



National  
**Farm**Medicine  
Center®

## 2006 YEAR IN REVIEW

*2006 Year in Review*



## FROM THE DIRECTOR



The National Farm Medicine Center (NFMC) lived up to its name in 2006, leading several high-profile, national initiatives.

In January, the NFMC's National Children's Center for Rural and Agricultural Health and Safety co-hosted the Agriculture Sector Town Hall meeting in Seattle, Washington, to help the National Institute for Occupational Safety and Health (NIOSH) set a research agenda for the future. In June, the NFMC hosted the National Institute for Farm Safety five-day conference in Sheboygan, Wisconsin, with 170 participants from across the U.S. and several countries. The opening plenary session featured Dr. John Howard, Director of NIOSH. In August, the NFMC joined the U.S. Department of Agriculture and the University of Wisconsin in breaking ground for the Institute for Environmentally Integrated Dairy Management research building outside of Marshfield. Construction of this facility creates new opportunities for research collaboration.

The NFMC's National Children's Center for Rural and Agricultural Health and Safety, working through its Childhood Agricultural Safety Network, launched a three-year public awareness campaign in September. During the first year, the network is delivering the unified message that children younger than 12 should never be on or near tractors. The theme: "It's easier to bury a tradition than a child." The network is a coalition of national organizations.

The NFMC continued to help shape discussion of agricultural safety and health issues by editing the *Journal of Agromedicine*. The journal is a nationally-indexed research publication that examines health and safety issues affecting the producer, consumer and environmental health of communities impacted by agricultural practices.



Among NFMC activities of 2006 was its celebration of 25 years as a center. The NFMC invited back many former researchers, staff and area farmers for an April celebration. The event featured video testimonials from agribusiness broadcaster Orion Samuelson (WGN radio, Chicago) and many regional farmers who have participated in NFMC research and programs. Another highlight was the publication of a hardcover book on the NFMC's history.

Two men influential in the history of NFMC also made the news. An endowed research chair named for Dean Emanuel, M.D., NFMC medical director emeritus, received a boost of nearly \$100,000 from the annual Auction of Champions fundraising event. And former NFMC and Marshfield Clinic Research Foundation Director Paul Gunderson, Ph.D., was named the 2006 Stueland Scholar, an award given each year to an individual who has made significant contributions in the areas of emergency, agricultural and/or alcohol and drug abuse medicine.

As the year came to a close, a new resource was published in response to requests from farm owners and safety professionals involved in agritourism. The full-color, 37-page report, *"Agritourism: Health and Safety Guidelines for Children,"* is the first set of guidelines of its kind. The resource will be widely disseminated in the coming months.

Yes, 2006 was truly a banner year for us; and it set the stage for even greater activities in 2007!

A handwritten signature in dark ink that reads "Barbara Lee". The signature is fluid and cursive.

Barbara Lee, R.N., Ph.D.

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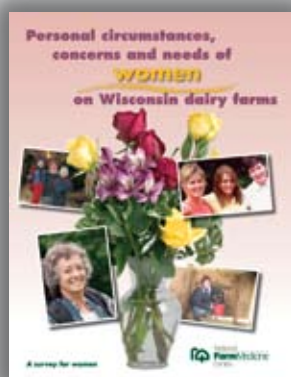


### *Photo acknowledgements*

*Photos contributed by: Tammy Ellis, Regina Fisher, Chris Hanna, Scott Heiberger, Steve Kirkhorn, Barbara Lee, Barbara Marlenga, Mark Purschwitz, and the U.S. Department of Agriculture.*



## AGRICULTURAL ENGINEERING & POLICY



**Mark Purschwitz, Ph.D.**, received funding to begin a study of the personal concerns and needs of women on Wisconsin dairy farms. Anecdotal reports from women on farms around the nation indicate that some experience role incongruence, extreme time pressure, sleep deprivation, lack of appreciation and respect, social isolation, absence of recreational time away from the farm, and intergenerational conflict. The project will begin with a statewide random sample mail survey of women

to describe their circumstances, concerns and needs. A report will be issued and distributed statewide to promote and facilitate the addressing of these issues.

In addition, Dr. Purschwitz is developing research proposals to: 1) use functional magnetic resonance imaging to study brain reactions to agricultural safety graphics; and 2) examine Wisconsin laws relating to farm equipment travel on public roads, including collision-related litigation.

Dr. Purschwitz continues to study potential financial incentives for retrofitting rollover protective structures (ROPS) on older farm tractors, as part of the National Institute for Occupational Safety and Health (NIOSH) National Agricultural Tractor Safety Initiative. He also continues to answer technical inquiries from farmers and equipment dealers around the nation regarding availability of retrofit ROPS for older farm tractors.



**Tammy Ellis**, research program associate, is assisting on the "Personal Circumstances, Concerns and Needs of Women on Wisconsin Dairy Farms" project. In addition, Ellis is assisting in development of the functional magnetic resonance imaging proposal, and she helped raise funds for the National Institute of Farm Safety endowment. Ellis also worked on the Journalists Workshop, assembling and editing the pre-workshop booklet used by participants and faculty. She also has provided educational and informational outreach for the center.



**Marlene Stueland**, center manager, provided professional support and financial management to the center director, research scientists and staff. She manages the NFMC's major meetings and is responsible for NFMC procedures and project implementation. She served as the conference coordinator for the National Institute for Safety Conference held in Sheboygan, Wisconsin, June 25-30, 2006.



**Yvonne Cerne**, administrative secretary, worked extensively with the Public Health Microbiology Lab, and provided support for the National Institute for Farm Safety Meeting and the Journalists Workshop for childhood agricultural injury prevention.

