



## **Annual Report 2015-2016**

### Section II: Stories of high impact

#### **Center Wide Activities (CWA)**

Program Director: David Kalman, PhD

- The NWCOHS produced an 8-minute video with WebsEdge TV Production Company, that describes our work through the voices of our ERC trainees, alumni, and faculty. In November, 2015, the video was released at the American Public Health Association annual meeting in Chicago, IL through APHA TV and is now part of our Web page. The video will be used for student recruitment and at external events to provide an overview of NWCOHS academic programs, research activities, and new training programs (CMOSH and OHHAI). CE coordinated the production of the video (<https://goo.gl/dnIU2g>). The video has been useful for student recruitment and was used in first regional outreach
- Semiahmoo Symposium on Environmental, Occupational and Public Health: NWCOHS helps foster an annual, cross border research conference between Universities in the Pacific Northwest including University of British Columbia, Simon Fraser University and UW. Over the course of two days, engaged faculty and students (including five current and former ERC trainees and five NWCOHS faculty) presented research and topics on a wide array of areas in environmental and occupational health. The NWCOHS presented awards to four students from Region X institutions, two each from University of Washington and Oregon State University.
- At the 2015 annual Northwest Occupational Health Conference (NOHC), co-sponsored by industrial hygiene, OEM practitioners, and OHN associations, NWCOHS supported trainees to engage together on cross cutting science, best practices and regulatory perspectives: 1) a 'Nanomaterials and Control Banding' short course; 2) a student only session with students from UW, University of Oregon, Montana Tech and Boise State University; 3) a session featuring NWCOHS OHHAI and CMOSH programs.
- UW Worker Memorial Day: During the past 5 years, NWCOHS CE has organized the UW Worker Memorial Day event to raise awareness on the UW campus and the community about how we can strengthen our commitment to make jobs safer and save lives. This event is a collaborative effort with DEOHS students, staff, faculty, unions, and members of other departments on campus, such as the UW Harry Bridges Center for Labor Studies.
- Applied project in partnership with the Fair Work Center (NGO) and the Washington State Department of Labor and Industries (SHIP program): "Working conditions, stress, and health among low-wage workers in Seattle." (10/1/2015-6/30/2017) (Drs. Seixas and de Castro)
- The Northwest Center of Occupational Safety and Health ERC (University of Washington, Seattle) continues to respond to regional needs by delivering essential and innovative training programs. For example, Dr. Fowler, VMD and Dr. Rabinowitz, MD at the UW One Health Center and the UW DEOHS Continuing Education Program designed a professional development course to increase awareness, knowledge and skills for reducing exposures to occupational hazards among veterinary personnel, i.e. veterinarians, vet technicians and other staff. This educational program is being

offered in September 2015 through the Washington State Veterinary Medical Association, and is part of a new research initiative to identify and address barriers to implementing safety practices in clinical veterinary settings. This collaboration is possible by our new ERC training program, the Occupational Health at the Human-Animal Interface (OHHAI).

- The Northwest Center of Occupational Safety and Health ERC (University of Washington, Seattle) is committed to promoting green chemistry and extending sustainability practices through cutting edge research and unique educational programs designed for health and safety practitioners, chemists, pollution prevention specialists, materials scientists and others. UW ERC trainees participated in a series of professional development courses that focus on best practices for transitioning to safer chemicals, a study designed to disseminate information about UW's Sustainability Green Lab Certification Program, and an interdisciplinary seminar covering the selection, use and design of 21<sup>st</sup> century chemicals. The growing green movement (safer chemicals, smart energy, sustainability) provides a new lens to address the needs of workers and the occupational health and safety community. The following courses and projects, attended by 50-70 participants each, have developed new partnerships with pollution prevention organizations, practitioners in the biotechnology industry, Northwest Green Chemistry Center and others to strengthen the knowledge and skills of practitioners in our region:
  - Roadmap for Establishing a Sustainability Program in UW's DEOHS Laboratories (2013-2015)
  - Best Practices for Sustainable Laboratories Continuing Education (CE) Course (3/25/2014)
  - Best Practices for Transitioning to Safer Chemicals Continuing Education Course (1/29/2015)
  - The Design of Safer Chemicals and Products: The Nexus of Toxicology and Chemistry CE Course (4/23-24/2015)
  - Green Chemistry and Chemical Stewardship Certificate Program (launch 9/2015)
  - -UW DEOHS Green Laboratories Webinar Series
- The NWCOHS initiated a project in partnership with the Fair Work Center, a local NGO, addressing "Working conditions, stress, and health among low-wage workers in Seattle." The project takes advantage of the changing wage and hours laws being enacted within the city of Seattle, and addresses health risks to vulnerable populations in our city (10/1/2015-6/30/2017) (Drs. Seixas and de Castro).

