**Project Title:** Southern California Education and Research Center (SCERC)

**Grant Number:** 5 T42 OH008412

**Principal Investigator:**
Niklas Krause, MD, MPH, PhD
Professor, Department of Environmental Health Sciences and Department of Epidemiology
Fielding School of Public Health
University of California Los Angeles
Box 95-1772; 56-071 CHS
650 Charles E. Young Drive South
Los Angeles, CA 90095-1772

Phone: 310-825-2079
Fax: 310-794-9317
E-mail: niklaskrause@ucla.edu

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**Date of Report:** 10/05/2017
SCERC Summary

The Southern California Education and Research Center (SCERC) is located at the University of California, Los Angeles (UCLA) and the University of California, Irvine (UCI). The SCERC represents a coordinated, interdisciplinary set of professional education, continuing education, research and outreach activities that have had and will have a positive impact on the region's and nation's occupational health and safety practice. The administrative and planning and evaluation core and three of the four training programs are based at UCLA, including Industrial Hygiene (IH), Occupational and Environmental Health Nursing (OEHN), and Continuing Education (CE). The administrative core includes the Outreach and Pilot Project (PP) programs which function across both campuses. The Occupational Medicine Residency (OMR) is based at UC Irvine. The Targeted Research Training (TRT) program is jointly administered between UCLA and UCI. The TRT program focuses on work organization research and occupational epidemiology, the latter organized in collaboration with the epidemiology and public health programs at UCLA and UCI. CE, Outreach, PP and the TRT programs cut across the academic training programs and other allied occupational health- and safety-related disciplines. Degrees offered by ERC programs include MPH, MSc, MSN, PhD, DrPH, and OM residency certificates.

The ERC operates in concert with the UCLA and UCI Centers for Occupational and Environmental Health (COEH). These are state supported centers for research and teaching in occupational safety and health. Together the ERC and COEH represent a unique and effective partnership between state and federal funding.

The major goals of the SCERC are to: 1) educate professionals in the various disciplines of occupational safety and health (OSH), 2) provide continuing education to OSH professionals, 3) facilitate OSH activity through outreach to regional institutions and organizations, 4) foster OSH research, 5) provide OSH expertise to organizations and agencies in need, 6) facilitate marshaling of community resources to address and solve OSH problems, 7) respond through educational programs and research to the changing nature of OSH problems, and 8) educate stakeholders including business, labor, and vulnerable worker populations. The SCERC is significant in that it serves a heavily populated region with a diverse workforce in need of trained OSH professionals.

Relevance

The regional need for training in occupational health is particularly great because of the large population and concentration of industry in Southern California. California is the most populous state in the nation and is a leader in virtually every measure of agricultural and industrial production. Our center addresses that need by educating professionals and academic leaders in the fields of occupational medicine, industrial hygiene, occupational health nursing, and occupational epidemiology through academic programs and continuing education; conducting research in occupational health and safety and related areas; providing outreach and resources to educational and professional organizations, and by educating non-academic stakeholders including business, labor, and vulnerable worker populations.
Key Personnel

Table 1. Southern California Education and Research Center key personnel

<table>
<thead>
<tr>
<th>Name</th>
<th>SCERC Role</th>
<th>Email</th>
<th>Phone Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker, Dean</td>
<td>Dep Ctr Dir, PD TRT</td>
<td><a href="mailto:dbaker@uci.edu">dbaker@uci.edu</a></td>
<td>949-824-8641</td>
</tr>
<tr>
<td>Ben-Levi, Cass</td>
<td>PD CE &amp; Outreach</td>
<td><a href="mailto:cbenlevi@ucla.edu">cbenlevi@ucla.edu</a></td>
<td>310-890-4066</td>
</tr>
<tr>
<td>Boomus,</td>
<td>PD OM</td>
<td><a href="mailto:cboomus@uci.edu">cboomus@uci.edu</a></td>
<td>949-824-5170</td>
</tr>
<tr>
<td>Krause, Niklas</td>
<td>PI, Ctr Dir, PD PPRT</td>
<td><a href="mailto:niklaskrause@ucla.edu">niklaskrause@ucla.edu</a></td>
<td>310-562-6243</td>
</tr>
<tr>
<td>Que Hee, Shane</td>
<td>PD IH</td>
<td><a href="mailto:squehee@ucla.edu">squehee@ucla.edu</a></td>
<td>310-206-7388</td>
</tr>
<tr>
<td>Robbins, Wendie</td>
<td>PD OEHN</td>
<td><a href="mailto:wrobbins@sonnet.ucla.edu">wrobbins@sonnet.ucla.edu</a></td>
<td>310-825-8999</td>
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ERC Website

https://erc.ucla.edu/

Highlights and Accomplishments

A. Industrial Hygiene Program

This is a summary of the students’ and faculty’ major accomplishments.

Scholarships and Fellowships

Two masters students were awarded with scholarships or fellowships. Ivan Torres (2nd year MS student) received the Southern California/Orange County Sections American Industrial Hygiene Association Scholarship 2017. Diana Nguyen (1st year MPH Student) and Jimmy Phong (2nd year MPH student), received Tony Norton Memorial Fellowship 2017.

Students’ Project Awards

Ivan Torres (2nd year MPH student) was awarded with the American Society of Safety Engineers Foundation Rixio Medina & Assoc Hispanics in Safety; California Certified United Program Agency Student Project Award 2017

Presentations
1. **Song J**, Que Hee S. Comparison of permeation of 2-butoxyethanol through single, double, and triple layers of disposable nitrile gloves. American Industrial Hygiene Conference & Exposition, June 5-7, 2017 (poster). She received an award from the Personal Protection Committee.

2. **Yu N**. Shu S, Lin Y, Zhu Y. Measuring and reducing fine and ultrafine particles inside Los Angeles taxis. AIHce conference, Seattle WA, June 4-7, 2017 (Poster). She received the Aerosol Committee award.

**Publications**

Student (bolded)/faculty (underlined) publications that impacted peer-reviewed Journals.


**Faculty, Student and SCERC Involvement in EHSsentials 2017**

**EHSsentials 2017 UCLA**, A Symposium devoted to the Latest EHS Trends, issues, strategies, and solutions affecting Healthcare Facilities Today, Covel Commons, May 11 2017. Co Sponsored by the UCLA IH Program, Kaiser Permanente and BSI. Professors Que Hee and Robbins spoke to a symposium audience of 100 that also included some UCLA IH students. The Continuing Education Program of the SCERC facilitated registration and UCLA logistics.

**B. Occupational and Environmental Health Nursing Program**

Accomplishments of OEHN NIOSH trainees, alumni and faculty in promoting worker health and safety in 2016-17 spanned professional service, scholarship, and academia/industry partnerships. The OEHN program graduated four NIOSH trainees with a Master of Science prepared as nurse practitioners with OSH expertise. An alumna
of our PhD program was promoted from lecturer in UCLA American Indian Studies to a tenure track position in the UCLA School of Nursing. Not only does this broaden our OEHN research program with a new area focused on health and safety in subsistence farming, but responds to the critical need for the next wave of OEHN faculty nationally.

Four faculty and alumni provided leadership as Board members of the California State Association of Occupational Health Nurses (President, President Elect, Secretary, and Government Affairs Chair). At the national level, a PhD trainee was elected to the AAOHN Western Mountain Region Election Committee; two faculty and one PhD trainee held appointments on the Editorial Review Panel for *Workplace Health and Safety*; and at the 2017 AAOHN Global Summit an alumna who currently heads global employee health for a leading pharmaceutical research and development company, was asked and agreed to join the AAOHN leadership group focused on best practices in global OSH. Faculty members partnered with industries in the region on research projects: effects of work commutes on health and productivity of workers (university employer); and proactive injury prevention (major food distribution company). In response to demands by employers in our region and advice from our OEHN Practice Expert Group, this year OEHN successfully expanded our program to enroll Family Nurse Practitioner (FNP) students in addition to students in Adult-Gerontology Primary Care (A-G Primary Care Nurse Practitioners). Trainees from this FNP expansion will graduate June 2018.

