



YEAR IN REVIEW 2012

NATIONAL FARM MEDICINE CENTER



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From the Director

High-quality research has been at the heart of the National Farm Medicine Center's mission for many years. While research into what is dangerous in agriculture continues, it is becoming less about discovering what is dangerous and more an effort in getting people to modify their safety behavior in a very hazardous industry.

We have broadened our mission statement to reflect this need to translate knowledge into behavioral change, always a challenging task, and more so in an industry where tradition sometimes retards the adoption of safer methods.

Our new mission statement, with new areas in **bold**:

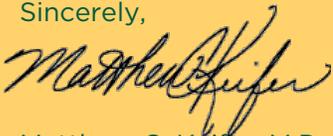
*"The National Farm Medicine Center will **be a national resource**, conducting high quality research, **developing and delivering health and safety information, exploring innovative service models** and effecting broad change to improve human health and safety associated with rural and agricultural work, life and environments."*

There are different reasons why people change their behavior. For larger operations those reasons could be regulatory or financial in nature, where a safety violation could bring penalties from the Occupational Safety and Health Administration (OSHA), or an increase in workers' compensation insurance premiums. By contrast, OSHA enforcement is unlikely on smaller farms, and workers' compensation insurance is not required. Part of our revised mission is to find what will motivate all farmers to make safer decisions. One tangible example of that type of research is our Rollover Protective Structure (ROPS) Rebate Program, launched at the beginning of 2013 and directed by Dr. Barbara Marlena. It is a practical solution to the serious and preventable problem of death from tractor rollovers.

We continue to build on the success of our long-time programs, such as the National Children's Center for Rural and Agricultural Health and Safety, and to offer new solutions, including Agricultural Safety Consulting services.

I invite you to look inside this publication for highlights of the past year, and for a preview of where we are headed as we work with this vital and evolving industry.

Sincerely,



Matthew C. Keifer, M.D., M.P.H.



Agricultural Safety & Health

Agricultural Safety Consulting

Although the agriculture industry is cutting edge in many aspects, it lags in safety.

“Workplace safety is a relatively new concept to people who work in agriculture,” said **Dennis Ray**, with the Farm Center’s Agricultural Safety Consulting (ASC) service. “Whereas the majority of industries got on board with safety in a systematic way decades ago, this has only started to become important in the last 10 to 15 years for agriculture.”

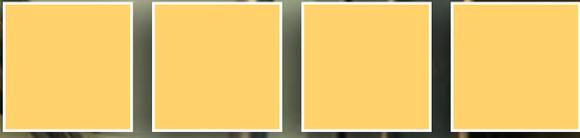
The National Farm Medicine Center is trying to change the culture of safety. After conferring with Professional Dairy Producers of Wisconsin, the Farm Center established ASC, which specializes in safety program development, implementation and management. In an effort to demonstrate its capabilities and to outline the scope of the safety problems, ASC conducted free safety walkthroughs on nine large farms in Wisconsin. Data were collected in 31 OSHA-defined hazard categories. Major findings included an average of 19.3 hazard findings per farm. Most common deficiencies: safety training on equipment, fall exposure, machine guarding, electrical hazards, hazard communication, confined spaces, injury record keeping, and livestock handling.

“The consistency with which unmitigated safety hazards were identified on the farms suggests that this level of uncontrolled hazards is widespread, and this is consistent with the high risk of worker injury suggested by workplace fatality statistics in Wisconsin,” said **Matthew Keifer, M.D., M.P.H.**, director of the National Farm Medicine Center.

Dr. Keifer said that safety consulting for agricultural operations is in its infancy in the United States, and that few Wisconsin farms have safety expertise. “Our program will train its own needed professionals and continue to offer service to the Wisconsin agricultural community,” Dr. Keifer said.

To keep up with demand, the Farm Center hired new staff members to work on programs related to ASC and the Upper Midwest Agricultural Safety and Health (UMASH) Center.

Dennis Ray, occupational safety specialist/business development manager. His work focuses on ASC and the Upper Midwest Agricultural Safety and Health Center. Ray has 12 years’ experience as a safety professional, most recently at Church Mutual Insurance Company. He inspected churches and church-related facilities for safety hazards and made recommendations for improvement. He created an online workplace safety program and a return-to-work program for policyholders to implement in their facilities. He worked as an industrial hygienist performing comprehensive chemical assessments, noise monitoring, and sampling hydrogen sulfide levels in



confined spaces. Previous to that, he worked for 16 years at Dunlop Tire and Rubber as a union safety representative.

