

CULTIVATION

The Newsletter for the Southwest Center for Agricultural Health, Injury Prevention & Education

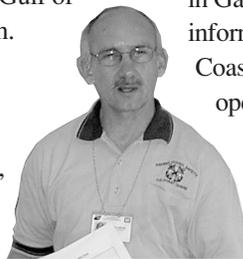
Editor: Jeffrey L. Levin, M.D., MSPH

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Gulf Coast Shrimp Harvesting

When people think of agriculture production in the Southwestern U.S., cattle ranching, row crops, cotton, citrus, and grain fields come immediately to mind. However, the Gulf of Mexico is a rich source of a variety of fish and shellfish. Louisiana harvests roughly 91 million pounds of shrimp and 45 million pounds of crab and lobster annually. Among the five Gulf states, Louisiana contributes 40% of the shrimp production, 34% of fish, 20% of crabs and lobster and 4% of oysters harvested. Brownsville and Port Arthur in Texas collectively support the largest offshore shrimp fleet in the nation. Galveston Bay is Texas' most valuable commercial estuary, supplying two-thirds of the state's oyster harvest and 40% of all seafood harvested in the coastal bay complex. (Handbook of Texas Online <http://castor.lib.utexas.edu>)

The spring Board meeting for the Southwest Center for



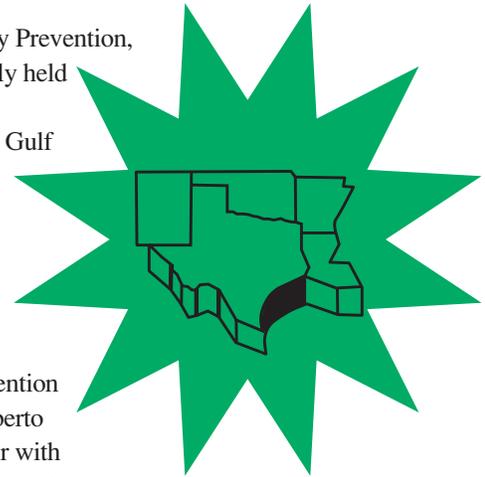
GILBERTO GALLARDO

Agricultural Health, Injury Prevention, and Education was recently held in Galveston, TX. An information session about Gulf Coast shrimping operations was included to explain worker safety issues and to explore potential research or intervention projects. Mr. Gilberto

Gallardo, Safety Examiner with the Commercial Fishing Vessel Safety Program, U.S. Coast Guard presented cases -fatalities and

serious injuries- to demonstrate the various mechanisms involved. In addition to entanglements, slips, missing or damaged safety equipment, and vessel hazards; lifestyle behaviors appear to contribute to drowning and other mishaps. He also demonstrated required safety equipment, common use and mis-use, and unsafe practices that are addressed in training sessions conducted by the Coast Guard to improve worker safety on commercial fishing vessels.

Available data estimates between 160-180 fatalities/100,000 workers annually in commercial fishing, well above the 32 fatalities/100,000 workers goal set for the maritime industry as a whole. The Gulf Coast district is second only to Alaska in fishing fatalities. The majority of losses occur on vessels less than 80 feet in length. Over 98% of all U.S.



Spring 2003

SW Center Produces AgConnections

Legislation passed in 1990 established NIOSH as the lead agency to create an Agricultural Initiative program of research, education and intervention designed to reduce agricultural injuries and fatalities. Today, ten agricultural centers across the country support projects that address agricultural safety and health issues of regional concern. To facilitate collaboration and share the progress, results and products of projects under the Agricultural Initiative, NIOSH has invited the Centers to participate in the publication of a quarterly newsletter.

Following a competitive bid process, the project was awarded to the Printing and Publications department of the University of Texas Health Center at Tyler. Working closely with Center Director, Jeffrey L. Levin and SW Center staff, the inaugural issue of AgConnections was disseminated in January 2003, the second has recently been distributed and the third is being assembled.



SW Center advisory board members, researchers, and staff welcomed the opportunity to see shrimp vessels, despite the rain.

See Harvesting Shrimp, page 4

SW Center Selects Feasibility Studies

The SW Center has instituted a regular cycle of funding for feasibility studies. The first projects were awarded in October, 2002 after review and scoring by a review panel including Advisory Board members and research scientists. The projects are to be completed within 10 months, produce a manuscript, written report and/or proposal for additional funding from other sources. The second round of reviews and awards were announced March 15, 2003

October, 2002

Health and Safety Needs Assessment Among Medically Underserved & Underinsured Farm Workers in East Texas
PI: Eva Doyle, PhD, Baylor University

This pilot study is designed to assess the health/safety needs of medically uninsured/underinsured farmworkers (migrant/seasonal farmworkers, new immigrants, and long-term rural residents) in East Texas. Both English and Spanish versions of a risk assessment instrument will be developed, validated, and administered by trained bi-lingual interviewers with a convenience sample of 300. Results will be compared to those reported for general US farmworker and non farmworker populations, as a step toward establishing collaborations between community and government organizations to build capacity for prevention efforts and to secure funding for needed services.

