

FROM THE DIRECTOR

## Contributions of women

Since its inception in 1991 many women have contributed to the success of the Western Center for Agricultural Health and Safety. However, before acknowledging them, I'd like to go back in time and recall the contributions of women to the field of occupational health.

Without a doubt, the most important contribution by a woman to occupational health in the United States was by Dr. Alice Hamilton (1869–1970), who sometimes is referred to as the “mother of occupational health.” Dr. Hamilton did pioneering work on the hazards of heavy metal exposure among immigrant workers in Chicago. She undertook these efforts during a time when little attention was paid to hazards in the “dangerous trades.” Immigrant workers from Central Europe provided a cheap labor force and engendered little concern for their health or safety.

At the time of Dr. Hamilton's work, occupational hygiene was well established in Europe but was considered non-existent in the United States. She changed that situation, and went on to make many important contributions to occupational health in the United States. She also became the first female faculty member of Harvard University! Her story is vividly told in her 1943 (reprinted in

(see **Contributions** on page 3)



Some of the participants of *promotores/as de salud* program and their families pose for a photo.

## Promotores/as de salud share ag health and safety knowledge

By Faith Boucher, Ph.D.

The health effects of agricultural chemicals, unclean living and working conditions, and other environmental hazards of agricultural work are of great concern to the farm worker community. This concern is exacerbated by lack of knowledge about the short- and long-term health effects of these hazards on children and adults.

Many farm workers know that agricultural chemicals are dangerous, but they continue to work in spite of these fears because of economic need, while taking precautions and altering their behavior in ways that may be inappropriate. Women are the primary care givers as well as the repositories of health care information.

Educating farm worker women in the environmental health hazards actually facing farm workers and ways to alleviate or mitigate the negative health effects is the most effective method for raising the level of knowledge and the health status of the community.

The most influential educators, whose advice is likely to be heeded, are respected members of the farm worker community. Training these community leaders as volunteer health educators, or *promotores/as de salud*, is a very effective way of educating and empowering the community.

(see **Promotoras** on page 2)

**Promotoras** *continued from page 1*

Mexican farm worker women have high rates of cancer morbidity and mortality that could be reduced through screening and early treatment. For many years, the Western Center for Agricultural Health and Safety and the Department of Epidemiology and Preventive Medicine at UC Davis have been involved in research among Mexican farm workers in the local migrant camps.



Farm working women are the primary care givers as well as the repositories of health care information. Photo by Ketty Mobed, Ph.D.

In 1997, with funding from the National Cancer Institute for cervical cancer research and education, we began recruiting and training *promotores/as de salud* from migrant worker camps to conduct health promotion activities

targeting Pap smear rates among their neighbors and relatives. In light of this, an evaluation conducted in 1999 showed significant increases in health information and changes in rates of cancer screening among the women of the migrant camps. Since then, the *promotoras* have made presentations on, for example, recognition of and first aid for pesticide illness, first aid and CPR, diabetes, heart disease, high blood pressure, high cholesterol, and other topics of interest.

While the *promotoras* themselves are the biggest success story, the students who have worked with this project speak passionately of their experience and the way it has affected their lives. These wonderful young women have achieved great things through their hard work and enthusiasm in gathering materials for and assisting the *promotoras* with the presentation of health education sessions in the migrant camps. Many of these students have gone on to medical school and public health graduate programs, to acquire skills to further serve their communities. The intelligent and sensitive perspective the students have exhibited is attributable firstly to their bicultural families, and secondly to the personal quality of empathy expressed in their words.

**DAISY MEJIA, (SPANISH, '06)**

“I was given the opportunity to work gathering information for public health presentations at migrant camps in Lodi, Yuba City and Dixon. I feel very grateful to have a job in which I can give something back to other Mexican women. Those one to two hours that the presentors (migrant workers) speak to their peers, gives them a great opportunity to show off what they’ve learned and also to

help teach others. I feel great satisfaction in helping these Mexican women pursue an education that will help them become more knowledgeable concerning diseases that greatly affect the Mexican and Latino population. It is my honor to work with these enthusiastic and intelligent women.”

**DEBORAH RAMIREZ (PSYCHOLOGY/SPANISH, '04)**

“I was born in Mexico City and my family resides in Madera, Calif. I am currently working at Woodland High School for the California Mini-Corps Program. I really enjoyed working with the women at the migrant camps because it was very inspiring to see how motivated they were to learn. It was amazing to see that they would come to the meetings even though they were tired from working all day, cooking for their families and taking care of their children. I feel that they taught us about life and highly encouraged us to do our best in school.”

**MELINA CASILLAS (INTERNATIONAL RELATIONS/WORLD TRADE AND DEVELOPMENT, '06)**

“I started working with the *promotoras* in the migrant camps in April of last year. Immediately I was able to see in these *promotoras* the interest and willingness to cooperate and to contribute to their communities. The *promotoras* are smart community leaders who are truly concerned with educating themselves and their communities about various health issues. I learned a lot from this program, which brings people together to share their knowledge and personal experiences in an effort to help each other.”

*For more information about this program, contact Faith Boucher, Ph.D, NIEHS Center for Environmental Health Sciences at UC Davis, at [flkboucher@ucdavis.edu](mailto:flkboucher@ucdavis.edu).*

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## Contributions *from page 1*

1985) autobiography, *Exploring the Dangerous Trades*.

Health and safety issues of farm workers have much in common with the issues confronted by Dr. Hamilton. Our farm workers are not exposed to heavy metals, but they are an immigrant workforce that provides cheap labor and are



Dr. Hamilton

ex-posed to many occupational health and safety hazards. Furthermore, they have not been a part of mainstream occupational health, and they lack political clout to gain attention to their needs. Many of these themes sound similar to the situation that existed in Dr. Hamilton's day, 100 years ago.

Many women have followed in Dr. Hamilton's footsteps addressing the health of workers. This includes research scientists, educators, administrators and legislators who have championed the cause of worker health and safety. Most recently Dr. Linda Rosenstock served as NIOSH director during the time when the Agricultural Health and Safety Center program was undergoing significant expansion. Dr. Rosenstock's own

background was in occupational epidemiology, with several research studies addressing the health effects of pesticide exposure.

Many of the accomplishments of WCAHS are attributable to the leadership of numerous perspicacious women. For example, Dr. Ellen Gold explored the effects of pesticides on neurologic function among farm workers and their children. Some of our early work on biologic markers of organophosphate exposure involved the innovative laboratory work of Carol Weiskoff. Much of the Center's research has been conducted and facilitated by very qualified and motivated women. Brenda Elvine-Kreis, M.S., Tamara Hennessy, M.S., Diane Mitchell, Ph.D., Lynn Morrin, Marla Orenstein, M.S., Cathy Saiki, Ph.D., and Maria Stoecklin, Ph.D., have been involved in the research of farmer and farm worker health issues.

Our Center's outreach efforts also have been immensely helped by the efforts of many women in other fields. Melanie Zavala worked for many years on bilingual pesticide education. Kathy Garvey, Gale Perez, Jenny Weber, Sonja Brodt, Ph.D. and Martha Stiles, M.S., have made important contributions to agricultural outreach, education and evaluation programs. Faith Boucher, Ph.D., has contributed with a longstanding program utilizing

*promotoras* to improve farm worker health (see article on page 1). Also, Dr. Barbara Lee, director of the Children's Agricultural Health Center in Marshfield, Wisc., has been a frequent contributor to our conferences and has provided funding for some of the studies done at UC Davis.

Our Center owes a large debt to the efforts of many women who have worked in the administrative core. They include Janice Abrinko, Trish Ramos, Eleanor Wood, Gwen Oliver and our current staff, Ketty Mobed, Ph.D., and Kathy Ponce. Ketty serves double duty as an epidemiologist, who has done research on reproductive health issues confronting women farm workers. Our External Advisory Committee has been fortunate to include Martha Guzman of the United Farmworkers of America, and Anne Katten of California Rural Legal Assistance Foundation. Marti Childs' contribution for preparing the Center's quarterly newsletter has been immeasurable over the past years.

I am extremely pleased to dedicate this issue of our newsletter to the contributions of women in agriculture, in general, and to all the women connected to the Western Center for Agricultural Health and Safety, in specific.

## **Pesticide illnesses and injuries workshop for health care providers and ag professionals Aug. 18-19**

A pesticide illnesses and injuries workshop designed for people who want to learn about pesticide-related illnesses and injuries and to extend this information to health care providers and agricultural professionals will be held in Oakland, Calif., on Aug. 18 and 19. Participants will receive information and resources to assist them in the recognition, management and reporting of pesticide exposure cases. They will also receive an overview of the latest tools for medical

monitoring of pesticide exposure. Teaching techniques and hands-on activities will also be included to help participants develop interesting and effective outreach and education programs on preventing pesticide exposure.

For more information visit [www.ipm.ucdavis.edu/IPMPROJECT/workshops.html](http://www.ipm.ucdavis.edu/IPMPROJECT/workshops.html), or call (530) 752-5273 to be added to the workshop mailing list.

