures](#)

esticideresources.org/stage/med/index.html#

What does PERC-med Do?

Solicitations

- Project Ideas 2020
- Up Next: Marketing Consultant

2020 Call for Project Ideas: Process

- Distributed via networks
- Submissions (Dec 2019 - Jan 2020)
- Provided technical assistance
- Proposals scored by Advisory Board
- Assessed feasibility, timeline and budget

2020 Call for Project Ideas: Top Scores

- Add content to CA OEHHA course to serve a national audience of HCPs (CME)
- Redesign “Identifying, Managing, and Preventing Pesticide Poisoning in Children: Basic Guidelines for Clinicians”

2020 Call for Project Ideas: Top Scores cont'

- Add RMPP individual chapter links on website
- Partner with ATSDR to update and determine CME accreditation for pesticide-specific case studies

PERC-med Recent Activities

- AgriSafe Network
 - Nurse Scholar Program (CNE)
- American Academy of Family Physicians
 - Member Interest Groups
- American Academy of Pediatrics
 - Exploring Pedialink Course Options

PERC-med Recent Activities cont'

- Association of Public Health Nurses
 - National Conference
 - Residency Toolkit
- University of Iowa Graduate PH Course
 - Inserted Pesticide Case Studies

PERC-med Engaging Primary Care Stakeholders

- Northwest Regional Primary Care Association
 - [article](#) on antimicrobial pesticides
- Community Health Association of Mountain Plains States
 - List serv article for clinicians and QA

PERC-med Recent Collaborations

- California OEHHA
 - course insertion proposed
- North Carolina Agromedicine Institute
 - help obtain CME and promote course
- Pediatric Environmental Health Specialty Unit
 - redesign underway (Dr. Catherine Karr)

PLEASE HOLD CONFIDENTIAL

Links for PERC-med Staged Web Pages

Link to new home page and pesticide [reporting map](#).

Link to the associated searchable [data table](#).

Revamped PERC-med Website

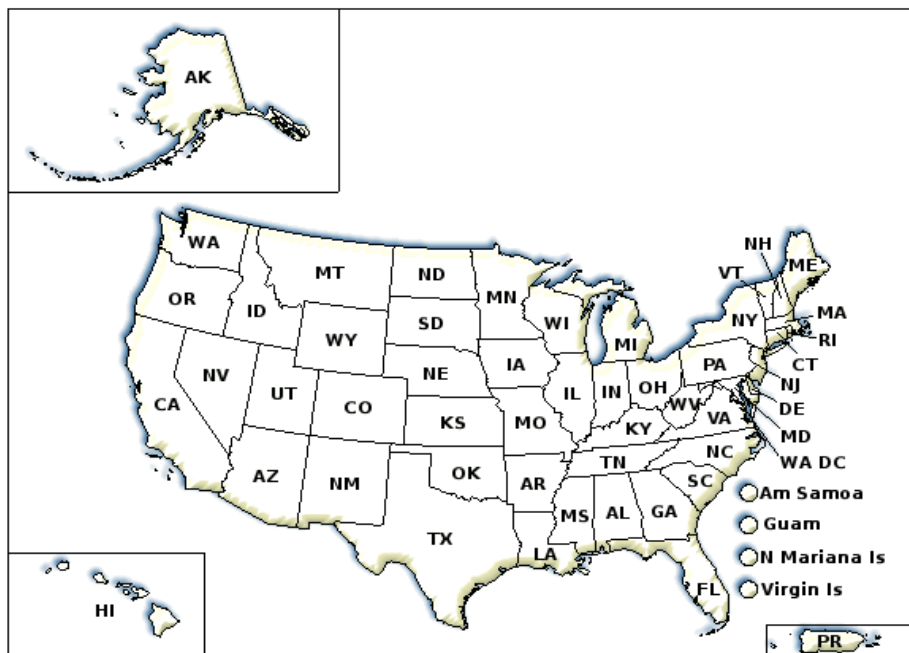


Reporting Requirements Map Development

- Reviewed existing resources on exposure reporting requirements
- Obtained current state-level information
- Performed QA on all
- Stored data on OSU-maintained server
- QA checks to be made quarterly for link integrity

PERC-med Website

Click/tap to find a state's [pesticide exposure reporting requirements](#):



U.S. States:

[AK](#) | [AL](#) | [AR](#) | [AZ](#) | [CA](#) | [CO](#) | [CT](#) | [DE](#) | [FL](#) | [GA](#) | [HI](#) | [IA](#) | [ID](#) | [IL](#) | [IN](#) | [KS](#) | [KY](#) | [LA](#) | [MA](#) | [MD](#) | [ME](#) | [MI](#) | [MN](#) | [MO](#) | [MS](#) | [MT](#) | [NC](#) | [ND](#) | [NE](#) | [NH](#) | [NJ](#) | [NM](#) | [NV](#) | [NY](#) | [OH](#) | [OK](#) | [OR](#) | [PA](#) | [RI](#) | [SC](#) | [SD](#) | [TN](#) | [TX](#) | [UT](#) | [VA](#) | [VT](#) | [WA](#) | [WI](#) | [WV](#) | [WY](#) | [Washington D.C.](#) |

U.S. Territories:

[Puerto Rico](#) | [American Samoa](#) | [Guam](#) | [Northern Mariana Islands](#) | [Virgin Islands](#)

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Data Table of Reporting Requirements By State: Searchable and Sortable

Reporting Pesticide Exposures

Some states require health care providers and laboratories to report pesticide or chemical exposures. If your state does not require reporting, consider contacting your [State Pesticide Regulatory Agency](#) or the [National Pesticide Information Center](#).

State Pesticide Exposure Reporting:

Search:

State:	Reporting Requirements:	Report To:
		Reporting web site
		Alaska Department of Health and Social Services Department of Public Health, Section of Epidemiology
Alaska	Is reporting mandatory? Yes Who must report? Physicians, Other Health Professionals Timeframe to report exposure: N/A	907-269-8000 (exposure reporting) 800-478-0084 (after hours) Reporting web site Reporting Forms
Arizona	Is reporting mandatory? Yes Who must report? Physicians, Hospitals, Other Health Professionals Timeframe to report exposure: 5 working days What to report: Any Pesticide-Related Exposure	Arizona Department of Health Services Office of Environmental Health 800-222-1222 (exposure reporting) 602-364-3118 Reporting web site

Pesticide Reporting Requirements Vary by U.S. State / Territory

	<u>N</u>	<u>%</u>
Mandatory	32	62%
Optional	9	17%
No	11	21%

PERC-med Resources

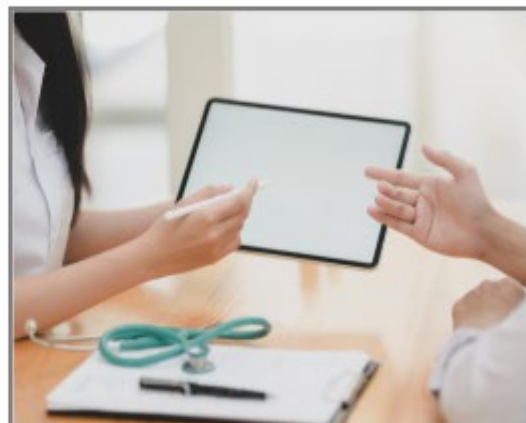
Below you will find a list of accessible online resources, websites, and courses focused on pesticides and human health issues.



PERC-med Publications



Pesticide Exposure Assessment



Training



Questions Comments Ideas

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