## Outreach Highlights

The NWCOHS outreach effort encourages research translation through support of a variety of regional conferences, in which NWCOHS faculty, staff and trainees attend and participate.

- NWCOHS CE attends and participates in the region's governor safety and health conferences in Alaska, Oregon and Washington. In collaboration with the Washington Governor's Industrial Safety Conference (WA GISH), NWCOHS CE offered a Medical Track: "*Current Issues in Treating Injured Workers*" in Tacoma Washington. The track featured a variety of presentations including the new WA opioid prescribing guidelines, Ebola preparedness, workplace violence, tools for returning the injured worker to the workplace. In addition, one session provided a hands-on experience for clinicians seeking new health and safety tools to prevent injuries and illnesses. OEM trainees attended this medical track.
- Nanotechnology and Control Banding at NOHC: the NWCOHS CE partnered with the Pacific Northwest Section of the American Industrial Hygiene Association (PNS-AIHA) in planning and implementing a short course on '*Nanomaterials, Chemical Exposures and Control Banding: What Does It Mean for Workplace Safety*' at the 2015 Northwest Occupational Health Conference (NOHC). In addition, faculty and trainees from CMOSH and OHHAI programs participated in a session during NOHC to share their current research findings with practitioners.

- Pacific Northwest Veterinary Conference: A one-day course was designed and delivered in collaboration with Dr. Rabinowitz (UW OHHAI faculty) and Dr. Fowler (UW OHHAI advisor) for all veterinary practice workers, supervisors, managers, and safety professionals in animal care and research. Attendees were introduced best practices for injury prevention using a One Health Model that incorporates human and animal factors, as well as the physical and psychosocial environments in developing safety protocols. Other topics included the hazards of chemotherapeutic agents in veterinary practices and detail practical strategies for safe handling of these hazardous drugs that can cause serious health and safety harm to exposed workers.
- Film Screening: In collaboration with the University of Washington Dept of Environmental and Occupational Health Sciences, we offered a complementary screening of the film “A Day’s Work” featuring the personal story of a worker killed in an occupational incident. The film screening hosted 71 health and safety professionals from many disciplines on University of Washington’s Seattle campus.
- Pathways into Health Conference: CE exhibited at the three day 8th Annual National Pathways into Health Conference in Seattle, WA October 12-14, 2015. The conference focused on expanding career opportunities for American Indian and Alaska Native (AI/AN) in allied health professions. UW OHHAI also participated and shared information with participants.
- Tribal Green Summit: The Snoqualmie Tribe hosted a three day Green Tribal Summit in March 2016 in Snoqualmie, WA. As an exhibitor, this event provided us an excellent opportunity for engagement and increased visibility for occupational health and safety as a career path. The Green Tribal Summit had several themes that matched with the mission of our sustainability and green chemistry activities including resource management, pollution source reduction through safer chemical selection and educational opportunities to build sustainable communities. Jill Tepe presented a talk introducing alternative chemical selection principles, resources for teachers and professional development education opportunities that exist through NWCOHS and other grant awards related to green chemistry (e.g. Molecular Design Research Network).
- Safer Chemicals: NWCOHS CE was part of the UW DEOHS team that was honored with a “Safer Chemistry Champion” award presented by the Washington Department of Ecology on Oct. 27, 2015. CE collaborated with the team to develop a webinar series on laboratory recycling, safer and more sustainable alternatives for supplies and chemicals, and best practices for conserving energy and resources.