## How agriculture has affected the lives of six women

This issue of the WCAHS newsletter focuses on the many contributions of women in agriculture, highlighting the health and safety of all people working in farming communities. We asked six women, in various agricultural roles, “In what ways has agriculture affected your life?” We found their answers to be very thought-provoking.

### **CAROL BARNEY, PUBLIC HEALTH DIRECTOR OF MADERA COUNTY (a rural county in the Central Valley of California)**

“Agriculture plays a central role in the work we do in a rural public health department. Many of our workforce come from families who farm or who have worked in the fields, as do the majority of the people we serve. A rural agri-based community such as Madera provides unique opportunities and challenges for public health professionals. Every day we deal with issues such as migrant farm worker health, communicable disease, pesticide exposures, and emerging infectious diseases such as West Nile Virus, Bovine Tuberculosis, Exotic Newcastle Disease and now Avian Flu.



Carol Barney

Although the challenges are many, the opportunities are far greater. The opportunity to work in a community where people know each other and work together to make improvements in the health of the community itself is a tremendous asset. We love where we live and work, and the people we serve in a community and region whose heritage and continuing success lies in agriculture.”

### **DONA MAST, RETIRED FARM OPERATOR FROM YOLO COUNTY, CALIFORNIA**

“I became involved in agriculture at an early age; I was born on a small farm in Yukon, Oklahoma. My parents were divorced when I was 6, and my mom, sister and I moved to Oklahoma City where my mother worked at Douglas Aircraft. It was there she met my “father” who yearned for a farm of his own. After they were married, we moved to California. My Dad joined his brother in starting a dairy/cotton farm in Kings County. This land was rented, so we stayed there until my parents



Dona Mast

could afford to buy farm property across the river in Fresno County.

While growing up on the farm, my first duty was to feed the baby calves. We graduated to feeding the cows and washing down the cows for milking. One of the fondest memories of that time was irrigating the cotton.

We would often put a whole watermelon in the irrigation ditch and when it was cool we would eat as much as we wanted. As I grew up and began high school I thought I was big enough to drive the hay equipment, but my father thought the hay baler was too dangerous so I was allowed to drive the manure spreader. I must have had a tetanus shot every year! This early experience and the small salary I received enabled me to attend nursing school in Fresno. I remember proudly paying for my books with my irrigating money.

After entering nursing school, I had no physical contact with farming, although farming paid for my schooling and a car. I worked in Chicago for a year, and then returned to California. My father arranged to have me meet a farmer he had met from Woodland. Well that date is history, and we have been married for 44 years. We are retired now, but I spent those intensive agricultural years doing the books, running parts and attending meetings.

I was the second woman president of the Yolo County Farm Bureau and chair of the California Farm Bureau Rural Health and Safety Committee. I have met so many interesting people from throughout California and the country and have been blessed to enjoy doing what I like best—agriculture and health. It is a joy to go into a classroom and present agriculture to young people, some of whom are experiencing farming for the first time.

Agricultural people are a special breed to whom hard work is a given, but to me it is the best of all possible worlds.”

**DIANE SCHROEDER, ADMINISTRATIVE SPECIALIST/BUSINESS OFFICE MANAGER, CENTER FOR HEALTH AND THE ENVIRONMENT, AND FARM OPERATOR IN DIXON, CALIFORNIA**

“Agriculture has been a part of my life since moving to my grandfather McKenzie’s ranch in Dixon at the age of 4. Dad and grandpa were partners in the sheep business until 1959 when they decided to sell out due to a very depressed industry.

In 1963, I married Syd Schroeder. The Schroeder family started farming west of Dixon in 1875. They raised sheep, wheat and barley. My first real job was with Armour and Co. (formally Mace Meat Co.) in Dixon as the director’s secretary and accounts payable bookkeeper. I knew most of the farmers who brought their sheep and cattle to be sold for slaughter. Syd and I were both reared in an agricultural setting and were delighted to find a piece of property in the county. We couldn’t wait to get out of the city and back into the country—after all—Dixon had grown to a very large population of 5,000! In 1971, Syd and I starting farming with his dad, Roy Schroeder. We raised sugar beets, corn, alfalfa, wheat, beans, seed crops, millet, sunflowers and almonds.

I have done all the things that a farmer’s wife does—driven tractor, trucked almonds to the receiving station, helped to move equipment, helped with the harvesting and kept the books. Agriculture was not only our livelihood, it was a part of our son’s and daughter’s activities through 4-H and FFA. I served as the community leader for Roving Clovers as well as dairy goat leader for Dixon. My grandsons, Roy (15) and Jake (12), are a seventh generation of family farmers in the Dixon area. They, too, are involved in 4-H and FFA. They have chosen market goats as their projects.