Iris Reyes, M.P.H., research specialist. She coordinates several of Dr. Keifer's research projects at the Farm Center. Reyes has degrees in biology and toxicology and more than 10 years' research experience, most recently at the Medical College of Wisconsin. She previously worked for the United Nations in Uganda and a California-based non-profit in Tanzania to assess and improve the water quality of remote populations. Reyes applied to the Farm Center because she

wanted to continue working with rural populations.

Francisco Guerrero Silva, community outreach specialist.

He brings an essential cultural and linguistic skill set to the Farm Center and will help NFMC keep apace of the changing demographics of the agricultural workforce. Guerrero was trained as an agricultural engineer in his native Chile and worked in that country's wine industry for six years.

David Parfitt, M.P.H., research epidemiologist, divides his time between the National Farm Medicine Center and the Marshfield Clinic Research Foundation. Through the NFMC

he is involved in projects related to injury and illness among the agricultural workforce, specifically dairy farming, as well as establishing a population-based cohort of farmers in the Marshfield Epidemiologic Study Area. Parfitt came to the Farm Center from the University of Florida's Department of Neurology in Gainesville where he worked four years in the area of clinical trial research.

Upper Midwest Agricultural Safety and Health Center

Dr. Matthew Keifer is co-investigator of the NIOSH-funded Upper Midwest Agricultural





Safety and Health (UMASH) Center, www.umash.umn.edu/, one of nine Centers of Excellence in Agricultural Disease and Injury Research, Education, and Prevention funded by the National Institute for Occupational Safety and Health (NIOSH). The center is a collaboration of the Farm Center, the University of Minnesota School of Public Health and College of Veterinary Medicine, and the Minnesota Department of Health. Also working on UMASH projects is **Amy K. Liebman, M.P.A., M.A.**, of Migrant Clinicians Network.

A central UMASH theme is the interrelationship between the production practices, which are primarily driven by social, economic and animal health considerations, and the health and safety conditions in the workplace.

The Farm Center's three UMASH projects:

Seguridad en las Lecherías: Immigrant Dairy Worker Health and Safety. Investigators seek to bridge the gap in worker health and safety training in dairy production by testing a culturally appropriate, occupational safety and health intervention to reduce worksite hazards and improve knowledge and practices among immigrant dairy workers in Wisconsin. The project piloted a bilingual safety curriculum for Hispanic workers, and in 2013 will begin utilizing Promotores de Salud, or lay health workers, to employ a 'train-the-trainer' approach to educate workers. The study is recruiting 45 farms to test the promotora model and another 45 farms that will train employees using traditional safety and health education methods.

The project team developed and tested six core modules to train immigrant dairy workers. Topics included Introduction to Health and Safety in Dairy, Animal Safety, Machinery Safety, Worker Rights and Responsibilities, Chemical Safety, and Confined Spaces. Each module is written with a step-by-step facilitator's guide and is designed to engage participants. Project staff worked to ensure effective content delivery in Spanish and content appropriate for workers with low levels of literacy.

Surveillance of Disease and Injury in Wisconsin Dairy Farmers and Workers. Currently, no practical surveillance mechanism exists that collects information on injuries and illnesses associated with agricultural activities for most farms in the U.S. The

main objective of this study is to establish and maintain a working surveillance system for dairy farms in Wisconsin in order to identify disease and injuries among farmers and farmworkers particularly as the industry modernizes technology, changes workforce makeup and adjusts to market demands. As a component of this system, distributable self-reporting surveys are now being designed by research staff and the use of text analysis is being utilized in medical record charts to help capture and define our population of interest. In addition, the revitalization of the Farm Cohort, a special registry of farm residents within the Marshfield Epidemiologic Study Area (MESA) is now underway. This project has brought together the U.S. Department of Agriculture National Agricultural Statistics Service (Wisconsin Field Office), the Marshfield Epidemiology Research Center (MERC), Marshfield Clinic Electronic Medical Records (MCEMR) and the Biomedical Informatics Research Center (BIRC).

Facilitating Return to Work for Injured and Ill Animal Agriculture Workers. