

and is utilized particularly well when combined with a one-day training session with an Occupational Medicine specialist. Presentation will illustrate the manual content, the evaluation process, and the study results. Supported by NIOSH grant: 5 U01 OH07542-04.

## **Poster #5**

### **Understanding acculturation, health risk behaviors and the Hispanic Epidemiologic Paradox in the context of a bi-national investigation**

**Tamara Hennessy<sup>1</sup>**, Maria Stoecklin-Marois<sup>1</sup>, Marc Schenker<sup>1</sup>, and Fernando Meneses-Gonzalez<sup>2</sup>; <sup>1</sup>University of California, Davis, <sup>2</sup>Instituto Nacional de Salud Publica, Cuernavaca, Mexico

**Rationale:** In the U.S., Mexican immigrant women often have better health outcomes than non-Latino white women despite having a higher health risk profile than many U.S. residents. Two hypotheses are often suggested to explain this “Hispanic Epidemiologic Paradox:” (1) selective migration of a healthy subgroup of persons from the sending country and (2) culturally favorable health behaviors which protect recent immigrants for some period of time after immigration. Unfortunately, many researchers have noted a relationship between adoption of negative health behaviors and subsequent impacts on health outcomes among Latinas with increasing levels of acculturation. Given the central role of the population of origin in explaining the paradox, an ideal study to investigate these two hypotheses would involve a comparison of health outcomes and risk profiles between Mexican-born women currently living in Mexico and Mexican-born women who have migrated to the U.S.

**Methods:** We conducted a bi-national cross-sectional pilot study comparing Mexican women living in Chavinda, Mexico and Mexican-born women living in Madera, California to characterize differences in risk factors and the role acculturation may play in these changes. Data were collected by interviewer-administered questionnaires and gathered information on major risk behaviors (smoking, alcohol and drug use, and sexual behavior) and acculturation level (U.S. women only).

**Results:** We interviewed 102 women from Chavinda and 93 women from Madera and found that while there were some differences in demographic characteristics and health risk behaviors, women in Chavinda and

low-acculturated women in Madera were likely to have similar health risk profiles, but these groups differed from more highly acculturated women living in Madera. Specifically, logistic regression models showed that women living in Chavinda were less likely to consume alcohol than U.S. residents (OR=0.29, 95% CI: 0.13, 0.68) and were less likely to have had more than one sexual partner (OR=0.23, 95% CI: 0.07, 0.73). High-acculturated women living in Madera were more likely to consume alcohol (OR=6.05, 95% CI: 1.79, 20.43) and have had more than one sexual partner (OR=4.44, 95% CI: 1.19, 16.59) than were less acculturated women living in Madera. We did not see differences between the relative odds of smoking, drug use or sexually transmitted diseases among the groups of women but this is most likely due to very small numbers of women reporting these events.

**Conclusion:** Our pilot data suggest that the process of acculturation has a more powerful impact on the observed changes in health status and health behavior when women migrate to the U.S. and the theory of selective migration seems less likely to account for these differences. Therefore, any local services or intervention programs must consider the ethnicity and acculturation level of the target audience. In addition, the ‘r2p’ applications of these findings are heavily dependent on the types of services available in the community.

## **Poster #6**

### **Identifying Risk Factors for Cholinesterase Depression among Pesticide Handlers in Washington State**

**Jonathan Hofmann<sup>1</sup>**, Harvey Checkoway<sup>1,2</sup>, Anneclaire De Roos<sup>1</sup>, Richard Fenske<sup>2</sup>, Clement Furlong<sup>3</sup>, and Matthew Keifer<sup>2</sup>, <sup>1</sup>Department of Epidemiology, <sup>2</sup>Department of Environmental and Occupational Health Sciences, and <sup>3</sup>Department of Genome Sciences. University of Washington: Seattle, WA

In 2004, the Washington State Department of Labor and Industries (L&I), under mandate from the Washington State Supreme Court, initiated a new cholinesterase (ChE) monitoring program for agricultural workers who handle toxicity class I or II organophosphate (OP) and N-methyl-carbamate (CB) pesticides. Washington is only the second state in the union to establish a ChE monitoring program. This poster describes the methodology of a recently initiated cross-sectional study to identify risk factors for ChE depression among pesticide handlers in

this monitoring program. Approximately 300 handlers will be recruited for this study. Risk of ChE depression will be evaluated with respect to workplace, behavioral, and genetic characteristics (paraoxonase or PON1 status). A recently developed computer-based survey instrument is being used to collect information about potential OP/CB exposures and other factors that may be related to ChE activity. This survey instrument features audio-recorded questions and icon-based responses that are displayed on a touch screen Tablet PC. The poster also addresses efforts to validate reported exposures through worksite visits for a subset of participants, and analyses of blood specimens for determination of PON1 status for each participant. The overall goal of this study is to characterize potential mechanisms of pesticide overexposure, and determine how such exposures can be prevented among handlers. This study will also provide epidemiologic evidence to determine whether findings from animal-based studies that PON1 status is associated with susceptibility to OP pesticides are consistent in humans.

Support for this project was provided by the following grants: Center for Ecogenetics and Environmental Health Pilot Project Program (NIEHS Award # P30ES07033); Environmental and Molecular Epidemiology Training Grant (NIEHS Award # T32 ES07262); Northwest Center for Occupational Health and Safety (CDC/NIOSH Award # 1 T42 OH008433-01); and the Pacific Northwest Agricultural Safety and Health Center (CDC/NIOSH Award # 1 U50 OH07544-04).

## **Poster #7**

### **Pesticide Effects: Integration into Health Care Provider Curricula**

Keifer M, Murphy H, **Holland S**, Pacific Northwest Agricultural Safety and Health Center, University of Washington, Seattle

This multidisciplinary project is designed to introduce the National Pesticide Competencies for Medical and Nursing Education\* into the primary curricula of health care providers. These competencies cover concepts that are key to the understanding of the human health effects of pesticides, with a focus on the occupational setting. The project includes participants from the University of Washington, Schools of Medicine, Nursing, Public Health, and Physician Assistants, Seattle Pacific University, Heritage University and the National Pesticide Information Network.

#### **Goals:**

- Develop pesticide related curriculum materials on core competencies for integration in the primary training of health care professionals
- Enlist committed students in the material development
- Identify topics, phases and processes in the curricula of health care professionals that provide insertion points for these materials
- Enroll key faculty in Seattle area and WWAMI institutions to develop strategies to integrate materials into existing curricula
- Evaluate strategy effectiveness and the impact of the insertion of material through classical pedagogical measurement methods
- Develop a dissemination plan for national distribution of successful curricular materials and strategies for integration into curriculum.

#### **Expected Products:**

- Tested modules designed for introduction into curricular formats
- Tested strategies for module introduction into health care provider training
- A cadre of young pesticide champions.

Examples of modules developed to date and project strategy will be shared. Funding provided by the US EPA, Grant#: 83273201.

\*National Pesticide Competency Guidelines for Medical and Nursing Education, 2003. NEETF, [www.neetf.org/health/providers/index.shtm](http://www.neetf.org/health/providers/index.shtm)

## **Poster #8**

### **Research to Practice Feasibility Study of an Ergonomic Apple Harvest Bucket**

**Amanda Jones**, Giulia Earle-Richardson, Suzanne G. Stack, Paul L. Jenkins, John J. May, Northeast Center for Agricultural Health, NYCAMH, Bassett Healthcare, Cooperstown, New York

**Introduction:** Previous research has demonstrated that an ergonomic apple picking bucket and belt is accepted by orchard workers, does not adversely interfere with productivity, and significantly reduces muscle recruitment in a number of key back muscles in the laboratory.

**Objective:** To evaluate the intervention's effect on muscle load in the orchard with actual harvest workers using electromyography (EMG).

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