Diane Schroeder

Our farming operation includes the almond orchard and direct marketing of mandarins and oranges from the ranch. We meet many interesting folks who like to hear about farming and enjoy visiting local farms. I am happy to say I’m a farmer’s daughter, granddaughter, wife, mother and grandmother. I’ve enjoyed working with Dr. Schenker and keeping in good order the accounts for the WCAHS for the past 12 years.”

**MARTHA C. STILES, CALAGRABILITY, AND FARM SAFETY AND RURAL HEALTH PROJECT, UC DAVIS**

“I grew up in Kansas City, the ‘hub’ of the Midwest, a city-girl to most of my farm friends. And, indeed, my siblings and I were city-folk. Most of our relatives were on farms in Missouri and Kansas. Some summers, as very young kids, we would trek to these vast expanses of wheat, corn, and alfalfa and would be in awe of this strange life.



Martha Stiles

Our first trip to the farm, as little ‘seedlings,’ almost sent us over the edge. Our relatives fed us fresh vegetables, which we hardly recognized because they were not from a can. But it was the milk from the cow that totally mortified us. It wasn’t cold, it came out of that animal, and where was the carton?

Since then I’ve worked only in agriculture, with rural and farm populations for 30 years. In Montana’s beautiful Yellowstone Valley, I worked with sugar beet farmers to improve living conditions for workers. In California my work has taken me throughout the state designing and implementing farm safety programs and conducting research.

Currently through good fortune I am working with a special group of California agricultural workers. The California AgrAbility Project assists farmers and workers with permanent conditions or disabilities. Our goal is to keep them working on their farms as long as they want to stay there to continue their stewardship.

I feel very lucky to be able to work with these women and men in the fields everyday growing our food... and in this beautiful, bountiful state!

Well, as Thoreau said, “Heaven is not merely over our heads but under our feet.”

(see **Ag women** on bottom of page 7)

## **A Review of 'Women in Agriculture: Risks for Occupational Injury within the Context of Gendered Role**

By C.A. McCoy, A.K. Carruth and D.B. Reed; excerpted and reviewed by Ketty Mobed, Ph.D.

**W**omen play an important role in farming and agriculture, but only few studies have specifically focused on occupational exposures and health outcomes in this population. Most recently Carrie A. McCoy and collaborators undertook a NIOSH-funded in-depth literature query and reviewed 85 published studies on women in agriculture and occupational injury between 1974 and 2001. However, and unfortunately, women farm workers—specifically of non-



A major constraining factor for the transfer of safety knowledge is the attitude parents hold about what is acceptable farm work for girls.

Caucasian background and occupational injury among them were not included in the review.

According to the authors, two major factors have contributed to the lack of occupational health

research among farm women: 1) invisibility of farm women's work, and 2) the gendered division of labor on farms. Farm women are more likely to perform tasks, such as vegetable gardening, livestock care, bookkeeping, and manual harvesting, and less likely to do fieldwork performed with heavy machinery, pesticide applications, or supervise hired workers. Traditional roles are still the norm. According to a recent poll among farm women, '41 percent considered themselves their husbands' assistants on the farm, and 34 percent described themselves as silent partners.' Furthermore, to support their family 'farm women spent an average of 21 hours per week working off the farm.' These issues raise the differences of occupational exposures of women in traditional farming roles and women doing other work as well.

Another important observation the authors made was that 'women who describe themselves as homemakers may not perceive themselves at risk for farm-related injuries because they may not see themselves as exposed to farm tasks on a regular basis. For example, helping with tobacco by riding on the back of a tobacco setter may not seem to be risky behavior; however, risk of poisoning occurs when women inhale carbon monoxide from defective tractor exhaust systems as they ride behind the tractor.'

Other good predictors of exposure to farming women 'include the size of the farm, farm commodity, marital status, control of land, children on the farm, husband employed in off-

farm work, education and experience in farming.' For example, women who lived on smaller farms, controlled land, were not married, had more children or had a higher level of education performed more

**Fewer farm women have the same access to transfer of knowledge in the farming culture than their male counterparts do.**

farm tasks. In regard to farm commodity, women were found to play a larger role in production when living on a livestock or diversified farm compared to living on a crop-only farm. According to most of the relevant literature, large animals—especially dairy cows—represented the largest risk of injury to women.