## ***Industrial Hygiene (IH)***

Program Director: Christopher Simpson, PhD, MSc

- 7 new external grants through competitive submission were awarded to Exposure Science program faculty in the 2015-2016 fiscal year, totaling over \$2.8 million.
- 7 peer-reviewed articles with ERC-supported trainee authorship were published during FY 15-16

### Trainee Accomplishments

- MS student Magali Blanco received the Castner Endowed Student Research Fund award for her research investigating the effect of various spray technologies on pesticide drift.
- Grant Quiller, an MS student, was selected to participate in the 2016 Mount Sinai International Exchange Fellowship Program to conduct occupational and environmental health research in Cuernavaca, Mexico.
- PhD student Marissa Baker received an F31 fellowship from NIEHS to support her research investigating metabolites related to manganese exposure. In addition, Ms. Baker was awarded the

2016 IPA/DGUV Award from the International Society of Exposure Science, which fosters doctoral student research in exposure sciences with linkages to biomonitoring.

- Boris Reiss, a graduating PhD student, has accepted an assistant professorship position at the University of Arizona.
- All of FY 2015-2016 graduating ES/IH students are employed in the occupational health & safety field or are seeking advanced OSH training. Employers of these recent graduates includes Stanford University, Cornell University Medical Center, Intel, Areva NP, and the U.S. Coast Guard.

#### Faculty Accomplishments

- IH/ES Program Director Dr. Christopher Simpson was selected to serve as an Academic Councillor on the Board of Directors for the International Society of Exposure Science, and he is continuing his four-year term as a member of the Safety and Occupational Health Study Section.
- Dr. Lianne Sheppard was appointed as Reviewer for the EPA STAR Graduate Fellowship and she continues to serve as chair for USEPA CASAC Oxides of Nitrogen Primary NAAQS Review Panel.
- In 2015, Dr. Edmund Seto became Co-Director of the Construction Management Occupational Safety and Health NIOSH ERC Training Program. In addition, Dr. Seto was appointed as a Reviewer for the Proceedings of the National Academy of Sciences.
- Joining the DEOHS Faculty and Exposure Science program, Dr. Tania Busch Isaksen was hired as Lecturer in fall of 2015.

### ***Occupational Health Nursing (OHN)***

Program Director: Butch de Castro, PhD, MSN/MPH, RN

Program Co-Director: Jenny Hsin-Chun Tsai, PhD, ARNP, PMHCNS-BC

#### Trainee Accomplishments

- MPH trainee, Jane Vaccaro, successfully graduated in June 2016. For her MPH practicum, she worked with the Northwest Tribal Emergency Management Council (NWTEMC) to develop a toolkit (including handbook and resources) on how to start a Tribal-based medical reserve corps (MRC) unit. NWTEMC operates as a consortium of member Tribes throughout the Pacific Northwest to assist them in Homeland Security and Emergency Preparedness efforts.
- Continuing MPH trainees (Kim Doughty, Staci Kvak, & Mikiko Nakamura) embarked on their respective MPH practicum in June 2016. Ms. Doughty is working with UC Berkeley's Labor Occupational Health Program to develop health and safety training materials for employers of forestry workers. This project is part of a larger project that includes a related Occupational Health Internship Program (OHIP) project. Ms. Kvak will work on a safety culture and engagement project at an Amazon distribution center. And, Ms. Nakamura was competitively selected as a summer nurse intern with federal OSHA's Office of Occupational Medicine & Nursing in Washington, DC.
- Continuing PhD student, Ms. Kimiko Sasaki, was selected for the Jonas Nurse Leaders Scholar Program (from the Jonas Center for Nursing and Veterans Healthcare) for the period of August 1, 2016 to July 31, 2018. The goal of this program is to increase the number of doctorally-prepared faculty with exceptional leadership skills. For this award, Ms. Sasaki will be mentored by Dr. Jenny Hsin-Chun Tsai, OHN Assistant Program Director.

#### Faculty Accomplishments

- Butch de Castro, OHN Program Director, was selected as a Fellow to the American Academy of Nursing in June 2016. His selection was based on peer recognition of his expertise and scholarship in occupational health nursing, as well as his prior work with federal OSHA and the American Nurses Association. He will be formally inducted in October 2016 during a ceremony in Washington, DC. He also continues building his research on occupational health disparities through federally-funded awards, including a CDC-NIOSH U01 award to develop health and safety training materials for Latino forestry workers and a NIH-NICHD R01 award to investigate the health impact of transnational migration. Additionally, he continues work on a NIH-NIEHS funded project to provide community-based worker health and safety training to underserved populations (including under-represented minorities and Tribes throughout Federal Region X).
- Dr. Jenny Hsin-Chun Tsai, OHN Assistant Program Director, continues to build her program of research on community-based prevention to address occupational health disparities in immigrant workers and to disseminate research findings through conferences and publications. She works on implementing a CDC-NIOSH R21 award to assess the integration of basic worker health education in and by four types of community agencies in order to reach a broad range of Chinese American immigrants. She was awarded a Summer Research Fellowship from the School of Nursing to develop a CDC-NIOSH R01 application. The findings of her previously completed CDC-NIOSH R21 project about the community interagency connections for immigrant worker health interventions were recently published in the CDC's journal, *Preventing Chronic Disease*.

### ***Occupational Medicine Residency (OMR)***

Program Director: Joel Kaufman, MD, MPH

Residency Director: Debra Cherry, MD, MS

#### Trainee Accomplishments

- In May 2016, ERC trainee Shilpa Gowda, MD, MPH, won the 2016 Department of Environmental and Occupational Health Sciences (DEOHS) Outstanding Master's Student award from the University of Washington School of Public Health (see <http://deohs.washington.edu/awards>). Her Master's thesis, "Ambient Air Pollution and Lung Cancer Risk in the Women's Health Initiative Observational Study," was selected for a podium presentation at DEOHS research day and a poster presentation at the American Occupational Health Conference in Chicago. Dr. Gowda was hired to join the NIOSH Health Hazard Evaluation team in Cincinnati, a job she will start in October 2016.
- Ann Tu, MD, MPH, co-authored the online toolkit "Reducing Stress: A Toolkit for 9-1-1 Call Center Managers." Dr. Tu spent the 2015-2016 academic year working with a research group studying techno stress in emergency call center operators at a pilot location for multimedia input, including text and video messaging along with phone calls. She was selected for a podium presentation, "Ecological and Transactional Model of Occupational Stress: Application to 911 Telecommunicators," at the annual American Occupational Health Conference (AOHC) in April 2016 in Chicago, IL. Only about 10% of resident projects submitted to AOHC are selected for podium presentations. Dr. Tu joined Group Health at Work in Seattle as an occupational medicine provider in July 2016.
- Greg McKelvey, MD, MPH, took a lead role in implementing outpatient musculoskeletal ultrasound in an occupational medicine clinic. He co-authored a successful application to purchase and trial the equipment at a continuity clinic where he was working during his first summer of training. He discussed his work with policy makers at Washington Labor & Industries, a state agency that sets worker's comp policy, which spurred development of new guidelines for the practice and reimbursement of outpatient musculoskeletal ultrasound.

## **Occupational Health Services Research (OHSR)**

Program Director: Jeanne Sears, PhD, MS, RN

Program Co-Director: Gary Franklin, MD, MPH

### Trainee Accomplishments

- Brian Chin, mentored by David Bonauto at L&I SHARP, was an active participant in a legislatively mandated work group—which included representatives of firefighter unions, fire departments, fire chiefs, state fund public employers and self-insured employers—to discuss policies for mandatory reporting of work-related hazardous exposures suffered by firefighters. Recommendations were reported back to the legislature in December 2015.
- Former OHSR trainee Laura Fraade-Blanar has several noteworthy accomplishments. She was awarded a Fellowship in the RAND Postdoctoral Training Program in the Study of Aging, to begin October 2016. She was appointed to the Transportation Research Board, Truck and Bus Safety Committee, and served as reviewer for *Injury Prevention* and the *American Journal of Public Health*. In 2015, she was awarded the University of Washington Retirement Association Fellowship in Aging, and was also awarded a traineeship from the Institute of Translational Health Science's TL1 Multidisciplinary Predoctoral Clinical Research Training Program.

