



National
FarmMedicine
Center®



2007 Year in Review



From the Director

What a whirlwind 2007 was – with several major initiatives underway, new collaborative relationships formed, and the opportunity to host several national and regional meetings here in Marshfield. Scientists and staff of the National Farm Medicine Center and the National Children's Center for Rural and Agricultural Health and Safety continued to conduct cutting-edge research and to shape national policy in rural and agricultural health and safety.

We hosted the National Institute for Occupational Safety and Health (NIOSH) - National Occupational Research Agenda (NORA) Sector Council on Agriculture, Forestry and Fishing for a two-day strategic planning session. Council members representing agribusiness, producers, migrant workers, safety professionals, and scientists drafted goals and action plans that will guide national priorities and public/private funding.

With funding from the Farm Foundation, we led an initiative leading to the establishment of the Agricultural Safety and Health Council of America. This council, the first of its kind in the U.S., will have leaders of agricultural producer organizations and agribusinesses actively influencing national programs to improve safety conditions for agricultural workers.

We are entering our fourth year of editing the nationally-indexed Journal of Agromedicine: Practice, Policy and Research. With the journal ownership transferred to a new publisher, there are strong indications its readership and impact will continue to grow.

Tractor safety was another important topic in 2007. Staff hosted a summer meeting of the NIOSH - National Agricultural Tractor Safety 25-member team that synthesized research results and drafted next steps for the national plan to reduce tractor-related deaths. Staff published findings of a study regarding youth operating tractors on public roads. Results showed no reduction in tractor crashes after a law was passed requiring youth tractor safety certification; thus, staff recommended more effective methods and policies to minimize risks for youth driving tractors.

Barbara Lee, Ph.D.

To influence public perceptions associated with children (12 years and younger), our staff and their colleagues within the Childhood Agricultural Safety Network expanded the “Keep Kids Away from Tractors” campaign to involve radio and television messages in addition to its print coverage in more than 150 media outlets; and the National Safety Council featured the campaign in its 64th annual National Farm Safety and Health Week.

Our laboratory-based scientists studied environmental health topics important to rural America. They moved into the home stretch of the multi-year Wisconsin Water and Health Trial for Enteric Risks (WAHTER) Study, funded by the Environmental Protection Agency. Findings will help guide EPA policy on protecting our nation’s groundwater resources and public health. In related research, published scientific results created a paradigm shift in knowledge regarding groundwater contamination; and lay press coverage led to changes in public health policy associated with municipal well water management.

We capped off the year with the privilege of presenting the sixth Dean Stueland Scholar Award to our first international recipient - Dr. James Dosman of the Canadian Centre for Health and Safety in Agriculture at the University of Saskatchewan. What a pleasure it was to have Dr. Dosman, the “Father of Canadian Agromedicine,” here to share research and historical perspectives with Dr. Dean Emanuel, our NFMCC Director Emeritus, who has often been referred to as the “Father of Agromedicine” for the U.S.

I extend thanks to our many colleagues and collaborators and wish you all the best for 2008!



Barbara Lee, Ph.D.

Table of Contents

National Leadership	1
Agricultural Engineering & Policy	3
Agromedicine	4
Public Health Microbiology	5
Childhood Agricultural Health & Safety	10
Outreach/Administration	11
Marshfield: Crossroads for agricultural safety and health	13
Publications, Presentations, Conferences	15
Stueland Scholar	19
Making a Gift	20

National Leadership

The National Farm Medicine Center pushed ahead on several initiatives in 2007 that are having an impact on national agricultural safety and health strategies. In addition, NFMC scientists and staff served on advisory boards and committees of numerous organizations, both government and private. The Center facilitated discussion on timely issues and stakeholder concerns by hosting visiting scholars, and it encouraged interdisciplinary collaboration on a national level.

- Barbara Lee, Ph.D., guided the process that led to establishment of the Agricultural Safety & Health Council of America (ASHCA). Immediate strategic goals for the 501(c)(3) organization include: assisting farmers and ranchers in implementing practical solutions for injury prevention; improving communications and collaborations among producers, industry, safety associations, Cooperative Extension specialists, and professional safety and health organizations; and ensuring sufficient, timely, reliable, ongoing data to guide agricultural safety programs and allocation of federal funds.
- The National Agricultural Tractor Safety Initiative met in Marshfield July 30-31 to discuss key findings and next steps in its campaign to reduce tractor-related deaths and injuries, most of which are attributable to overturns. NFMC Research Engineer Mark Purschwitz, Ph.D., coordinated the meeting.
- Dr. Lee was appointed co-chair of the National Institute for Occupational Safety and Health (NIOSH)-National Occupational Research Agenda (NORA) Sector Council on Agriculture, Forestry and Fishing. Council members met Aug. 1-2 in Marshfield to draft strategic national goals and action plans for systematic reduction of disease and injury among workers in agriculture.
- The NFMC completed its third year of producing the Journal of Agromedicine: Practice, Policy & Research. The peer-reviewed journal examines human health issues relative to agriculture and is indexed by the National Library of Medicine.
- Steve Kirkhorn, M.D., M.P.H., continued as one of just two physician members of the U.S. Department of Agriculture Air Quality Task Force, serving on the Particulate Matter and Animal Feeding Operation sub-committee. In addition, he is on the AgriSafe Network board of directors and the National Pork Board's Public Health and Worker Safety Technical Advisory Panel
- Mark Borchardt, Ph.D., continued his term on the Environmental Protection Agency Science Advisory Board's Drinking Water Committee, and advises on technical issues underlying EPA policies and decision-making. He was also asked to serve on an EPA review panel to help develop the third Contaminant Candidate List to identify unregulated contaminants that may require national drinking water regulations in the future.
- Steve Foley, Ph.D., continued as Science Advisor for the U.S. Food and Drug Administration's Office of Regulatory Affairs, and is vice-president of the North Central Branch of the American Society for Microbiology (ASM).
- The NFMC continued to serve as home of the National Children's Center for Rural and Agricultural Health and Safety. Marshfield was federally designated in 1996 to coordinate childhood agricultural injury prevention efforts.
- Barbara Marlenga, Ph.D., published research indicating that the number of children killed while working on their family farm could be reduced by 60 percent if current child labor laws were uniformly applied and enforced across the agriculture sector.
- 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.

- The NFMC continued to facilitate the Childhood Agricultural Safety Network (CASN), a collaborative effort with other national youth-serving organizations to explore methods to reduce childhood agricultural injuries.

- Drs. Lee and Kirkhorn, at the invitation of State Rep. Amy Sue Vruwink, addressed the Assembly Agriculture Committee in November regarding farm safety in Wisconsin and the Farm Center's areas of expertise that could be brought to bear on some of the problems.



Barbara Marlenga, Ph.D.



Mark Purschwitz, Ph.D.

Agricultural Engineering and Policy

Mark Purschwitz, Ph.D., agricultural engineer, received funding to conduct focus groups with farmers in Merrill, Edgar, and Waumandee, Wisconsin, to learn what it would take to convince them to retrofit old tractors with live-saving rollover protective structures (ROPS). The focus groups were part of the National Agricultural Tractor Safety Initiative funded by the National Institute for Occupational Safety and Health (NIOSH).

Dr. Purschwitz completed a statewide survey titled "Personal Circumstances, Concerns, and Needs of Women on Wisconsin Dairy Farms." More than 640 women returned completed questionnaires, sharing concerns on such issues as time pressures, health insurance, off-farm employment, childcare, children's work, finances, networking and marital communication.

He also compiled a report of 10 annual farm-related fatality summaries from the University of Wisconsin Center for Agricultural Safety and Health, with funding through the Great Plains Center for Agricultural Health and NIOSH. The report included 308 fatalities related to farm work or work site hazards that occurred in Wisconsin during the 10-year period of 1996-2005, for an annual average of approximately 31 fatalities.

In other ROPS news, Dr. Purschwitz worked with the New York Center for Agricultural Medicine and Health on the New York Rollover Protective Structure Retrofit Rebate Program for farmers, a program that reimburses farmers for the costs of installing roll bars on their old tractors. He continued to answer technical inquiries from farmers and equipment dealers around the nation regarding availability of retrofit ROPS for older farm tractors.

Agromedicine

Steve Kirkhorn, M.D., M.P.H., is medical director of both the NFMC and the Occupational Health Department of Marshfield Clinic. In addition to seeing patients, Dr. Kirkhorn is a researcher, educator and editor.

He finished an assessment of the prevalence of musculoskeletal disorders in central Wisconsin dairy farmers and dairy technicians.

As an educator, Dr. Kirkhorn is adjunct professor in the University of Minnesota Medical School's Department of Family Practice and Community Health, where he focuses on agricultural, environmental, and occupational health. He also serves as a clinical faculty member at the University of Wisconsin School of Medicine and Public Health's Office of Rural Health. Dr. Kirkhorn hosted a University of Minnesota family practice resident on a week-long community medicine rotation in May.

Dr. Kirkhorn is entering his fourth year of editing the Journal of Agromedicine, a nationally-indexed journal published by Haworth Press that was acquired late in 2007 by Taylor & Francis Group, a leading international academic publisher.

Dr. Kirkhorn presented at the Central States Occupational Medicine (CSOM) Conference, giving an update on Evolving Occupational Health Issues in Agriculture. CSOM is the component of the American College of Occupational and Environmental Medicine that represents Wisconsin, Minnesota, Illinois, Indiana, Iowa and Missouri. Additionally, he presented a talk titled "Clinician's Guide to Agricultural Infectious Disease" at the National Rural Health Association's Clinician's Conference in Kansas City.



Steve Kirkhorn, M.D., M.P.H.



Barbara Lee, Ph.D. and Mark Borchardt, Ph.D.

Public Health Microbiology

Mark Borchardt, Ph.D., completed the data collection phase of the Wisconsin Water and Health Trial for Enteric Risks Study, involving samples from 14 community water systems, 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 Environmental Protection Agency, is the first of its kind. Findings will help guide future EPA policy on protecting our nation's groundwater resources and public health.

In a news story that received statewide coverage, Dr. Borchardt and his staff used specialized equipment to identify the G1 strain of norovirus that sickened 241 people during a five-day period at a restaurant in Door County, Wisconsin, enabling public health officials to hunt for the source of contamination.

In another prominent media story, Dr. Borchardt continued his research into Madison city wells. He found low levels of human gastrointestinal viruses, likely coming from broken sewer mains, in six of 11 Madison Water Utility drinking

water wells tested in September. The work was funded by the Wisconsin Department of Natural Resources, and has helped guide the Madison Water Utility in adjusting its chlorination levels. A key finding in his Madison research is that deep confined aquifers can be more vulnerable to contamination by human viruses than commonly believed.

Dr. Borchardt continued to collaborate with scientists at the U.S. Department of Agriculture laboratory in Marshfield on manure management practices for controlling pathogens. The lab is part of the Institute for Environmentally Integrated Dairy Management.

Steve Foley, Ph.D., an infectious disease scientist, continues to conduct research exploring the genetics of antimicrobial resistance and disease-causing mechanisms utilized by pathogens that arise through the food chain. 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. The results of this project appear promising

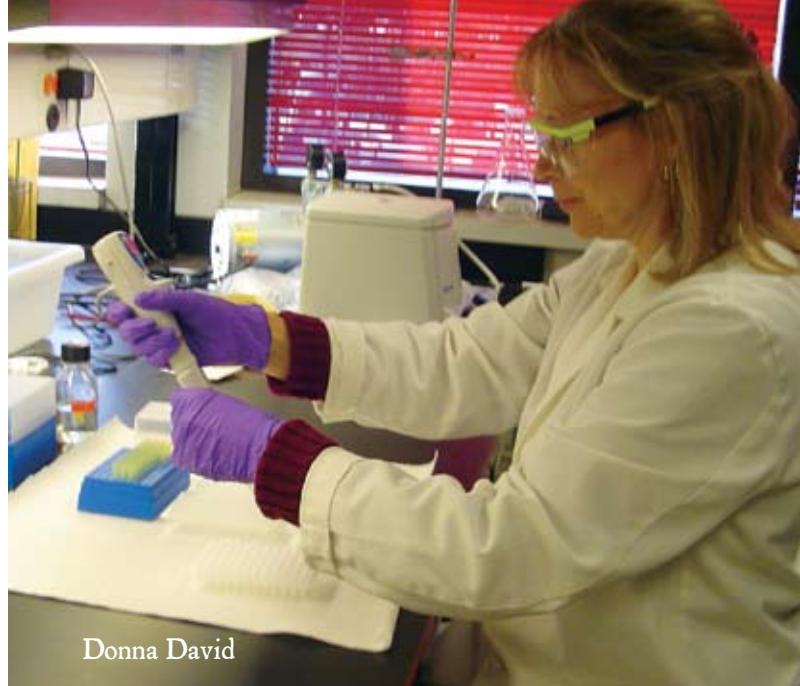
for the ability to differentiate *Escherichia coli* from different animal sources. Additionally Dr. Foley, along with postdoctoral research fellow Aaron Lynne, research associates Donna David and Pravin Kaldhone, and summer intern Lindsay Dorsey, continued to study factors that lead to the development and persistence of antimicrobial resistance in pathogens that are important to animal and human health, and are working to develop strategies to limit the development of resistance. Results of this research have helped broaden understanding of antimicrobial resistance in *Salmonella* and identified potential vaccine targets for the disease, avian colibacillosis.