**Presentations**


2. **Curtis D.** Preliminary findings: Relationship of work place racism and obesity in African American women: A pilot study. Mount St. Mary’s, Department of Nursing, May 2017


5. **Stone DS.** Successful leadership strategies in occupational and environmental health nursing. Orange County Chapter of The American Association of Occupational Health Nurses, Invited Podium Speaker, Santa Ana, CA, September 10, 2016

**Publications**


5. **Stone, D.** Human papillomavirus vaccination: An opportunity for ambulatory care nurses to promote health and wellness. AAACN ViewPoint 2017 39 (2), 4-8.

### C. Occupational Medicine Residency Program

A substantial Southern California shortage of OM specialists is being filled by our graduates. Gillian Nelson, who graduated 2016, is practicing occupational medicine full time in Southern California, has passed her boards, and is board certified. Sanjiwani Meharda, who also graduated 2016, is practicing occupational medicine full time at Kaiser Permanente in the Inland Empire, has passed her boards, and is board certified. Julia Garcia, who graduated 2017, is practicing occupational medicine part time at the Federal Occupational Health Clinic in San Diego, is board eligible, and is currently studying to take her board exams this October, the first time she is eligible to do so.

We have had two Full-Time Outservice Training recipients from the Navy, Joseph Vo and Samir Mukherjee. Only two are awarded by the Navy nationally for Occupational Medicine each year, and UCI was fortunate enough to receive one from each of the two academic years.

Joseph Vo graduated 2017 and is assigned to the Navy Environmental and Preventive Medicine Unit Five. The mission of this unit is to provide specialized public health support to naval assets in the Pacific region and to deploy Forward Deployable Preventive Medicine Units (FDPMU) around the world. He is the Occupational Medicine subject matter expert and provides consultation to naval forces in the Pacific region that have occupational medicine-related questions. He is also slated to become the department head for Fleet Support that provides industrial hygiene and environmental medicine support to the Pacific region and has been assigned to be the Preventive Medicine Officer for next year’s FDPMU team. This team responds at short notice to any preventive medicine requests from the Navy or Marine Corps. These requests support a wide range of activities including warfighting efforts and supporting disaster relief efforts.

### Presentations

1. **Vo J.** Effects of ozone and particulate matter on the formation of atherosclerosis in APO E knockout mice. Western Occupational Medicine Health Conference in Las Vegas, NV. Sept 17, 2017 (poster)

3. **Mukherjee S.** Stroke: How can you protect yourself. Community Outreach Program in Poway, CA. March 12, 2017

**Publication**


**D. Targeted Research Training Program**

The TRT program continued to be highly successful in providing research training to doctoral students who conduct research in NORA priority areas. The program provided support for doctoral-level research training at UCLA in occupational epidemiology, industrial hygiene in collaboration with the IH program, and occupational and environmental health nursing in collaboration with the OEHN program. The program also supported research training in work organization at UCI.

The SCERC faculty developed new courses and enhanced existing courses to increase interdisciplinary research training. Examples include the SCERC “Interdisciplinary Occupational Health Practice” courses EHS-230 A-C and the Occupational Epidemiology course taught by Dr. Krause at UCLA, as well as new courses on Occupational Health Psychology and Psychosocial Occupational Epidemiology taught by Dr. Choi at UCI.

**Presentations**


7. **Brogmus, G.** Occupational causes of back pain - asking the right questions. UCLA Ergonomics Webinar, July 12, 2016

**Publications**


4. **Mathews AR, Que Hee SS.** Quantitative leak test for microholes and microtears in whole gloves and glove pieces. Polymer Testing. 2016 Sep; 54:244-249


E. Pilot Project Program
Our PPRT Program has been very successful during 2016-17 in supporting high-quality pilot projects. We received letters of intent from nine potential applicants; five of them were invited and submitted a pilot project. Award recipients were students (4), and new investigators (1). Trainees were from the Southern California ERC (3), and the Northern California ERC (2). All projects addressed priority research areas as identified in the National Occupational Research Agenda (NORA). A total of $72,781 in support was awarded.