Exposure Risk for Noise and Organic Solvents Among Farmers
PI: Annette Hurley, M.S., CCC-A, Louisiana State University Health Science Center

Significant long-term noise exposure can cause irreversible damage to the microscopic anatomy of the hair cells and supporting structures of the ear. These products are used as crop surface sprays, plant systemics, animal systemics, aerosols, baits, and fumigants.

There is evidence that as many as 30 million American workers may be exposed to hazardous noise and ototoxic chemicals. To date, no studies have explored hearing loss among agricultural workers related to the type and extent of various pesticide exposures. This proposal seeks to assess the risk from both noise and organic solvent exposures in order to develop a risk assessment tool and establish methods of data collection for both noise dosimetry and organic solvent exposure. Preliminary results will be used to pursue future funding to evaluate the two exposures and their effects on hearing threshold shifts among farmers.

March, 2003

The Use of Syndromic Surveillance in Agricultural Workers
PI: Laura Banks, DVM, University of New Mexico

Syndromic surveillance is the tracking of trends in disease symptoms in a population, prior to definitive laboratory or clinical diagnosis of individual cases. Such tracking allows for a more rapid identification of potential disease outbreaks compared to typical disease reporting, which depends on confirmed laboratory or clinical diagnosis of specific diseases in individuals. The value

of syndromic surveillance potentially extends to the numerous zoonotic diseases that can occur in agricultural settings. An outbreak of a zoonotic disease in an agricultural setting, whether naturally occurring or intentionally introduced, might first be detected in the human agricultural worker. Syndromic surveillance could be conducted independently of, or in concert with, surveillance for diseases in animals.

Several public and private organizations are developing and testing syndromic surveillance systems to monitor naturally occurring disease symptoms and to detect intentionally introduced pathogens in both animals and humans. The utility of these systems for detecting zoonotic disease outbreaks in agricultural facilities will be evaluated.

Occupational Health Curriculum for Farmworkers in Texas
PI: Soledad Vela-Acosta, University of Texas at Brownsville

This project seeks to adapt already existing occupational and environmental health and safety curricula materials, create bi-lingual classroom materials, and evaluate the feasibility of embedding the material into the High School Equivalency Program (HEP) sciences offered specifically to farmworkers in Cameron county, TX. The adaptation process will be highly participatory involving HEP teachers, former and current students, and curriculum specialists.

Both HEP and public school teachers will participate in training on implementation of the adapted curriculum. The feasibility of implementation will be evaluated through assessment of high school and HEP teachers and students' perceptions of content value, compliance with Texas Essential Knowledge and Skills (TEKS) objectives, and classroom implementation.

Midwest Migrant Stream Forum: Research Track Sets Record

The planning committee for the research track of the Midwest Migrant Stream Forum, held in New Orleans, LA November 21-24, 2002 worked actively to invite, review, and schedule presentations that bridge research findings with interventions or service opportunities. Continuing an initiative launched by the SW Center in conjunction with NCFH leadership, the Research Track serves as a bridge between academicians, researchers, and farmworker advocates to generate scientific data related to this special worker population.

Two intensive sessions on research topics were scheduled this year. One taught Participatory Research Involving Community Based Partners. The other focused on using sound research principles to conduct needs assessments. Each of the presentations in the research track was filled to capacity or overflowing. For the first time, a research poster session was added to the opening reception. This facilitated interaction between all participants, led to new collaborations, and stimulated discussion about research ideas and methods. The poster session was very well received and will be expanded in next year's conference.

Message from the Center Director

Jeffrey L. Levin, M.D., MSPH



Torey Nalbene, our Deputy Director, and I had the privilege to attend a Tractor Workshop recently sponsored by NIOSH. When I advised my family that I would be traveling in the middle of winter to Pittsburgh, Pennsylvania to hear about Tractor-Related Injury and Death, they were puzzled. What threats could a tractor, the wholesome symbol of rural America, pose? What became immediately apparent to me is how mis-perceptions and behavioral attitudes toward work settings play an important role in risk of morbidity and mortality.

One of the facts we heard at the meeting was that tractor overturns and run-overs are a major cause of fatalities among farmers. Based upon a 2001 tractor survey conducted by NIOSH, there were 4.7 million tractors in use. The percentage of tractors equipped with rollover protective structures (ROPS) increased from 38 percent in 1993 to 50 percent in 2001. Though this has resulted in a substantial improvement in the number of ROPS equipped tractors per farm, most of this change has been a function of a 1985 design standard for new tractors combined with the attrition of older tractors.

Much work remains to be done in order to understand farmers' decision-making approaches to embracing ROPS and adopting safe work practices likely to reduce disability and death. The purpose of the Pittsburgh NIOSH conference was to allow the Agricultural Centers a collaborative and collective opportunity to develop a new road map to achieve this goal. This road map will include a wide array of disciplines and activities - policy-making, intervention, assessing economic impact, education, surveillance, technologic advancement, etc. - necessary to address these important concerns. Dr. Howard, the new Director of NIOSH, has offered his commitment to this important effort.