Dr. Foley is vice-president of the North Central Branch of the American Society for Microbiology (ASM), and he and his staff helped organize the 67th annual meeting of the North Central Branch in October. More than 100 microbiologists attended. Dr. Foley presented a talk titled, "Avian Colibacillosis: Importance and the Development of Control Measures," which focused on work being carried out in his laboratory related to development of non-antimicrobial means to control pathogens. Also presenting posters were Dorsey, David and Kaldhone.

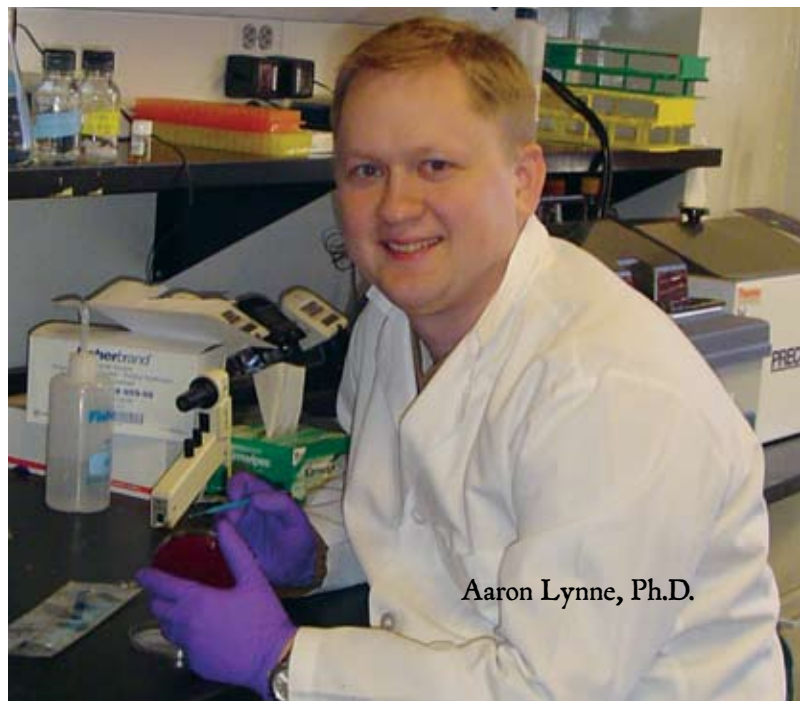
Phil Bertz, research associate, traveled to 14 Wisconsin communities under the EPA WAHTER study to collect water samples and maintain UV reactors, driving nearly 20,000 miles. He was involved with the processing and culturing for enteric viruses from those samples as well.

Donna David, research associate, is developing methodology to track pathogenic *E. coli* in the environment and optimizing *E. coli* protein expression protocols in order to proceed with the identification of likely vaccine targets. She also presented a poster titled "Evaluation of a virulence factor-based PCR method for microbial source tracking of *Escherichia coli*" at the North Central Branch of the American Society of Microbiology Annual Meeting.

Aaron Lynne, Ph.D., post-doctoral research fellow, 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*.



Donna David



Aaron Lynne, Ph.D.



Roberto Marrero-Ortiz, Ph.D.