Table 2. Southern California Education and Research Center Pilot Project trainees supported during FY 2016-17

<table>
<thead>
<tr>
<th>Name (Degree)</th>
<th>Institution (Department)</th>
<th>Research Project Title</th>
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<tbody>
<tr>
<td>Logan Thomas Van Engelhoven (MS, PhD cand)</td>
<td>UC Berkeley (Mechanical Engineering)</td>
<td>“Evaluation of a shoulder support exoskeleton on static and dynamic overhead tasks”</td>
</tr>
<tr>
<td>Nathan Poon (MS, PhD student)</td>
<td>UC Berkeley (Mechanical Engineering)</td>
<td>“Evaluation of a trunk supporting exoskeleton for reducing risk for back injury due to fatigue”</td>
</tr>
<tr>
<td>Robert Canales (PhD)</td>
<td>U. of Arizona (Community, Environment &amp; Policy Department)</td>
<td>“Methodologies for analysis of continuous time series measurements relevant for occupational health”</td>
</tr>
<tr>
<td>Teni Adewumi-Gunn (MS, PhD cand)</td>
<td>UCLA (EHS)</td>
<td>“Development and Implementation of a personal protective equipment training program for cosmetologists”</td>
</tr>
<tr>
<td>Vikram Haridass (PhD student)</td>
<td>UCI (Epidemiology)</td>
<td>“Occupational cancer risk in California teachers and risk modification by history of anti-inflammatory, anti-hypertensive, anti-cholesterol medication use”</td>
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F. Outreach

In 2016-17 the Outreach Program finalized an agreement with the University of California Office of the President to co-sponsor UCOP’s two-day Risk Summit (attended annually by more than 600 University of California Health and Safety professionals) as well as on-line workplace safety courses through UCOP’s EH & S Professional Education Center. The CE Program will initially provide CEUs (continuing education units) for Registered Environmental Health Specialists (REHS) and will add other accreditations such as Board of Registered Nursing (BRN) contact hours over time. In addition, the SCERC is part of a consortium of University of California workplace health and safety programs that includes UCOP, UC Berkeley’s ERC, UC Riverside, and the OSHA Training Institute Education Center at UC San Diego.

This year the ERC and Industrial Hygiene program partner with BSI Group to offer the EHSsentials Environmental health and Safety Symposium for Health Care. There were a total of 49 attendees including 6 faculty. In 2016, we partnered with the California Industrial Hygiene Council to co-sponsor its annual conference.
While some of the attendees of these events are eligible for CE accreditation, many of the attendees are not, yet their knowledge and skills are enhanced through Outreach.

In addition to the 15 trainees’ papers shown in the different program sections, ERC faculty authored 15 papers in peer reviewed journals without trainee involvement.

Additional Publications by SCERC Faculty (without Trainee Co-authors only):


**G. Continuing Education**

CE courses were attended by more than 1,400 trainees. The trainees were comprised of physicians (9%), nurses (17%), industrial hygienists (12%), safety engineers and other safety professionals (24%), and other or not identified (37%). “Others” are often workers and supervisors assigned safety responsibilities but are lacking in credentials and training.

Trainees came from a wide variety of sectors: private industry (28%), government at all levels (14%), academic institutions (34%), non-profit organizations (9%), and other or not identified (16%).

Courses ranged from one-hour webinar sessions on ergonomics to 5-day courses such as the Comprehensive Industrial Hygiene Review. Other professional review courses included Associate Safety Professional (ASP), Occupational Health and Safety Principles and Nursing Certification (twice per year), Certified Hazardous Materials Manager (CHMM), and Certified Hazardous Materials Practitioner (CHMP). Nearly all
courses are accredited for American Board of Industrial Hygiene (ABIH), American Society of Safety Engineers (ASSE), California Board of Registered Nursing (BRN) and Registered Environmental Health Specialist (REHS) accreditation. A limited number of courses also qualified for Continuing Medical Education (CME) accreditation.