### Faculty Accomplishments

- OHSR Co-Director Dr. Franklin led a successful statewide effort to revise the opioid prescribing guidelines in July 2015, and has been involved in related efforts nationally. Jeff Harris and Peggy Hannon have a contract (PI: Harris) with the American Cancer Society (ACS) to support adoption of evidence-based workplace health promotion strategies by large employers. This program operates in 17 U.S. cities and has 540 member companies. They recently concluded a successful evaluation of the ACS CEOs Against Cancer program.
- Based on OHSR trainee demand, we developed a new course, Occupational Health Services Research Methods (HSERV 590), which was first offered beginning June 2016 (originally slated for Summer 2015, but delayed due to funding uncertainty).

## **Occupational Health at the Human-Animal Interface (OHHAI)**

Program Director: Peter Rabinowitz, MD, MPH

### Press

- "Studies confirm poor well-being in veterinary professionals, students" published by the Journal of American Veterinary Medicine Association, featuring Dr. Peter Rabinowitz and Dr. Heather Fowler. <https://www.avma.org/News/JAVMANews/Pages/160501c.aspx>

### Faculty Accomplishments

- Dr. Fowler, VMD and Dr. Rabinowitz, MD at the UW One Health Center and the UW DEOHS Continuing Education Program designed a professional development course to increase awareness, knowledge and skills for reducing exposures to occupational hazards among veterinary personnel, i.e. veterinarians, vet technicians and other staff. This educational program is being offered in September 2015 through the Washington State Veterinary Medical Association, and is part of a new research initiative to identify and address barriers to implementing safety practices in clinical veterinary settings.

## **Construction Management Occupational Safety and Health (CMOSH)**

Program Director: Ken-Yu Lin, PhD  
Program Deputy Director: Edmund Seto, PhD

The reporting year is the inaugural year of the CMOSH program with one active trainee, two matriculated to start in 9/2016 (with one of the two to be funded by ERC) and no program graduates. The first program trainee is expected to graduate with a M.S. of Construction Management in the winter of 2017.

### Press

- "Long-term health of construction workers gets new focus in UW's CM program" published by the Seattle Daily Journal of Commerce, featuring Dr. Ken-Yu Lin and Dr. David Kalman  
<http://www.djc.com/news/search.html?action=get&id=12091758>

### Curriculum

- The two CMOSH program directors developed a new graduate level course entitled "Data-Driven Health and Safety for Construction". Besides the CMOSH trainee, there were 11 other students enrolled in this course, with backgrounds ranging from architecture, construction management, and civil engineering. The course evaluation indicated very high instructional quality, with a 4.5 combined median out of 5. Qualitative teaching evaluation data also suggested student appreciation of the field trip to a construction site. Student work from the course is featured on the CMOSH program website.

### Trainee Accomplishments

- Our trainee Christopher Mak successfully obtained a summer internship position with the University of Washington Capital Planning and Development.