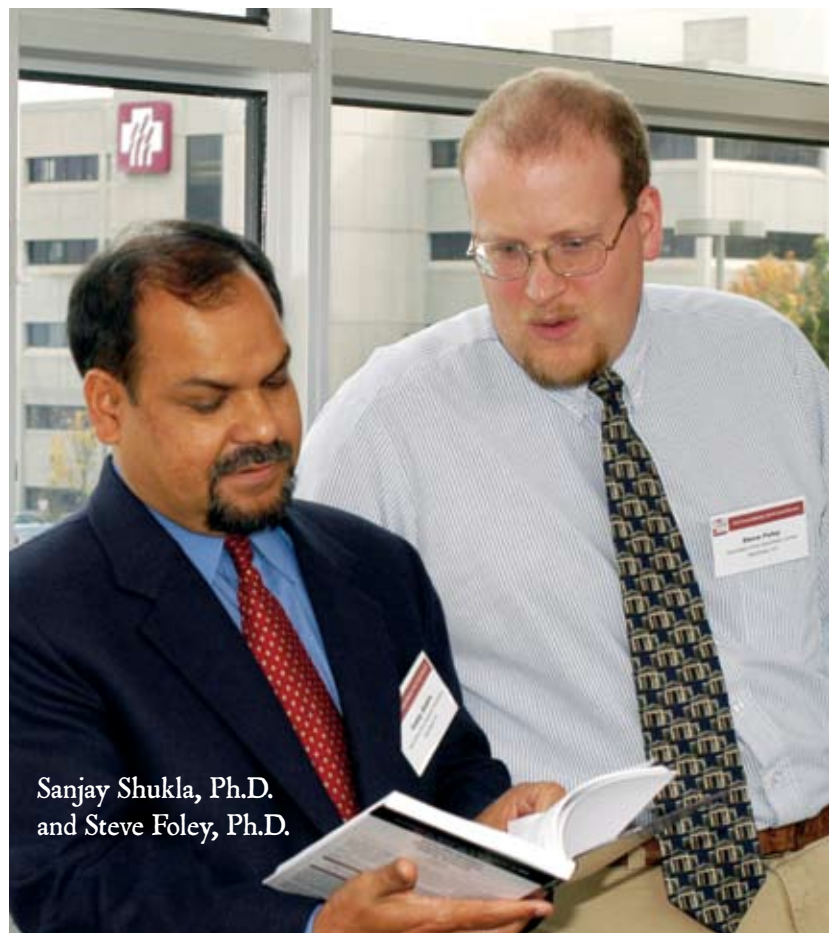


Sue Spencer
and Phil Bertz

Roberto Marrero-Ortiz, Ph.D., postdoctoral research fellow, joined Dr. Borchardt's laboratory in October. Dr. Marrero-Ortiz was formerly a science teacher in Puerto Rico. Recently, he completed his Ph.D. at the University of Arizona, where he evaluated the chemical, physical and microbial water quality of homeowner wells and public drinking groundwater systems in the state of Arizona. Dr. Marrero is working on the survival, transport and die-off of pathogenic viruses, bacteria and protozoa in agricultural settings. This project is a partnership between Marshfield Clinic Research Foundation and the USDA Agricultural Research Service.

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, has worked primarily on the WAHTER Study, splitting his time between collecting water samples in participant communities, testing the samples for enteric viruses, and maintaining the UV reactors.



Sanjay Shukla, Ph.D.
and Steve Foley, Ph.D.

Childhood Agricultural Health & Safety

Barbara Lee, Ph.D., directed the National Children's Center for Rural and Agricultural Health and Safety for the 10th consecutive year, in addition to her overall directorship of the NFMHC. Dr. Lee facilitates implementation of the NFMHC strategic plan, including administrative management, resource development and communications. The National Children's Center completed Year Four of its second five-year National Institute for Occupational Safety and Health (NIOSH) grant. As Center Director, Dr. Lee participates in bi-annual in-person meetings and quarterly teleconferences with directors of all 10 NIOSH-funded agricultural research centers to facilitate new initiatives and coordination across regions. The National Children's Center includes eight unique projects, four external mini-grants, external advisors and a comprehensive evaluation process.

The National Children's Center neared completion of a project to modify current North American Guidelines for Children's Agricultural Tasks posters to be applicable for hired adolescent farm workers. The ultimate goal of this project, called "Safety Guidelines for Hired Adolescent Farm Workers (SaGHAF)," is to reduce the incidence of workplace injury and fatality to hired teen workers. Beginning in spring 2008, the SaGHAF guidelines will be distributed to agricultural employers. Although there are safety standards in place for youth employed in many occupations, there are currently few guidelines for youth hired to work on farms and ranches.

The Center conducted its fourth annual Journalists Workshop on childhood agricultural health and safety in the hill country of central Kentucky. The workshop focused on safety issues involving tractors and large animals. Forty journalists from across North America have participated in these workshops.

Barbara Marlenga, Ph.D., published research indicating that the number of children killed while working on their family farm could be reduced by 60 percent if current child labor laws were uniformly applied and enforced across the agriculture sector. Federal labor laws are intended to protect young workers from the most dangerous jobs. But parents who have their children working on family farms are exempt from applying these laws to their children. Dr.

Marlenga said many of the most serious agricultural injuries – those requiring hospitalization as well as those resulting in death – could be prevented by raising the age restriction for performing hazardous agricultural work to 18 years to be consistent with other industries.

Dr. Marlenga continued collaboration with Canadian colleagues on several other projects, including a new look at pediatric fall injuries in agricultural settings, in which their case series described a number of conventional types of falls that resulted in serious consequences. The fall itself is not the full problem; it is the hazardous environment that children are permitted to occupy whether they are at work or at play that compounds the traumatic injury. Overall, results of the study present a compelling case that falls are a common and traumatic injury control problem for children on farms.

Taking a fresh approach to understanding pediatric farm injuries, Dr. Marlenga and colleagues focused on questions of how risk factors interact, and what the implications of these interactions are for injury control. Findings confirm that children at all ages are at increased risk for injury on farms when the level of environmental risk is high (e.g., near equipment, animals, working or playing at heights). However, results also indicate that interactions among risk factors help to explain how this occurs, and the process varies depending on the developmental level – the unpredictable behavior of children younger than age 6 increases their interactions with hazards, whereas injury risk for children 6-and-older arises more from the nature of the task.

In addition, Dr. Marlenga is working on the Saskatchewan Farm Injury Cohort Study, looking at contextual factors (physical, economic, cultural) that impact the risk for farm injury.

Regina Fisher, agricultural youth safety specialist, is the National Children's Center primary coordinator for outreach activities and intervention projects. This past year she led the development of the Safety Guidelines for Hired Adolescent Farm Workers. In collaboration with representatives from the National Council of Agricultural Employers and Washington Department of Labor, seven guidelines were created for agricultural employers and supervisors of



Scott Heiberger and
Regina Fisher

adolescent workers. Guidelines addressed work conditions, teen assessment, and labor regulations for adolescents. Fisher coordinated development of resources for each guideline, consisting of a series of posters with more than 50 illustrations developed specifically for the project by an independent illustrator. Each guideline, and subsequent resources and illustrations, were evaluated by safety professionals for content accuracy and usability. Fisher continued to coordinate the Childhood Agricultural Safety Network's Childhood Agricultural Safety Public Awareness Campaign. She served as technical advisor for the "It's Easier to Bury a Tradition than a Child" television ad featuring country singer Michael Peterson. Tracking of campaign coverage in 2007 revealed more than 150 appearances across an array of media outlets. Fisher served as the liaison for the NIOSH Agricultural Center Evaluation, and coordinated efforts for the Center's year-end report. She assisted in the facilitation of the Agricultural Safety and Health Council of America.

Marcy Fitz Randolph, D.O., M.P.H., joined the NFMC staff as an injury prevention research specialist in April. She is completing her Ph.D. in Occupational Injury Epidemiology from the University of Iowa, with additional training informatics. Her background experiences in clinical medicine, ergonomics, safety, injury epidemiology, and information science allow her to communicate easily with colleagues from the many disciplines which interact in agricultural health and safety. She also works to promote cross-disciplinary research and interventions through improved communication of research findings, especially using Internet resources.