## AGROMEDICINE



**Steve Kirkhorn, M.D., M.P.H.**, is medical director of both NFMC and the Occupational Health Department of Marshfield Clinic. His research program includes the Marshfield Pediatric Asthma study, part of a pilot investigation into the potential influence of farming and other exposures on the development of asthma and other atopic conditions among children. Preliminary results of a study involving 570 children in central and northern Wisconsin indicate that children who grow up on farms are less likely to have allergic conditions, and to a lesser degree, asthma, than their city and town counterparts. Dr. Kirkhorn presented results at the 18th International Agricultural Medicine and Rural Health conference in Lodi, Italy.

In other research, Dr. Kirkhorn secured funding to conduct research to assess the prevalence of musculoskeletal disorders in central Wisconsin dairy farmers and dairy technicians. He also presented at the First International Agricultural Cohort Consortium meeting, sponsored by the National Cancer Institute, on a plan to link studies within the Marshfield Epidemiologic Study Area (MESA) Farm Cohort with international collaborators.

Dr. Kirkhorn completed his third year as editor of the *Journal of Agromedicine*, shaping the content of the nationally-indexed, peer-reviewed publication. Dr. Kirkhorn was re-appointed to a two-year term (2006-08) on the U.S. Department of Agriculture Air Quality Task Force, serving on the Particulate Matter sub-committee. In addition, he accepted an invitation to join the AgriSafe Network board of directors. The non-profit AgriSafe Network is a diverse group of rural-based hospitals, health clinics and county health departments that provides preventive occupational health services to farmers. Dr. Kirkhorn also mentored a dairy veterinarian in the University of Wisconsin-Madison Masters of Public Health program. The student's project examined attitudes of farmers and their families toward drinking raw milk, a practice that has raised health concerns because of the presence of potentially harmful bacteria in non-pasteurized milk.



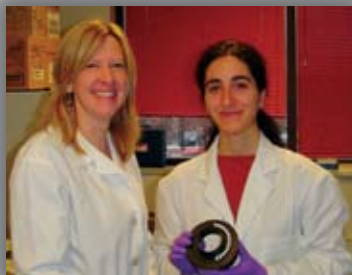
**Scott Heiberger**, communications specialist, handles editing, writing, media relations and marketing duties, in addition to representing the NFMC at meetings and conferences. He coordinated the third annual Journalists Workshop on childhood agricultural health and safety, held in October in the tree fruit country near Wenatchee, Washington. Journalists in attendance represented print and electronic media from Seattle, Portland and across the Northwest. The workshop focused on pesticides, farmworker housing and adolescent workers. Heiberger also is managing editor of the *Journal of Agromedicine*. Other projects in 2006 included editing the hardcover history of the NFMC and coordinating multi-media for the 25th anniversary celebration event.



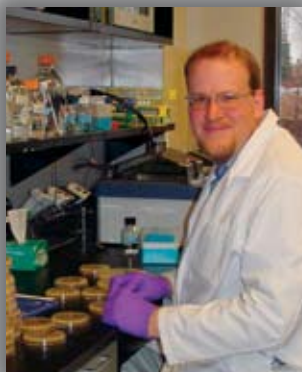
**Ruth Mueller**, administrative secretary, worked on all aspects of the NFMC's host role in the National Institute for Farm Safety Meeting, as well as in publishing the peer-reviewed *Journal of Agromedicine*, coordinating correspondence amongst authors, reviewers and NFMC editors.



## PUBLIC HEALTH MICROBIOLOGY



**Mark Borchardt, Ph.D.**, launched the Wisconsin Water and Health Trial for Enteric Risks (WAHTER) study, an ambitious 14-community project in which water quality is being linked with the health of the more than 1,600 children and adult study participants. The study, sponsored by the U.S. Environmental Protection Agency, is the first of its kind. During the first phase of the study, ultraviolet lights are installed at every city well in seven communities, with the other seven communities serving as a control group. The lights provide additional purification to whatever system was already in place, and kill any remaining germs present in the water. After a period of time, the lights are moved to the other seven communities. Throughout the study, families are recording any household illnesses on health symptom checklists. Findings will help guide future EPA policy on protecting our nation's groundwater resources and public health. In other EPA news, Dr. Borchardt serves on the agency's Science Advisory Board's Drinking Water Committee, and advises on technical issues underlying EPA policies and decision-making.



In a project separate from the WAHTER study, Dr. Borchardt found viruses in two of three deep city wells he tested in Madison. As a result of his findings, the Madison Water Utility adjusted its chlorine dosages. Dr. Borchardt also received funding from the Milwaukee Metropolitan Sewerage District to investigate transport of viruses to Milwaukee's beaches. In Marshfield, Dr. Borchardt is collaborating with scientists at the new U.S. Department of Agriculture laboratory (part of the Institute for Environmentally Integrated Dairy Management) on manure management practices for controlling pathogens in groundwater.



**Steve Foley, Ph.D.**, an infectious disease scientist, continued to serve as a Science Advisor for the U.S. Food and Drug Administration's Office of Regulatory Affairs, assisting with development and implementation of more efficient methods to monitor the safety of the U.S. food supply. Dr. Foley received a grant from the Marshfield Clinic Research Foundation to develop methods that can be used to aid in the determination of the sources of microbial contamination in watersheds. His research focuses on trying to understand antimicrobial resistance and the disease-causing mechanisms utilized by pathogens that arise through the food chain. Dr. Foley recruited a postdoctoral research fellow, Aaron Lynne, Ph.D., to study factors that lead to the development and persistence of antimicrobial resistance in pathogens that are important to animal and human health. Dr. Foley also mentored two graduate students who successfully defended their masters theses. Their work, along with that of a summer intern, broadened the understanding of antimicrobial resistance in *Salmonella enterica* and identified potential vaccine targets for the disease avian colibacillosis. Dr. Foley also served on the review panel for the National Institute for Occupational Safety and Health Agricultural Research Centers in April.



**Phil Bertz**, research associate in the Public Health Microbiology Lab, continues with development of a novel filter to capture viruses from large-volume water samples. He traveled to 14 communities under the EPA WAHTER study to collect water samples, driving nearly 25,000 miles, as well as processing and analyzing those samples in the laboratory.





**Donna David**, research associate, joined Dr. Foley's laboratory in December. She is developing methods to track *E. coli* in the environment. Previously she worked in the Marshfield Clinic Research Foundation Center for Human Genetics, and was responsible for optimizing new assays and developing short insertion/deletion polymorphisms.



**Pravin Kaldhone, M.S.**, research associate, completed his master's degree work in Dr. Foley's laboratory and joined the staff following completion of his graduate work. He finished a project exploring the molecular characterization and antimicrobial susceptibility of *Salmonella enterica* serovar Heidelberg isolates of food animal origin, and presented results at the American Society for Microbiology General Meeting. In addition, he has assisted with projects to explore the genetics of transmissible antimicrobial resistance among different *Salmonella* strains.



**Aaron Lynne, Ph.D.**, postdoctoral research fellow, joined Dr. Foley's laboratory in August, 2006. Dr. Lynne has extensive experience in the development of methods for the detection and control of *E. coli*, a common pathogen in food animals and humans. He is working on projects to better understand the factors that contribute to the spread of antimicrobial resistance in *Salmonella*. Dr. Lynne came from Iowa State University, where he worked on the development of vaccines and diagnostic tests for *E. coli*.



**Sue Spencer**, senior research associate, assisted with a major study that assessed the link between antibiotic use in the poultry industry and antibiotic resistance of bacteria in humans, detecting streptogramin resistance genes and inducible resistance in enterococcal isolates from poultry and humans. She also developed methods to quantitate enteric viruses in groundwater and evaluated the effectiveness of *Cryptosporidium* removals in water treatment processes.



**Matt Volenec**, research associate, joined Dr. Borchardt's laboratory in June. He has worked primarily on the WAHTER study, splitting his time between collecting water samples in participant communities and testing the samples for enteric viruses.



## CHILDHOOD AGRICULTURAL HEALTH & SAFETY



**Barbara Lee, Ph.D.**, directed the National Children's Center for Rural and Agricultural Health and Safety for the eighth consecutive year, in addition to her overall directorship of the NFMC. Dr. Lee facilitates implementation of the NFMC strategic plan, including administrative management, resource development and communications. The National Children's Center completed Year Three of its second five-year National Institute for Occupational Safety and Health (NIOSH) grant.

In June, Dr. Lee convened a small group of agriculture industry leaders and federal agency representatives to discuss the potential of developing a U.S. Coalition of Agricultural Safety. She subsequently secured funding from the Farm Foundation to continue this planning process.

The center produced two important outreach publications: a manual to guide child safety leaders in promoting "Safe Play Areas on Farms" via model demonstrations at major farm events; and a resource handbook on *"Agritourism: Health and Safety Guidelines for Children,"* that farm owners and volunteers can use when hosting children at agritourism operations. The Center conducted its third annual Journalists Workshop on childhood agricultural health and safety, in the orchard country of central Washington. The workshop examined children at work, farmworker housing and environmental health hazards. Thirty journalists from across North America have participated in these workshops.

Dr. Lee served on the U.S. Department of Agriculture's Youth Farm Safety Education and Certification steering committee; the Wisconsin Injury Research Center advisory board; and the Pacific Northwest Agricultural Research Center advisory board.



**Barbara Marlenga, Ph.D.**, addressed an issue common to rural areas across the nation – youth operating tractors on public roads. She studied youth highway tractor crashes in Wisconsin for the years 1994-2003 to evaluate the effectiveness of a Wisconsin law mandating tractor certification classes for youth ages 12-16, allowing them to operate tractors on public roads without a driver's license. Results, published in the journal *Injury Prevention*, indicated no reduction in youth tractor

crashes after the law was passed, and found that the tractor certification course did not cover the major factors contributing to youth tractor crashes on public roads. The bottom line, suggested Dr. Marlenga in a follow-up editorial, is that the exemption allowing unlicensed youth to operate tractors on public roads is outdated and should be abandoned. In another matter of law, Dr. Marlenga is wrapping up a NIOSH-funded study on the potential impact on injury if the family farm exemption from the federal child labor laws – the Hazardous Occupations Orders for Agriculture (HOOA) – were removed. The findings will be used to inform the U.S. Department of Labor's mandate to update the child labor laws in agriculture.



Dr. Marlenga continued research with her Canadian colleagues. She co-authored a manuscript in *Canadian Medical Association Journal* describing a retrospective case series study of fatal injuries to pre-school aged children on Canadian farms. Results indicated that pre-school children exposed to agricultural worksites are at higher risk of fatal injury than other children of the same age in Canada.

Dr. Marlenga also co-authored a chapter with Barbara Lee on childhood agricultural injury prevention in an American Public Health Association textbook on "Injury Prevention for Children and Adolescents." Dr. Marlenga was recognized at the National Rural Health Association conference when her poster on the North American Guidelines for Children's Agricultural Tasks (NAGCAT) five-year assessment and priorities for the future was selected as the first runner-up for outstanding poster.



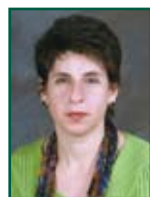
**Regina Fisher**, agricultural youth safety specialist, is the National Children's Center's primary coordinator for technical assistance. This past year she led efforts related to the internal "Creating Safe Play Areas on Farms" projects, and provided assistance to external researchers regarding Safe Play and NAGCAT. Fisher also coordinated development of the Childhood Agriculture Safety Network's Childhood Agricultural Safety Public Awareness Campaign, "Keep Kids Away

From Tractors." Fisher served as the Center liaison for the NIOSH Agricultural Center Evaluation, and coordinated efforts for the Center's year end report and its submission to the National Academy of Science Review. She provided expert presentations at numerous conferences including the Safe Kids Worldwide Conference in Washington, D.C.

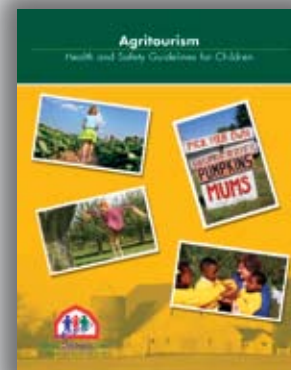


**Michael Humann, M.S.**, agricultural health and safety research specialist, led development of a user-friendly resource for agritourism operators large and small. *'Agritourism: Health and Safety Guidelines for Children,'* is a full-color, 37-page booklet published by the National Children's Center. The guidelines are the first to be developed applying specifically to children. They were developed over a 14-month period with input from two dozen agricultural health

and safety professionals and agritourism operators across the country. The booklet includes tips on identifying and reducing hazards found on farms, such as those involving animals, water, machinery and hygiene. Convenient checklists help owners implement recommendations before visits by agritourists. Humann's other responsibilities included coordinating the National Children's Center mini-grant program.



**Amy Liebman, M.P.A.**, is the NFMC's formal consultant through the Migrant Clinicians Network. Amy works as a "virtual" staff member from her home base in Salisbury, MD. She handles most technical assistance inquiries related to migrant children and provides updates to NFMC staff regarding relevant research, education and policy activities at regional and national levels. Amy also brings unique perspective to the Childhood Agricultural Safety Network as the Migrant Clinicians Network representative.



## NFMC Historical Highlights

**1959:** National Institute of Health (NIH) awards Marshfield Clinic federal grant to study farmer's lung disease

**1960s:** Research expands to include study of organic dust toxic syndrome and maple bark disease

**1972:** NIH awards Marshfield Clinic grant for Specialized Center of Research to study pulmonary response to organic dust exposures

**1979-80:** Task force reviews agriculture related medical problems as seen by Marshfield Clinic physicians, leads to feasibility study and formal recommendations to establish a farm medicine center

**1981:** NFMC formed as a program of Marshfield Clinic Research Foundation; farm accident rescue training programs initiated

**1982:** NFMC receives start-up funds from Marshfield Clinic and is formally introduced to community and media; first Auction of Champions fund-raising event generates \$11,000 for NFMC

**1983:** NFMC begins health screenings at annual Wisconsin Farm Progress Days; *Ag Day*, a program featuring 22 health topics, is developed and distributed to 70 national television stations

**1984:** *AgriHealth*, a five-part video education curriculum, is developed and disseminated nationally to high school agriculture teachers

**1985:** *Today's Farm Health* radio series, featuring actor Eddie Albert, is broadcast by more than 200 radio networks nationwide

**1987:** Emergency room-based farm injury surveillance and noise exposure in agriculture pilot study initiated; NFMC receives National Institute for Occupational Safety and Health (NIOSH) contracts to develop data collection tools for farm injuries and farm chemical exposure

**1988:** *The Country Doctor* medical advice column featured in monthly farm magazines; NFMC environmental health project funded by Amoco Corporation to address underground fuel storage on farms

**1989:** NFMC receives funding from NIOSH for population-based farm injury surveillance; NFMC hosts Midwest Conference for Farmers with Disabilities

**1990:** NFMC awarded NIOSH grant for Wisconsin Farmers Cancer Control Program; NFMC releases *A Guide to Tractor Roll Bars and Other Rollover Protective Structures*

**1991:** NFMC designated a NIOSH Center for Agricultural Disease and Injury Research, Education and Prevention; Farmers Caps and Hats research leads to national media coverage

# 25 YEARS OF THE NATIONAL

## Farm Center celebrates past, present, future

More than 200 people gathered at Marshfield Clinic April 27, 2006, to celebrate the 25th anniversary of the National Farm Medicine Center.

Physicians and support staff, scientists, donors, members of the community and government leadership joined in an evening of celebration and reflection with a keynote address by Orion Samuelson of WGN Radio Networks. The event paid tribute to a quarter century of NFMC's leading role in addressing human health and safety associated with agricultural work life and environments.



outreach





# NATIONAL FARM MEDICINE CENTER

of agricultural research, safety and health



Among those congratulating NFMC via videotape were Seventh District Congressman Dave Obey and United States Senator Herb Kohl.

“The work you do saves lives of children, our friends, neighbors,” Rep. Obey said. A key architect of securing early federal funding for agricultural health and safety research.

Said Sen. Kohl: “As home to the nation’s preeminent facility for preventing childhood farm injuries, you have made a difference in countless rural communities.”

research



education

*Paul Gunderson, Ph.D., former director of the NFMC and Marshfield Clinic Research Foundation, accepted the 2006 Stueland Scholar award from NFMC manager Marlene Stueland. The award presentation was part of the celebration marking the 25th anniversary. The award is named after the late Dean Stueland, M.D., M.P.H.*



**1992:** NFMC named one of 10 Prostate, Lung, Colorectal and Ovarian Cancer Screening Centers funded by National Cancer Institute; National Childhood Agricultural Injury Prevention Symposium convenes; NFMC is funded by Federal Maternal and Child Health Bureau as a Children’s Safety Network-Rural Center

**1993:** Environmental Health Laboratory established, research emphasis on pathogen virulence and infectious disease

**1994:** NFMC receives funding from NIOSH for Upper Midwest Health Study

**1995:** NFMC hosts Midwest Seminar for Health Care Providers: Common Rural and Agricultural Health Problems, Madison

**1996:** NFMC leads national committee that develops National Action Plan for *Childhood Agricultural Injury Prevention*, adopted and funded by U.S. Congress

**1997:** NFMC designated by NIOSH as National Children’s Center for Rural and Agricultural Health and Safety; Reproductive Toxicology Lab established, emphasis on studying adverse effects of agricultural chemical exposures on human reproduction

**1998:** NFMC receives NIOSH grant to study children’s agricultural work guidelines for relevance, applicability and effectiveness

**1999:** North American Guidelines for Children’s Agricultural Tasks (NAGCAT) disseminated nationally, including on dedicated Web site; NFMC receives National Cancer Institute funding to research molecular epidemiology of prostate carcinogenesis

**2000:** NFMC leads the National Adolescent Farmworker Occupational Health and Safety Advisory Committee and publishes recommendations in 2002; NFMC awarded NIOSH grant to assess injury prevention impact of NAGCAT using a case series design

**2001:** NFMC hosts National Summit on Childhood Agricultural Injury Prevention and publishes results in 2002

**2002:** NFMC funded by NIOSH to study whether modification of federal child labor laws could reduce injuries to children on farms

**2003:** NFMC publishes *Creating Safe Play Areas on Farms*; The U.S. Environmental Protection Agency awards NFMC STAR grant to estimate acute childhood illnesses attributable to drinking water

**2004:** NFMC releases *Benchmarking Report: Hiring and Safety Practices for Adolescent Workers in Agriculture*; First national Journalists Workshop convenes to enhance media reporting of agricultural health and safety issues

**2005:** NFMC assumes editorship of the *Journal of Agromedicine*, a peer-reviewed, National Library of Medicine-indexed quarterly journal





## NATIONAL INSTITUTE FOR FARM SAFETY

*June 25-30, 2006  
Sheboygan, Wisconsin*

In June, the National Children's Center and National Farm Medicine Center hosted the annual meeting of the National Institute for Farm Safety (NIFS). Nearly 170 agricultural safety and health professionals from across North America attended at the Blue Harbor Resort and Conference Center in Sheboygan, marking the first time the meeting had been held in Wisconsin since 1978.

The conference theme, "Meeting Challenges Together," reflected the importance of researchers connecting appropriately and adequately with farmers and safety professionals.

Participants attended educational sessions and viewed posters and displays on such varied topics as the impact of litigation on the development of farm safety practices, reducing farmers' risk for hearing loss, incentives to encourage ergonomic behavior in Latino farmworkers, youth all-terrain vehicle behavior, and injuries to farm women over age 50. Optional tours included the Case New Holland tractor assembly plant in Racine as well as a package tour of several Sheboygan-area farms. John Howard, M.D., director of the National Institute for Occupational Safety and Health, spoke during the opening session.

The NIFS, established in 1962, is an independent, non-profit professional society of individuals who devote all or a major portion of their work to agricultural safety. Mark Purschwitz and Barbara Lee are past presidents of NIFS.



## OUTREACH

The National Farm Medicine Center communicates results of its research to farm families and health and safety professionals. The NFMC translates research into practice via two newsletters, an annual report, Web site, formal presentations, articles in peer-reviewed science journals, technical assistance to public health professionals and participation in fairs and conferences.

The administration core provides a framework to support, guide and monitor the progress of the NFMC's initiatives in research, outreach and education. It also facilitates growth through fundraising, endowments, grants and contracts. Overseeing administration is Barbara Lee, Ph.D.

### Outreach highlights in 2006:

- Media highlights included a column in *Successful Farming* magazine on Safe Play Areas and extensive Wisconsin media coverage of the Center's 25th anniversary. Center researchers and staff regularly gave interviews to media, including: National Public Radio, Successful Farming Radio Network and the national "This Week in Agribusiness" television program. The NFMC also enhanced its national media profile by regularly disseminating press releases and sending a representative to the annual National Association of Farm Broadcasters meeting and to the Agricultural Media Summit.
- Published two newsletter titles: *Nurture*, published three times per year, disseminates children's rural health and safety information to professionals in the fields of health and safety, agri-business, policy-making and the media; *Cultivate*, published twice a year, keeps readers informed of all aspects of National Farm Medicine Center activities.
- Updated Web capabilities to better provided NFMC resources and news to visitors. Additions included a Web site dedicated to the Childhood Agricultural Safety Network initiative to keep children younger than 12 away from tractors ([www.childsafety.org](http://www.childsafety.org)).
- NFMC researchers and staff published nearly 30 peer-reviewed articles, book chapters and official reports; and gave two dozen presentations to conferences, workshops and community groups.
- Conducted the third annual Journalists Workshop, which focuses on the role of media in the coverage of childhood agricultural safety and health. The NIOSH-funded workshop, held in Wenatchee, Washington, gave 10 Pacific Northwest journalists the opportunity to experience first-hand the complex issues that families face as they attempt to run their farm businesses safely and profitably. Previous workshops had been held in Marshfield, Wisconsin, and Cooperstown, New York.
- As a community service project, NFMC staff and family members volunteered for the Rotary Winter Wonderland project, collecting food items and money to stock Marshfield's various food pantries.







## CHILDHOOD AGRICULTURAL SAFETY PUBLIC AWARENESS CAMPAIGN

*'It's easier to bury a tradition than a child'*  
Coalition urges: 'Keep Kids Away from Tractors'

A coalition coordinated by Barbara Lee, Ph.D., and Regina Fisher launched a national campaign with a simple message: "Keep Kids Away from Tractors."

On average, a child dies on a farm once every 3.5 days. The biggest single cause of those deaths is something that's on practically every farm: a tractor. That's why the coalition, the Childhood Agricultural Safety Network (CASN), says children younger than 12 years old should not be on or near tractors. In many rural areas, having children ride on the tractor with parents or grandparents is considered part of the farming tradition. But the coalition asserts a tough love message: "It's easier to bury a tradition than a child."

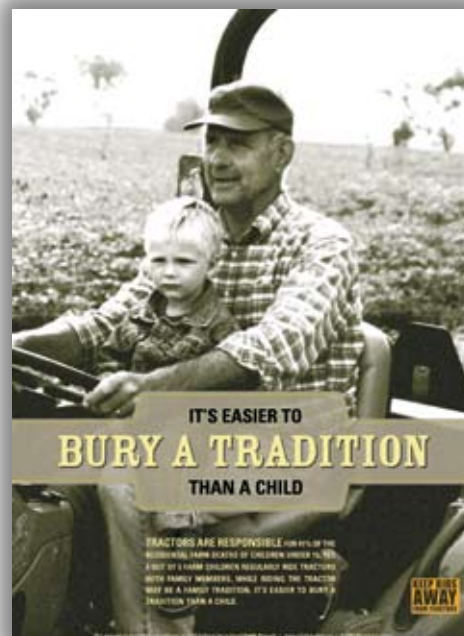


The initiative is funded by the National Institute for Occupational Safety and Health through the National Children's Center. CASN includes representatives of Farm Safety 4 Just Kids, Migrant Clinicians Network, National Education Center for Agricultural Safety, Progressive Agricultural Foundation, National Center for Farmworker Health, Safe Kids Worldwide, Safe Kids Canada, Association of Farmworker Opportunity Programs, Washington Department of Labor and Industries and National Council of Agricultural Employers.

Posters in English, Spanish and French, along with other promotional materials and audio public service announcements, are available at the Web site, [www.childagsafety.org](http://www.childagsafety.org).



By year's end, country singer Michael Peterson joined the campaign and recorded 30- and 60-second radio public service announcements, and work had begun on developing a television public service announcement. The campaign story was picked up by agricultural media outlets across the U.S., including a televised interview by Orion Samuelson, host of RFD-TV's "This Week in Agribusiness."





## PUBLICATIONS

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**Borchardt MA.** Biologically active contaminants in aquitards. In: Contaminant transport through aquitards: a state-of-the-science review. Cherry JA, Parker BL, Bradbury KR, Eaton TT, Gotkowitz MG, Hart DJ, Borchardt MA, editors. Denver (CO): American Water Works Association Research Foundation; 2006. p. 126.

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**Fisher RM, Lee BC.** Interactive Demonstrations of Safe Play Areas. Marshfield (WI): Marshfield Clinic; 2006.

Singh A, Goering RV, Simjee S, **Foley SL**, Zervos MJ. Application of molecular techniques to the study of hospital infection. *Clin Microbiol Rev.* 2006 Jul;19(3):512-30.

**Foley SL**, White DG, McDermott PF, Walker RD, Rhodes B, Fedorka-Cray PJ, Simjee S, Zhao S. Comparison of subtyping methods for differentiating *Salmonella enterica* serovar Typhimurium isolates obtained from food animal sources. *J Clin Microbiol.* 2006 Oct;44(10):3569-77.

**Hanna CL**, Taylor DM, Sheppard MA, Laflamme L. Young Unlicensed Drivers Involved in Fatal Crashes in the U.S. *J Safety Res.* 2006;(37)4:385-93.



*The Agritourism Advisory Board met in March in Minneapolis. Bottom (from left): Barbara Lee, Carol Lehtola, Kent Gustafson, Regina Fisher. Back (from left): Bernard Geschke, Jim Donahue, Mike Humann, Harry Nienaber, Steve Foley, A.J. Ferguson.*

**Humann MJ, Lee BC.** Agritourism Health and Safety Guidelines for Children. Marshfield (WI): Marshfield Clinic; 2006.

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**Lynne AM, Foley SL**, Nolan LK. Immune response to recombinant *Escherichia coli* Iss protein in Poultry. *Avian Dis.* 2006 Jun;50(2):273-6.

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Brison RJ, Pickett W, Berg RL, Linneman J, Zentner J, **Marlenga B.** Fatal agricultural injuries in preschool children: Risks, injury patterns, and strategies for prevention. *CMAJ.* 2006 Jun 6;174(12):1723-6.

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## PUBLISHED ABSTRACTS WITH ORAL PRESENTATIONS OR POSTER SESSIONS

Jokela W, Simpson C, **Borchardt MA,** Owens D. Field-scale measurement of nutrients and pathogens in surface runoff: Methodology and preliminary results. *American Society of Agronomy/Soil Science Society of America,* Indianapolis, IN, November 12-16.

**Decker L,** Hanna CL. All-Terrain Vehicles, Youth, and Roadways: A Gripping Story, 2006 Lifesavers: National Conference on Highway Safety Priorities, Austin, TX, April 9-11, 2006, abstract book pg. 44.

**Fisher RM,** Geschke G, Burgus S, **Lee BC.** Best practices: promoting Safe Play Areas on Farms through interactive demonstrations. Summer Conference of the National Institute for Farm Safety, Inc., Blue Harbor Resort, Sheboygan, WI, June 26.

**Foley S,** Call V, **Kaldhone P,** Tyler C, Potter L, Anderson G, Phillips S, Kerdahi K, Nayak R. Comparison of antimicrobial susceptibility testing methods for salmonella enterica serotype Heidelberg isolates. *FDA Science Forum,* Washington, DC, April. (Poster).

Job E, Wagley G, Al-Khaldi SF, **Foley S,** Farmer D, Walderhaug M, Kerdahi K, Cerniglia CE, Nayak R. Threat assessment of potentially emerging salmonella serovars associated with roma tomato outbreak and egg houses in the United States. *Proceedings of the 2006 FDA Science Forum,* Washington, DC, April. (Poster).

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**Humann M,** Lehtola C, **Lee BC.** National Agricultural Safety Database Child Safety Section Review and Update. Summer Conference of the National Institute for Farm Safety, Inc., Blue Harbor Resort, Sheboygan, WI, June 26.

**Humann M,** **Lee BC.** Children's health & safety guidelines for agritourism operations. Summer Conference of the National Institute for Farm Safety, Inc., Blue Harbor Resort, Sheboygan, WI, June 26.

**Kirkhorn SR.** Early life farm exposure effects upon the development of childhood asthma and atopy. *Sixteenth International Congress of Agricultural Medicine and Rural Health.* Lodi, Italy, June 19.

**Kaldhone PR,** Nayak R, White DG, Logue CM, **Foley SL.** Characterization of antimicrobial resistance in salmonella Heidelberg from pre-harvest and post-harvest turkey sources. *American Society for Microbiology General Meeting,* Orlando, FL, May (Poster).



*Chris Hanna presented at the annual Lifesavers conference in Austin, Texas, in April. Hanna is now working at the Michigan Public Health Institute.*

## INVITED PRESENTATIONS

### Minnesota Farm Bureau Federation

February 4, St. Cloud, MN

"Children on the Farm: How can we keep them safe," Regina Fisher

### Wisconsin Water Association Groundwater Seminar

February 16, Wisconsin Dells, WI

"How Safe is our Groundwater: Determining Groundwater Disease Transmission Risk," Mark Borchardt

### Village of Prairie du Sac

March 21, Prairie du Sac, WI

"Wisconsin WAHTER Study," Mark Borchardt

### **U.S. EPA Workshop**

April 4, Cincinnati, OH

"Concentration of Enteroviruses, Adenoviruses and Noroviruses from Drinking Water with Glass Wool Filters," Mark Borchardt

### **Wisconsin Farm Bureau Federation**

April 5, Marshfield, WI

"Childhood Agricultural and Rural Injury Prevention," Regina Fisher and Mike Humann

### **NFMC 25th Anniversary**

April 27, Marshfield, WI

"A Brief History of the National Farm Medicine Center," Barbara Lee

### **Marshfield Clinic Science on Sunday**

April 30, Marshfield, WI

"Through the Water Glass: Looking at our Nation's Drinking Water," Mark Borchardt

### **National Rural Health Association, 1st annual Clinicians Conference**

July 28, Denver, CO

"Occupational Health Issues in Agriculture," Steve Kirkhorn

### **St. Joseph's Hospital 11th annual Spirit Trauma Conference**

August 12, Marshfield, WI

"Agricultural Respiratory Hazards: Recognition, assessment, and emergency responder protection," Steve Kirkhorn

### **Wisconsin Academy of Sciences Forum: Future of Farming and Rural Life in Wisconsin**

August 25, Menasha WI

Steve Kirkhorn

### **Agrisafe Network Training**

September, IA

"NAGCAT for Health Professionals," Regina Fisher (Internet Conference)

### **Wisconsin Water Association Annual Meeting**

September 21, Wisconsin Dells, WI

"How Safe is our Groundwater: Determining Groundwater Disease Transmission Risk," Mark Borchardt



*The National Farm Medicine Center received "The President's Award" from Dee Jepsen, president of the National Institute for Farm Safety (NIFS), for its work in hosting the 2006 NIFS meeting in Sheboygan, Wisconsin.*

### **Forum, First Presbyterian Church**

October 15, Marshfield, WI

"Through the Water Glass: Looking at our Nation's Drinking Water," Mark Borchardt

### **Safe Kids Worldwide Conference**

October 19, Washington, DC

"Connecting with Rural Communities," Regina Fisher

### **Wisconsin Department of Natural Resources, Bureau of Groundwater and Drinking Water**

October 24, Wisconsin Dells, WI

"Viruses in Madison's wells: Breach of an aquitard into a confined aquifer," Mark Borchardt

### **State of the Lakes Ecosystem Conference, Urban Groundwater Workshop**

November 3, Milwaukee, WI

"Viruses in groundwater and the public health implications," Mark Borchardt

### **Ontario Ministry of Agriculture Outlook Conference: Innovations in Agriculture**

November 8, Toronto, Ontario

"Human Capital in Agriculture: The forgotten component," Steve Kirkhorn

### **Scientific Seminar, Marshfield Clinic Research Foundation**

November, Marshfield, WI

"Regulations: Will they work to prevent pediatric farm injuries?" Barbara Marlenga

### **Marshfield Clinic Research Foundation Science Chat Series**

November 27, Marshfield, WI

"The Wisconsin WAHTER Study," Mark Borchardt

### **Consensus Conference on Injury and Death in Agriculture**

December, Saskatoon, Saskatchewan

"Childhood farm injury prevention strategies in the United States," Barbara Marlenga



## EXHIBITS AND CONFERENCES ATTENDED

### Food and Drug Administration Science Forum

April, Washington, DC

### American Society for Microbiology General Meeting

May, Orlando, FL

### National Institute for Farm Safety

June 25-30, Sheboygan, WI

### American Society of Agricultural and Biological Engineers Annual International Meeting

July 9-12, Portland, OR

### Agricultural Media Summit

July 23-26, Portland, OR

### Interscience Conference on Antimicrobial Agents and Chemotherapy

September, San Francisco, CA

### National Association of Farm Broadcasters

November 16-17, Kansas City, MO

## FEDERAL AGENCY REPRESENTATIVES

David Hard, Ph.D.  
National Institute for Occupational Safety  
and Health

Art Kerschner, Jr.  
U. S. Department of Labor

Brad Rein, P.E.  
U.S. Department of Agriculture/  
Cooperative State Research, Education,  
and Extension Service



*Pravin Kaldhane and Steve Foley at the American Society for Microbiology General Meeting in Orlando, Florida.*

## CHILDHOOD AGRICULTURAL SAFETY NETWORK

AgriSafe Network  
Keedysville, MD  
Contact: Natalie Roy, M.P.H.