The USDA reported in 1999 that the average age of female farm operators was 58 years in 1997, compared to an average age of 54 years in male farm operators. 'Few studies reported ages of injured women farmers.' A related problem with age, especially among women, is that 'age-related changes and chronic illnesses can affect their ability to avoid as well as recover from injury.' Physiological and anatomical differences of women can effect and

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even make them more susceptible to some specific types of injury. Several studies found that ‘falls are a common mechanism of injury.’ Also, for example, exposure to extreme weather conditions or strong cleaning solutions (used in livestock barns) may pose greater possibility of injury and illness. Farm work-related musculoskeletal disabilities have also been observed to impose a greater impact on women than men.

This literature research found that the transfer of farm safety knowledge is inequitable between men and women. Fewer farm women have the same ‘access to transfer of knowledge in the farming culture’ than their male counterparts do. According to the literature, ‘a major constraining factor for the transfer of safety knowledge is the attitude parents hold about what is acceptable farm work for girls.’ For example, ‘daughters were less likely to be taught about tractors and were less familiar with rollover protection.’ Furthermore, present

day available agricultural extension services are mostly geared toward male farm operators.

The authors conclude that not enough research has been conducted among women in agriculture. Even if research was undertaken, the type of data collected, mostly quantitative, presented a great limitation for accurate and meaningful interpretation. The authors’ recommendations are 1) further exploration of the relationships between injury to farm women and the social, cultural and economic aspects of the work environment, 2) in-depth research of exposure to injury agents, 3) to study what aspects of physical (mechanical) environment contribute to the most injuries in women, and 4) to ‘include both quantitative and qualitative design components’ and linkages when studying circumstances of farm-related injuries.

The complete review appears in the *Journal of Agricultural Safety and Health*, 2002; 8(1): 37-50. It can also be found on the Web at <http://asae.frymulti.com>

**Ag women** continued from page 5

**MARIA STOECKLIN, PH.D., FARM RESEARCH PROGRAM MANAGER, EPIDEMIOLOGIST, DEPT. OF EPIDEMIOLOGY AND PREVENTIVE MEDICINE, UC DAVIS**

“Agriculture has been a part of my life from an early age, although I didn’t realize it at the time. My great-uncle owned a small farm in Illinois, and I can remember visiting as a child and helping to collect eggs and playing with the animals. We used to play hide-n-seek in the cornfields. It was also an early introduction in the hazards of agricultural equipment and risk of injury



Maria Stoecklin

since my uncle lost his arm in a hay baling machine. After moving to California, I didn’t appreciate how diverse and different California agriculture is until I began working at the Western Center for Agricultural Health and Safety. My work here encompasses a variety of research projects focusing on the health of farmers, farm managers and hired farm workers and has

also included a project examining pesticide exposure among agricultural workers in Costa Rica. It is the breadth and diversity of projects and activities that make the work I do so interesting and rewarding.”

**SABINA FAJARDO SWIFT, PH.D., PLANT & ENVIRONMENTAL PROTECTION SCIENCES, UNIVERSITY OF HAWAII, HONOLULU**

“Sugar cane and rice fields, chickens and pigs were part of my child-hood in the village where I grew up. My education was made possible with sales of produce from my parent’s farm. I took agriculture in college to help my parents and the farm community of my village. When opportunities opened up in Laos and Vietnam, I volunteered to help people raise vegetables and small livestock to improve health and become sustainable. I would not be working passionately with immigrant farmers in Hawaii, had it not been for the unique cross-cultural and agricultural experience that changed my perceptions of people and processes. Agriculture not only affected my life, it is a way of life.”



Sabina Fajardo Swift



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AG10

## CALENDAR

**June 4**, 12:10–1p.m.,

TB 137, UC Davis Campus

***Effect of Farm Programs on Farm Health and Safety***

Daniel A. Sumner, Ph.D., Director, Agricultural Issues Center, UC Davis

**June 20–24, 2004**

Keystone Resort and Conference Center, Colorado

***2004 National Symposium on Agricultural Health and Safety***

For more information, visit [www.hicahs.colostate.edu](http://www.hicahs.colostate.edu) or [www.agromedicine.org](http://www.agromedicine.org) on the Web; or send an e-mail message to Angi Buchanan at [angi.buchanan@cahs.colostate.edu](mailto:angi.buchanan@cahs.colostate.edu).

**August 18–19, 2004**

Oakland, California

***Pesticide Illnesses and Injuries: A workshop for health care providers and ag professionals***

For a current schedule of IPM Training Workshops and Events visit: [www.ipm.ucdavis.edu](http://www.ipm.ucdavis.edu)

**September 12–14, 2004**

McMenamin's Edgefield, Portland, Oregon

***Western Agricultural Health & Safety Conference: Cultivating the Agricultural Workplace***

For more information, visit the PNASH Web site at <http://depts.washington.edu/pnash/home.htm>, or call PNASH at (800) 330-0827.