Amy Liebman, M.P.A., is the NFMC's formal consultant through the Migrant Clinicians Network. Liebman works as a "virtual" staff member from her home base in Salisbury, Maryland. 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. Liebman also brings unique perspective to the Childhood Agricultural Safety Network as the Migrant Clinicians Network representative.

General Staff

Tammy Ellis, research program associate, worked on the statewide “Personal Circumstances, Concerns and Needs of Women on Wisconsin Dairy Farms” project. Ellis assisted with the Agricultural Tractor Safety Initiative focus groups, and the Wisconsin Farm-Related Fatality Report. She also worked on the Journalists Workshop, Safe Play project, and promotion and dissemination of Agritourism Health and Safety Guidelines for Children. Ellis managed the technical assistance database for the Center and coordinated the new “Recommended Resources” component of the National Children’s Center Web site.

Jenni Heeg, administrative secretary, joined the NFMC in 2007. She worked extensively with the Public Health Microbiology Lab and the Infectious Disease Lab, and provided support services for all NFMC staff.

Scott Heiberger, communications specialist, handles editing, writing, media relations and marketing duties. He edits two newsletters, *Nurture* (National Children’s Center) and *Cultivate* (National Farm Medicine Center), and guided *Nurture* to its first electronic edition. Heiberger is managing

editor of the nationally-indexed Journal of Agromedicine. He directs the annual Journalists Workshop on childhood agricultural safety and health, and authored a resource titled “Agricultural Safety and Health Workshops for Journalists: Strategies that Work.” He also assisted on the Childhood Agricultural Safety Network’s public awareness campaign, “It’s Easier to Bury a Tradition than a Child.”

Ruth Mueller, administrative secretary, worked on all aspects of the NFMC’s host role in the National Institute for Occupational Safety and Health (NIOSH)-National Occupational Research Agenda (NORA) Sector Council on Agriculture, Forestry and Fishing meeting in August, as well as in publishing the peer-reviewed Journal of Agromedicine, coordinating correspondence amongst authors, reviewers and NFMC editors.

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 fiscal management, procedures and project implementation.



Matt Volenec, Jenni Heeg and Ruth Mueller

Outreach/Administration

The National Farm Medicine Center communicates results of its research to farm families and safety and health professionals. The NFMC translates research into practice via two newsletters, an annual report, Web site, media relations, formal presentations, articles in peer-reviewed 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.

Highlights in 2007:

- The NFMC engaged media with press releases, personal contact and an annual workshop for journalists. The center also had booths and conducted interviews at the National Association of Farm Broadcasters meeting and at the Agricultural Media Summit.
- The campaign to keep children younger than 12 years off tractors -- "It's Easier to Bury a Tradition than a Child" -- was the official theme of National Farm Safety and Health Week, Sept. 16-22, and generated dozens of stories in newspapers, newsletters and Web sites across North America.



Tammy Ellis

- Media highlights included a cover story about the Farm Center in the January 2008 issue of Corporate Report Wisconsin, and an October front page story in the Wisconsin State Journal featuring Dr. Borchardt's work with the Madison Water Utility in identifying human viruses in city wells.
- 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.
- Launched an electronically-delivered version of the Nurture newsletter to expand readership.
- Updated Web capabilities to better disseminate NFMC resources and news. Additions included a Web page

addressing "Keys to Creating a Safe Play Area," which can be viewed at http://marshfieldclinic.org/nfmc/pages/default.aspx?page=nccrahs_safeplay_keys).

- NFMC researchers and staff published nearly 20 peer-reviewed articles, book chapters and official reports; and gave more than 40 presentations to conferences, workshops and community groups.
- Conducted the fourth 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 Harrodsburg, Kentucky, gave 10 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; Cooperstown, New York; and Wenatchee, Washington.

'It's easier to bury a tradition than a child'

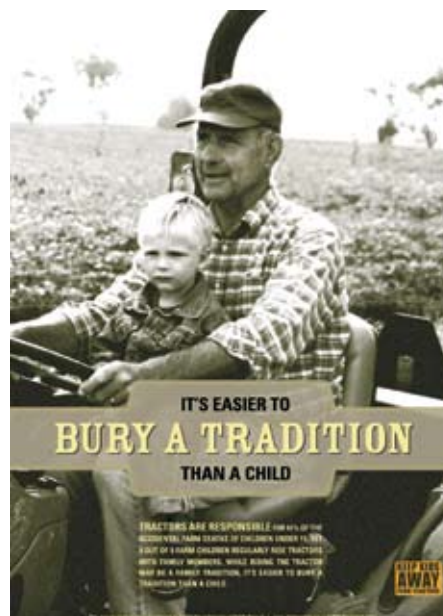
Agricultural safety public awareness campaign sweeps nation

The National Children's Center-led campaign to "Bury a Tradition" by keeping children younger than 12 off tractors reached new heights in September when the initiative was featured as the official theme of the National Safety Council's 64th annual National Farm Safety and Health Week.

Earlier in the year the campaign was featured on the syndicated AgDay television news program and on RFD-TV. In all, more than 150 appearances of the campaign were recorded across various media. The campaign's celebrity spokesperson, country singer Michael Peterson, continued to promote the campaign's message at his performances and through recorded public service announcements. The campaign's success garnered two regional awards from the National Agri-Marketing Association.

The campaign is coordinated by Barbara Lee, Ph.D., and Regina Fisher, and is a collaborative effort of national-level organizations that comprise the Childhood Agricultural Safety Network. It is funded by the National Institute

for Occupational Safety and Health through the National Children's Center. Campaign information and downloadable resources can be found at www.childagsafety.org.



Marshfield: Crossroads for agricultural safety and health

The National Farm Medicine Center played host to national meetings and to invited scholars from across the world of agricultural safety and health. These face-to-face meetings continued the Farm Center tradition of helping to facilitate relationships aimed at reducing injuries and fatalities. “We’re always looking for opportunities to enhance professional development of our staff while leveraging the expertise of the Farm Center-Marshfield Clinic Research Foundation,” said Barbara Lee, Ph.D., center director.

Chip Petrea, Ph.D., Assistant Director for Agricultural Continuing Education, University of Illinois.



Susan Gallagher, M.P.H., Director of the Master of Science Program in Health Communication, Tufts Medical School.



George Conway, M.D., M.P.H., Director of the NIOSH Agriculture, Forestry and Fishing program.