Jeff Levin

Remember the Tractor Factor

Spring brings with it not only flowers, sunshine, and rain, it also brings increased risks for serious injuries and fatalities on public highways. Many rural communities experience a substantial increase in tractors and farm machinery along public highways as farmers prepare the soil, plant, fertilize, and ultimately harvest their crops. Encroachment of housing and commerce in traditional farming communities as well as the phenomenon of gambling casinos in non-urban centers have changed the nature of traffic in many rural communities.



When Dr. Hall convened focus groups in communities in the Arkansas Delta to discuss local agricultural safety risks, their top recommendation was to institute a public awareness campaign about agricultural

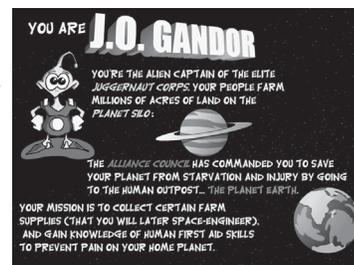
equipment on area highways to prevent traffic accidents. The large casino complexes across the Mississippi River attract people from Little Rock, Memphis, and other urban centers. Many motorists are unaccustomed to driving in rural areas and therefore are unprepared to deal with slow-moving vehicles. Working with the University of Arkansas School for Medical Sciences, the project team designed several billboards that have been posted throughout the area reminding motorists of "The Tractor Factor".

Students working on health education projects this summer will conduct interviews at various locations in the area to determine whether motorists noticed the billboards, exercised greater caution while driving, and their general impression of the message.

Can J.O. Gandor Save The Planet?

The Healthy Farm Families Initiative research project team in the School of Nursing at Southeastern Louisiana University collected data about children's agricultural injury risks in 657 telephone interviews with farm women in SE Louisiana. Focus groups comprised of farmwomen and youth generated ideas for interventions to increase knowledge about work risks, first aid skills, and injury prevention. One idea that generated great excitement for both parents and kids was developing an interactive computer game that could be used as a classroom activity or independently.

The development process of the First Aid Farm Quest has been highly participatory, involving ongoing student groups, education and health professionals, and video game designers. Designers Eric Gilley and Neal Boyd have created animation, inserted video clips, and polished user navigation within the games to make the experience fun and educational. The CD is now ready for beta testing. The target audience is 5th - 6th grade students. If you are interested in helping the project with beta testing, input is sought from classroom teachers, middle school students, and agricultural/health educators. Completing the game and evaluation process should take no more than 2 hours. Feedback will be sought beginning June 1, 2003. Anyone interested in assisting with this development stage should email Ann Carruth: acarruth@selu.edu.



Harvesting Shrimp, *continued from page 1*

commercial fishing vessels fall into this size range. (Proceedings of the International Fishing Industry Safety and Health Conference, Oct. 2000, Woods Hole, MA, NIOSH and Harvard School of Public Health)

Gulf shrimping is accomplished from wooden or steel-hulled trawlers with a crew comprised of a captain, rigger and header. Nets are either thirty-six or forty-five feet in length. The most commonly used rig is the twin-trawl; it uses four nets that are dragged along the sea bottom to harvest the catch.

Texas shrimpers typically fish for up to three weeks in the Gulf before returning to port. They must work at night since the brown or Brazilian shrimp is nocturnal. The header sits on a small stool on the rear workdeck and removes the heads from the thousands of shrimp that are netted. The rigger cleans and repairs the nets and helps the header. The captain is the backbone of the industry. His job is to find and net the shrimp and return them and his crew safely to port. He is usually an experienced fisherman and pilot who is entrusted with about \$300,000 worth of equipment. Members of the crew also serve as cook, pilot, material manager, sanitation workers, and deck hands. Current estimates indicate that 85-90% of Gulf coast shrimpers are Vietnamese, the rest being Caucasian, Cajun, and Mexican. Bay shrimpers, similar ethnic

distribution, work daily from early morning until noon, when they return to port. Bay boats range in size from 18 - 40 feet, typically with a one or two man crew.

The Texas shrimping industry has been beset by a number of economic problems since 1979. These include prohibition of fishing in Mexican waters, rising fuel costs, increase in the number of trawlers, diminishing catch, accidental killing of sea turtles, overcapitalization, competition, ethnic conflicts, and increased federal regulations.² Attention to vessel condition, safety standards and worker training tends to be addressed in relation to operation profitability.

The SW Center group also had the opportunity to visit the fleet of vessels used for Gulf shrimping. Due to the rainy conditions, the demands of working on a wet, mobile, cluttered surfaced were reinforced. The SW Center will explore opportunities to work with this industry in order to reduce injuries and fatalities among shrimp fishermen.



(L to R) Greg Kullman, Ph.D., NIOSH Program Officer; Karen Mulloy, D.O., MSCH, Chair, SWC Advisory Board; Gilberto Gallardo, U.S. Coast Guard; Jeffrey Levin, M.D., MSPH, Center Director.

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