



The Pacific Northwest Agricultural Safety and Health (PNASH) Center, established in 1996 through the NIOSH/CDC Agricultural Initiative, is dedicated to the prevention of illness and injury among agricultural producers, workers and their families. We work toward this goal through partnerships in the Northwest (Alaska, Idaho, Oregon, and Washington).

For more information on our research, visit deohs.washington.edu/pnash/research.

RESEARCH

Heat Exposure, Injury Risk, and Productivity in Agricultural Workers (Spector, PI, NIOSH 2014-2017). This project examines the association between heat exposure and traumatic injury risk in agricultural workers, the relationship between heat stress and productivity, and the feasibility of using a biomarker of heat acclimation to detect workers at risk for heat-related illness and injury.

Prevention of Occupational Exposure to Pesticide Drift (Fenske, PI, NIOSH 2016-2021)

Beginning with linking data from the WA Department of Health and WSU Ag WeatherNet, this project will determine the probability of drift events due to environmental conditions during spraying and develop a predictive model. Then, conduct field studies to validate our model. Study findings will be used to provide new user-friendly tools and trainings to predict drift event-prone weather conditions.

The Healthy Dairy Worker Study (Rabinowitz, PI, NIOSH 2016-2021)

This partnership study with WSU will enroll new workers in the dairy industry and evaluate microbiome changes over time. We will characterize worker exposures to microbes and allergens and evaluate whether these exposures impart immune benefits (the 'hygiene hypothesis'), and/or increase risk of disease, including infection and airway inflammation. This study will help identify priorities for preventive interventions and healthy host adaptation to the dairy environment.

Pilot: Respiratory Health and Indoor Air Quality in Washington's Cannabis Industry (Simpson, PI, PNASH Emerging Issue 2017-2018).

This pilot will measure airborne contaminants associated with cannabis production and evaluate if they are associated with airway inflammation and/or respiratory symptoms. The goal is to provide solutions to the industry to improve workplace practices.

PREVENTION AND INTERVENTION

A Multi-level Approach to Heat Related Illness Prevention in Agricultural Workers (Spector, PI, NIOSH 2016-2021)

Building on our previous heat-related illness (HRI) studies, we will develop and evaluate a multi-level approach to address HRI for farmworkers in the tree fruit industry. The project will assess a proposed work-based intervention program as well as whether off-hour environmental conditions contribute to risk for HRI during work. To accomplish study aims, an Expert Working Group (EWG), that includes workers, farm managers, and other stakeholders will guide the development, testing, and dissemination of the intervention.

Injury and Illness Prevention in the Pacific Northwest for the Dairy Industry (Yost, PI, NIOSH 2016-2021)

Dairy workers in Washington have an injury claim rate 72% higher than the state average. The hazards of animal-related injuries, slips, trips and falls are exacerbated by a growing hired workforce that has little previous experience in this industry. This project delivers and tests new worker safety training programs, and will include newly hired workers. The project, conducted in partnership with WSU, is guided by the ongoing participation of a Technical Advisory Group and on-the-ground dairy managers and workers.

Pilot: Recognizing and Reducing Safety Hazards in Northwest Potato Production (Curl, P, PNASH Small Grant 2017-2018)

This Boise State University intervention study will lay the groundwork for hazard intervention projects for the potato industry and novel assessment methods for use with other industries. In collaboration with the Potato Commission, WA and Idaho growers will be provided with a hazard self-assessment tool that guides them in mitigating and reducing safety hazards on their operation. Finally, an impact evaluation will assess the tool's effectiveness at raising awareness or addressing safety hazards.

Pilot: Evaluation of Wearable-Based Activity Recognition Modeling Applications for Logging Safety

This pilot project will integrate geospatial technology and activity recognition modeling into a Garmin smartwatch and smartphone application for rigging crew workers in the logging industry. This application aims to prevent injuries by improving loggers' situational awareness by providing real-time updates of their coworkers' work activity status and location.

SURVEILLANCE

Safety Surveillance for Pacific Northwest Fisheries (Kincl, PI, Oregon State University NIOSH 2016-2021)

This OSU research team will develop a system to address severe non-fatal injuries in NW commercial fishing by assessing vessel disaster and casualty data collected by NIOSH and the USCG. The project will also include casualty and safety data from insurance claims and primary data collection. The combination of these data will form the foundation for ongoing, scalable, practical surveillance systems for hazard assessment and for evaluation of programs for interventions in the commercial fishing industry.