Members of the National Institute for Occupational Safety and Health (NIOSH)-National Occupational Research Agenda (NORA) Sector Council on Agriculture, Forestry and Fishing.





Edgardo Patricio Ortiz Munoz, M.Sc., (left), Professor of Veterinary Medicine, University of Guadalajara, Mexico.



Presentation of the 2007 Stueland Scholar award (from left): Marlene Stueland, Michael Stueland, Nancy Stueland-Adamski, James Dosman, M.D., and Sue Dosman.



James Westaby, Ph.D., Associate Professor of Psychology and Education, Columbia University.



John Shutske, Ph.D., Professor in the Department of Bioproducts and Biosystems Engineering, University of Minnesota.



Barbara Mulhern (left) freelance editor; Mary E. Miller, M.N., R.N., Child Labor Specialist, Washington Department of Labor and Industries.

Publications

Erova TE, Sha J, Horneman AJ, **Borchardt MA**, Khajanchi BK, Fadl AA, Chopra AK. Identification of a new hemolysin from diarrheal isolate SSU of *Aeromonas Hydrophila*. *FEMS Microbiol Lett.* 2007;275:301-311.

Borchardt MA, Bradbury KR, Gotkowitz MB, Cherry JA, Parker BL. Human enteric viruses in groundwater from a confined bedrock aquifer. *Environ Sci Technol.* 2007;41:6606-6612.

Hoffman RM, Wolk DM, **Spencer SK**, **Borchardt MA**. Development of a method for the detection of waterborne microsporidia. *J Microbiol Methods.* 2007;70:312-318.

Ellis TM, and **Purschwitz MA**. Wisconsin Farm-Related Fatalities 1996-2005. Marshfield (WI): Marshfield Clinic; 2007.

Foley SL, Grant K. Molecular techniques of detection and discrimination of foodborne pathogens and their toxins. In: Simjee S, editor. *Foodborne Diseases*. Totowa (NJ): Humana Press, 2007. p. 485-510.

Foley SL, Zhao S, Walker RD. Comparison of molecular typing methods for the differentiation of salmonella foodborne pathogens. *Foodborne Pathog Dis.* 2007;4:253-276.

Nayak R, Call V, Kaldhane PR, Tyler C, Anderson G, Phillips S, Kerdahi K, **Foley SL**. Comparison of *Salmonella enterica* serovar Heidelberg susceptibility testing results. *Clin Med Res.* 2007;5:98-105.

Kirkhorn SR. Preface: pesticide-related illnesses. *J Agromedicine.* 2007;12(1):xxi.

Kirkhorn SR. Occupational health takes center stage (editorial). *J Agromedicine.* 2007;12(2):1-2.

Heederik D, Sigsgaard T, Thorne PS, Kline JN, Avery R, Bønløkke JH, Chrischilles EA, Dosman JA, Duchaine C, **Kirkhorn SR**, Kulhankova K, Merchant JA. Health effects of airborne exposures from concentrated animal feeding operations. *Environ Health Perspect.* 2007 Feb;115(2):298-302.

Lynne AM, Skyberg JA, Logue CM, Doetkott C, **Foley SL**, Nolan LK. Characterization of a series of transconjugant mutants of an avian pathogenic *Escherichia coli* isolate for resistance to serum complement. *Avian Dis.* 2007;51:771-776.

Humann, MJ and **Lee, BC** (2007). *Agritourism Health and Safety Guidelines for Children*. Marshfield (WI): Marshfield Clinic.

Lee B, Westaby JD, Chyou P, **Purschwitz MA**. Agricultural employers' hiring and safety practices for adolescent workers. *J Agric Saf Health.* 2007;13:25-32.

Morrongiello BA, **Marlenga BL**, Berg RL, Linneman JG, Pickett W. A new approach to understanding pediatric farm injuries. *Soc Sci Med.* 2007;65:1364-1371.

Pickett W, Dostaler S, Berg RL, Linneman JG, Brison RJ, **Marlenga BL**. Pediatric fall injuries in agricultural settings: A new look at a common injury control problem. *J Occup Environ Med.* 2007;49:461-468.

Marlenga BL, Berg RL, Linneman JG, Brison RJ, Pickett W. Changing the child labor laws for agriculture: impact on injury. *Am J Public Health.* 2007;97:276-282.



Invited Presentations

Wisconsin Fresh Fruit and Vegetable Conference,
Wisconsin Agricultural Tourism Meeting
January 9, Oconomowoc, WI
“Safe Play Area Considerations,” Tammy Ellis

Children’s Hospital of Wisconsin Seminar Series
January 12, Milwaukee, WI
“How Safe is Our Groundwater? Determining
Groundwater Disease Transmission Risk,”
Mark Borchardt

National Academy of Sciences Committee to Review
NIOSH Agriculture, Forestry and Fishing Sector.
January 19, Washington, DC
“Relevance and Impact of Childhood Agricultural Injury
Prevention Interventions,” Barbara Lee

Embry-Riddle University Distinguished Lecture Series
February 7, Daytona Beach, FL
“Through the Water Glass: Looking at Our Nation’s
Drinking Water,” Mark Borchardt

Government Affairs Seminar Keynote Address
March 1, Wisconsin Dells, WI
“Through the Water Glass: Looking at Our Nation’s
Emerging Water Issues” Mark Borchardt

Marshfield Clinic Research Foundation Science Chat Series
March 5, Marshfield, WI
“Ag, AIDS, Orphans & Tsunami Recovery in
Thailand,” Barbara Lee and Tow Berg

Wisconsin Department of Health and Family Services
Seminar Series
March 7, Madison, WI
“How Safe is Our Groundwater? Determining
Groundwater Disease Transmission Risk,”
Mark Borchardt

U.S. Food and Drug Administration Division of Field
Sciences Office of Regulatory Affairs
March 22, Oral Webcast
“Antimicrobial Resistance in Salmonella: Importance and
Methods for Determination,” Steve Foley

U.S. Environmental Protection Agency, Region 5 State
Drinking Water Program Directors Meeting
April 25, Chicago, IL
“Viruses in Groundwater and the Public Health
Implications,” Mark Borchardt

Michigan Section, American Water Works Association
May 1, Marinette, WI
“Wisconsin WAHTER Study: Determining
Groundwater Disease Transmission Risk,”
Mark Borchardt