American Farm Bureau Federation  
Washington, DC  
Contact: Marsha Purcell, CAE

Canadian Agricultural Safety Association  
Glen Blahey, CRSP

Farm Safety 4 Just Kids  
Earlham, IA  
Contact: Shari Burgus, M.Ed.

Migrant Clinicians Network, Inc.  
Austin, Texas  
Contact: Amy Liebman, M.P.A.

National Center for Farmworker Health  
Buda, Texas  
Contact: Sylvia Partida

National Education Center for  
Agricultural Safety  
Peosta, IA  
Contact: Dan Neenan

National Safety Council  
Itasca, IL  
Contact: TBA

Progressive Agriculture Foundation  
Birmingham, AL  
Contact: Susan Reynolds, M.S.

Safe Kids Canada  
Toronto, ON  
Contact: Pam Fuselli



Childhood Agricultural Safety Network

## MAKING A GIFT

The National Farm Medicine Center (NFMC) expresses its thanks to all individuals and businesses that support the center's work.

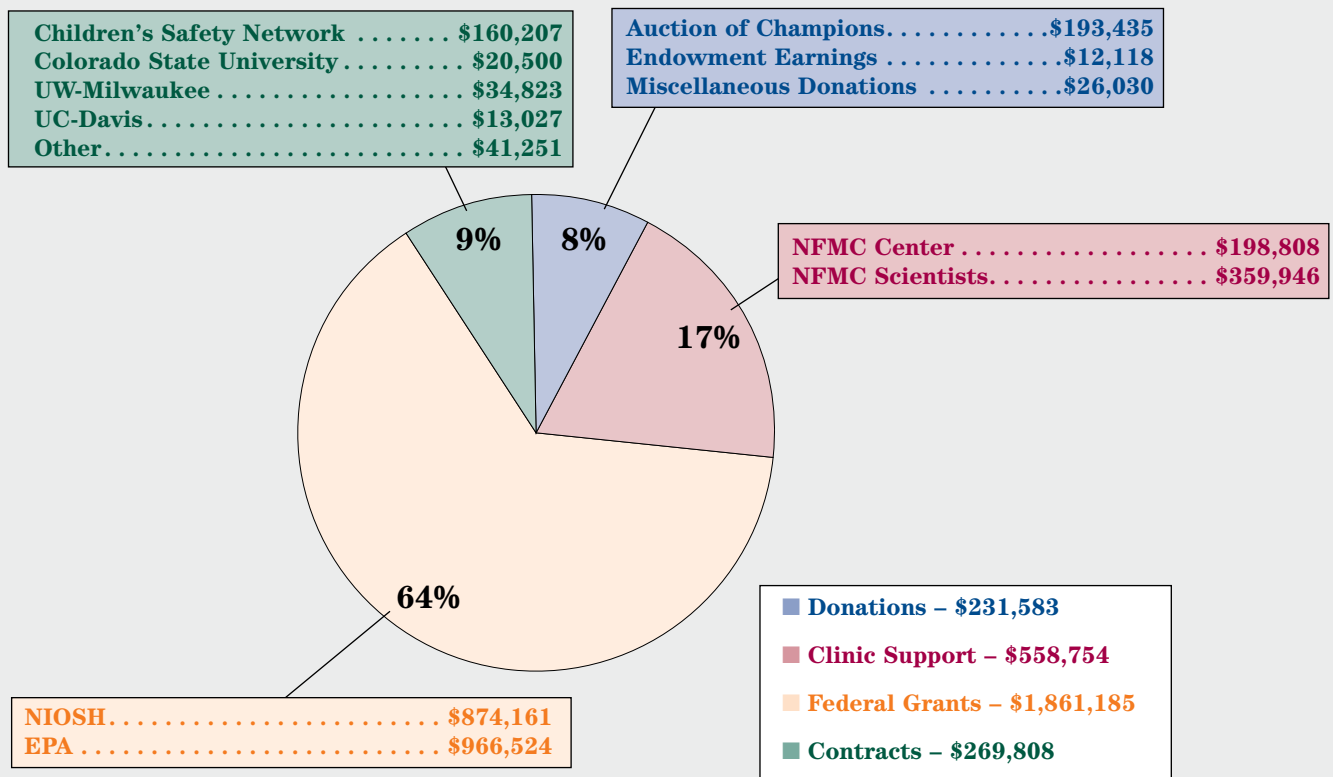
Private donations provide a significant source of support. Eight percent of its fiscal 2006 budget came from private sources, and of that, half was generated by a single event: the annual Auction of Champions.

The NFMC agenda has evolved to keep pace with health and safety concerns in modern agriculture, and the donations support research and outreach on issues that affect agricultural producers, farm workers and rural residents.

For information on making a gift to the National Farm Medicine Center, or to the Dr. Dean Emanuel Endowment, please visit the Marshfield Clinic Development Department Web site, <http://www.marshfieldclinic.org/contributors/pages/>, or call 1-800-858-5220.



## NFMC REVENUE FISCAL YEAR 2006





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