### Faculty Accomplishments

- Dr. Ken-Yu Lin organized a safety and health session in the annual Center for Education and Research in Construction Conference. She was also invited to give talks at the Institute of Labor, Occupational Safety and Health in Taiwan and at the Puget Sound American Society of Safety Engineers Professional Development Conference. Dr. Lin served on the award panel for the Associated General Contractors of Washington's 2016 Build Washington Award.
- Dr. Seto was invited to give talks at the American Public Health Association, ISES Symposium, and the Semiahmoo Occupational, Environmental and Public Health Conference. He also offered an EPA community air monitoring training.
- Dr. Spector serves as the Associate Editor for the Journal of Agromedicine. She was also invited to give a talk at the Washington State Department of Labor and Industries symposium and offered a continuing education lecture on heat-related illness prevention.
- Senior lecturer Rick Gleason continues to serve on the Washington Governor's Industrial Safety and Health advisory board, the Evergreen Safety Council executive board, and the Puget Sound Construction Safety advisory board. Mr. Gleason is also a committee member for the Mechanical Contractors Association of Western Washington's Annual Safety Award and for the accident prevent panel at the Washington Governor's Safety and Health Conference. He was the Course Director for a 4-day Process Safety Management class and co-runs the Heartbeat of Health and Safety Podcast.
- Dr. Migliaccio was invited to give a talk on the use of bio and environmental sensing in construction at the Northwest Construction Consumer Council Annual Conference.

## ***Continuing Education (CE)***

**Director: Nancy Simcox, MS**

- Total Trainees: There were 2,348 trainees engaged in classroom and online CE courses between July 1, 2015 and June 30, 2016.
- OEM Grand Round Lecture Series: A reformatted Occupational & Environmental Medicine (OEM) Grand Rounds series launched in 2015 with a new focus on clinical best practices (e.g. occupational burns, shoulder pain, sleep and fatigue issues) has doubled our participation rate. In addition, new marketing efforts with professionals from Association for Occupational Health Professionals, Independent Medical Examiners, and Northwest Association of Occupational & Environmental Medicine (NAOEM) improved our outreach to professionals. In efforts to expand our course reach and meet audience requests, we also launched a live interactive webinar option for Grand Rounds participation to coincide with the lecture series. A satellite site in Eastern Washington was piloted to meet additional regional needs.
- Bakken Oil Transport: A one-day course on “*Bakken Oil Transport: Emerging Risks Awareness Training*” was offered to over 100 participants in multiple locations (Seattle, Everett, WA and Boardman, OR). After increased demand for the course, we have added three additional course dates for August and September 2016 in Seattle, Portland, OR and Spokane, WA. The Pacific Northwest is experiencing rapid changes in the railcar movement of crude oil to our ports and refineries, changes in state and local legislation, and experienced a highly publicized multiple rail car derailed and subsequent fire incident in Mosier, OR in June 2016. The courses raised awareness and safety information on Bakken crude oil for safety professionals, fire departments, emergency responders, and municipalities.
- Occupational Health Nursing: An Occupational Health Basics for Nurse Practitioners and Nursing Professionals eLearning course was launched in 2015 in collaboration with the NWCOHS Occupational Health Nursing Program. To date, 92 trainees completed the course as part of a new collaboration with Seattle University College of Nursing.
- Safety and Ignitable Coating Operations: A one-day short course on *Ignitable Coating Operations: Preventing Fires, Explosions, and Toxic Exposures*” was offered in December 2015 in Portland, Oregon to help contractors, site supervisors, painting supervisors, labor supervisors, and occupational health and safety practitioners learn about best practices for using ignitable coatings and improving approaches for ventilation of spray operations after a successful course in Seattle (3/19/2015).
- Loss Prevention Through Ergonomics: A two-day course on “*Loss Prevention Through Ergonomics: Best Economic Practice for Sustaining Worker Health*” was offered in March 2016 in Renton, WA to 78 participants. The course helped small business owners, human resource professionals, ergonomists, industrial hygienists, and physical and occupational therapists learn about the impact of ergonomics in occupational health, decision-making processes around prevention and intervention resources and current translational research on a variety of emerging occupational risks.
- Marijuana Processing: Our 10-part, year-long webinar series on “*Fire Marshal and Code Official’s Boot Camp: Hazardous Materials Requirements of the International Codes*” hosted a special feature, one hour synchronous webinar on “*Marijuana Processing*” for 157 participants, almost four times our average monthly webinar attendance. The webinar featured proposed fire code for the International Code Council (ICC) and compliance review of existing processing facilities in Washington State. Over half of the webinar participants including fire fighters, code inspectors, industrial hygienists and government officials, joined us from outside WA State, including Alaska, Colorado, Oregon and California.