Midwest Geosciences Group Course Instructor Northern
Illinois University Extension
May 8-10, Naperville, IL
Assessing Groundwater Movement and Contaminant
Migration through Aquitards: Hydrogeological
Characterization and Investigative Techniques,”
Mark Borchardt

Future of Farm and Rural Life
May 14-15, Madison, WI
“Future of Farming/Rural Life Recommendations,”
Steve Kirkhorn

University of Arkansas and U.S. Food and
Drug Administration
May 24, Fayetteville, AR
“Research Advances in the Detection of Microbial Food
Threats, Food Defense,” Steve Foley

Health of Agricultural Population Graduate Course
Spring, Teleconference for the University of Kentucky,
School of Public Health
“Key Projects of the National Children’s Center
for Rural and Agricultural Safety and Health,”
Barbara Marlenga

AgriSafe Network
June 13, University of Iowa
“Evaluation and Treatment of Pesticide Exposures,”
Steve Kirkhorn

Cooperative Safety Conference

June 19, Myrtle Beach, SC

"Feasibility of Developing a U.S. Coalition for Agricultural Safety," Barbara Lee

National Institute for Farm Safety Conference

June 25, Penticton, British Columbia, Canada

"Current Status of a Childhood Agricultural Safety Public Awareness Campaign," Regina Fisher

"Children and Agriculture: Telling the Story (A Workshop for Journalists)," Scott Heiberger

"Feasibility of Developing a U.S. Coalition for Agricultural Safety," Barbara Lee

"Factors Influencing Creation of Safe Play Areas on Farms," Barbara Lee

"Changing the child labor laws for agriculture: Impact on injury" Barbara Marlenga

"Adult supervision and pediatric injuries in the agricultural worksite," Barbara Marlenga

American Society for Animal Science/American Dairy Science Association Annual Meeting

July 9, San Antonio, TX

"Current and future Salmonella challenges: Background, serotypes, pathogenicity, and drug resistance," Steve Foley

"Current and future Salmonella challenges: Prevalence in swine and poultry and potential pathogenicity of their isolates," Steve Foley

American Veterinary Medical Association General Meeting

July 17, Washington, DC

"Evaluation of Differentially Expressed Proteins following Complement Exposure in Avian Pathogenic Escherichia coli," Steve Foley

"Plasmid Mediated Antibiotic Resistance in Salmonella enterica serovar Heidelberg from Turkeys," Aaron Lynne

National Rural Health Association Clinical Conference

July 27, Kansas City, MO

"Update in Agricultural Infectious Disease," Steve Kirkhorn

Scientific Seminar, Marshfield Clinic, Research Foundation

August 9, Marshfield WI

"Antimicrobial Resistance Associated with Host-adapted Salmonella enterica," Steve Foley

Marshfield Clinic Grand Rounds

August 17, Marshfield WI

"Update in Agricultural Respiratory Disease," Steve Kirkhorn

Wisconsin Department of Natural Resources, Bureau of Groundwater and Drinking Water, In-Service Training

October 17, Stevens Point, WI

"Wisconsin WAHTER Study: An Update," Mark Borchardt

Current Topics and Issues Graduate Course

Fall, Elluminate University of Iowa, School of Public Health

"Research Update and Relationship to National Priority Documents," Barbara Marlenga

Scientific Seminar, Marshfield Clinic, Research Foundation

September 4, Marshfield, WI

"Assessment of the Microbial and Chemical Water Quality of Individual and Small Groundwater Supplies in Arizona," Roberto Marrero-Ortiz

Central States Occupational Medicine Fall Seminar

September 15, Milwaukee, WI

"Evolving Occupational Health Issues in Agriculture," Steve Kirkhorn

National Environmental Health Association Region 4 Conference

September 25-27, La Crosse, WI

"How Safe is Our Groundwater? Determining Groundwater Disease Transmission Risk," Mark Borchardt

"Confronting Hazards on Dairy Farm Visits ... Tactfully," Scott Heiberger

67th North Central Branch Meeting of American Society of Microbiology
October 6, Marshfield, WI
“Avian Colibacillosis: Importance and the Development of Control Measures” Steve Foley

North Dakota State University, Department of Veterinary and Microbiological Sciences
October 26, Fargo, ND
“Salmonella and the Birds: Antimicrobial Resistance Trends and Potential Control Mechanisms” Steve Foley

Wisconsin State Assembly Agricultural Committee Meeting
November 29, Madison, WI
“National Farm Medicine Center Overview and Implications for Wisconsin,” Barbara Lee

Federal Agency Representatives

George Conway, M.D., M.P.H., and 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



Childhood Agricultural Safety Network members meeting in El Paso included (from left): Marilyn Adams, Farm Safety 4 Just Kids; Amy Liebman, Migrant Clinicians Network; Alma Galvan, tour leader; Barbara Lee, National Children's Center; the tour driver; David Hard, NIOSH; and Mary Miller, Washington Department of Labor and Industries.

Childhood Agricultural Safety Network

AgriSafe Network
Spencer, IA • Contact: Natalie Roy

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

Association of Farmworker Opportunity Programs
Washington, DC • Contact: Heather Anderson

Canadian Agricultural Safety Association
Winnipeg, Manitoba, Canada • Contact: Glen Blahey

Farm Safety 4 Just Kids
Urbandale, IA • Contact: Marilyn Adams

Farm Safety Association
Guelph, Ontario, Canada • Contact: Dean Anderson

Migrant Clinicians Network, Inc.
Austin, TX • Contact: Amy Liebman

National Center for Farmworker Health
Buda, TX • Contact: Sylvia Partida

National Council of Agricultural Employers
Washington, DC • Contact: Sharon Hughes

National Education Center for Agricultural Safety/
National Safety Council
Peosta, IA • Dan Neenan

Progressive Agriculture Foundation
Birmingham, AL • Contact: Susan Reynolds

Safe Kids Canada
Toronto, Ontario, Canada • Contact: Pam Fuselli

SAFE KIDS Worldwide
Washington, DC • Contact: Alan Korn

Washington Department of Labor and Industries
Olympia, WA • Contact: Mary E. Miller

Canadian physician named 2007 Stueland Scholar

James Dosman, M.D., a Canadian physician, teacher and researcher known as an international leader in agricultural medicine, was been named the 2007 Stueland Scholar. The presentation took place on Oct. 31 at the Froehlke Conference Center, Marshfield Clinic Research Foundation.

The Stueland Scholar award was established in 2001 to honor the late Dean Stueland, M.D., M.P.H. The award goes to an individual who has made significant contributions in the areas of emergency, agricultural and/or alcohol and drug abuse medicine, all special interests of Dr. Stueland.

Dr. Dosman was a research collaborator with Dr. Stueland on farm injury surveillance methodology.

Dr. Dosman and his team at the University of Saskatchewan have hosted five international symposiums on agricultural health and safety since the mid-1980s, drawing participants from dozens of nations. They will host their sixth symposium, Oct. 19-23, 2008, on the subject of public health and the agricultural rural ecosystem.

Known as the "Father of Agricultural Medicine" in Canada, Dr. Dosman has published seven edited books and more than 160 peer-reviewed scientific articles and played a key role in creating the Canadian Centre for Health and Safety in Agriculture, a cross-Canada network of research scientists addressing agricultural and environmental health issues.

Previous Recipients:

2001 - Lynn Goldman, M.D., M.P.H.,
Johns Hopkins University

2002 - John May, M.D., New York
Center for Agricultural
Medicine and Health

2003 - Steve Kirkhorn, M.D., M.P.H.,
National Farm Medicine Center

2004 - John Wheat, M.D., M.P.H.,
University of Alabama School
of Medicine

2005 - No award

2006 - Paul Gunderson, Ph.D., Dakota Center for
Technology Optimized Agriculture,
Lake Region State College



James Dosman, M.D.

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 pillar of support. Nine percent of the NFMC Fiscal 2007 budget came from private sources, and of that, most was generated by a single event: the annual Auction of Champions.

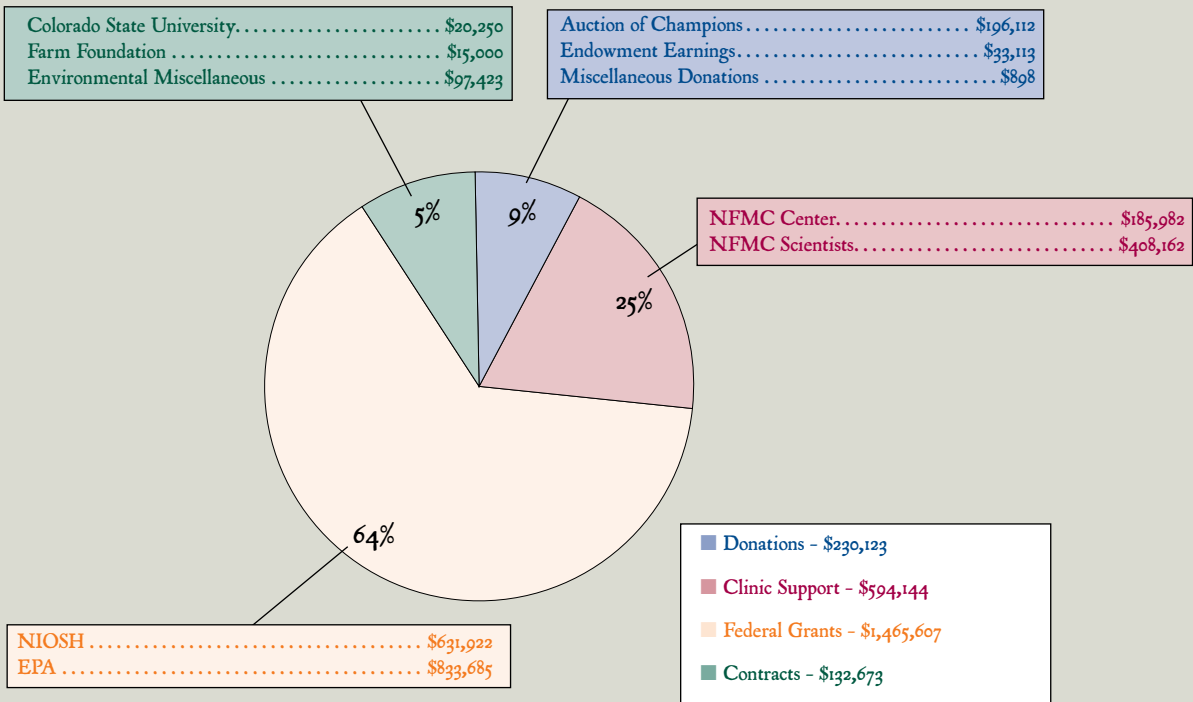
The NFMC agenda has evolved to keep pace with health and safety concerns in modern agriculture, and the donations support research and outreach on issues that affect farmers and rural residents, including food safety, child safety and water quality.

Donations also are being accepted for the Dr. Dean Emanuel Endowment, established in recognition of Dr. Emanuel’s contributions to research and the establishment of the National Farm Medicine Center. Revenue from this endowment will support the Emanuel Research Chair position and research program.

To make a gift, please visit the Marshfield Clinic Development Department Web site, www.marshfieldclinic.org/contributors/pages/, or call 1-800-858-5220.



NFMC Revenue Fiscal Year 2007



NFMC Mission

To conduct high quality research addressing human health and safety associated with rural and agricultural work, life and environments.



MARSHFIELD CLINIC®



National Children's Center
for Rural and Agricultural Health and Safety

The National Farm Medicine Center wishes to acknowledge its major funding sources:

- The National Children's Center for Agricultural Health and Safety, National Institute for Occupational Safety and Health (NIOSH) award no. U50/OH008107-04
- NIOSH award no. 5 ROI OH008046-04
- Environmental Protection Agency STAR Grant no.: R831630

Phone: 1-800-662-6900

Fax: 715-389-4996

E-mail: nccrahs@mcrf.mfldclin.edu

Web sites: www.marshfieldclinic.org/nfmc/ and
www.nagcat.org

99-0429 (01/08) © 2008 Marshfield Clinic

MARSHFIELD CLINIC RESEARCH FOUNDATION
NATIONAL FARM MEDICINE CENTER
1000 N OAK AVE
MARSHFIELD WI 54449-5777

NONPROFIT
ORGANIZATION
U.S. POSTAGE
PAID
MARSHFIELD, WI
PERMIT NO. 417