EDUCATION

Practical Solutions for Pesticide Safety (Galvin, PI, NIOSH 2016-2021)

This project will identify and evaluate solutions that farm managers, forest service managers, and pesticide handlers can implement to minimize pesticide exposures. The new resources will be applicable to the revised EPA Worker Protection Standard and recent food safety requirements. We will engage workers and managers in walk-through evaluations and field testing to identify key safety issues and novel solutions. This project will deliver the solutions through expanded hands-on pesticide training modules and the use of online media to ensure broad access.

Pilot: Etiquetas Bilingües de Pesticidas/Bilingual Pesticide Safety (Galvin, PI, UW & PNASH 2017-2018). This service project has successfully demonstrated proof-of concept for the [PestiSeguro/PestiSafe](#) mobile app. Demand is high among growers for Spanish pesticide label safety information. This year's activities are developing the product for the tree fruit industry.

Training Grant: Northwest Safety Summit for Safety Professionals in the Logging Sector

PNASH is sponsoring a NW Logging Safety Summit with the goal to convene logging safety professionals to share information, train on new industry safety developments and solutions, and establish priorities for future needs. Participants are joining from across WA, OR, ID, MT, on February 20, 2018 in Springfield, Oregon.

COMMUNITY-BASED PARTICIPATORY RESEARCH

El Proyecto Bienestar (or, The Wellbeing Project), is a long-standing community health intervention effort guided by a Yakima Valley community advisory board and a partnership of: The University of Washington; Northwest Communities Education Center/Radio KDNA; Heritage University; Yakima Valley Farm Workers Clinic. Our current Proyecto Bienestar projects:

Home Air in Agriculture - Pediatric Intervention (HAPI) Trial (Karr, PI, NIEHS 2014-2019) This study aims to reduce child exposure to inflammatory agents and allergens in the home through the use of high efficiency particulate air cleaners and a home-based education program. The study addresses the health of children with asthma living in communities with industrial scale agricultural operations, asthma in a vulnerable subpopulation (Latino farm worker children), and evidence based intervention strategies.

Health & Safety of Women Ag Workers (Breckwich Vasquez, PI, Multiple Sponsors 2014-2017), El Proyecto Bienestar is addressing sexual harassment of women working in agriculture. In partnership with our advisory board, we are assessing sexual harassment and worker health and developing a sexual harassment prevention training video and curriculum for agricultural growers and workers.

Putting Next Generation Sensors and Scientists in Practice to Reduce Woodsmoke in a Highly Impacted, Multicultural Rural Setting (NextGen) (Karr, PI, EPA 2016-2019) The 'NextGen' project is in partnership with the Yakama Nation and area schools. Next generation, low cost air pollution sensors will be used to address questions pertaining to wood smoke impacts in their rural community. The study will inform new efforts to reduce exposure and understand local health impacts.

Pilot: Nitrate Well Water Testing in Agricultural Communities: Improving Environmental Health Communication

This project will develop educational materials to promote nitrate well water testing among families in Lower Yakima Valley communities. Focus groups will identify the well water testing needs, including knowledge and health beliefs.

Safety and Health of Latino Immigrant Forestry Services Workers in the Pacific Northwest (de Castro, PI, NIOSH 2014-2017)

This research-to-practice project based in the community of Medford, Oregon is identifying and assessing injury and health risks for Latino immigrant forestry services workers in order to develop injury prevention solutions and provide safety education.

PNASH EDUCATIONAL RESOURCES

Video and Audio Libraries ➡ <https://www.youtube.com/user/USagCenters> and http://depts.washington.edu/pnash/audio_library

Ag Medicine e-Learning Series ➡ <https://osha.washington.edu/professional-development/pages/e-learning>

Practical Solutions for Pesticide Safety (ENG/SP) ➡ http://depts.washington.edu/pnash/practical_solutions

Fluorescent Tracer Training Hands on Learning for Pesticides (ENG/SP) ➡ http://depts.washington.edu/pnash/fluorescent_tracer

Forestry Services Safety Resources (ENG/SP) ➡ <http://deohs.washington.edu/pnash/forestry-services>

Other special prevention topic pages: Heat Related Illness, Orchard Injuries, etc. ➡ <http://depts.washington.edu/pnash>

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Sign-up for PNASH's monthly ENEWS at <http://deohs.washington.edu/pnash/>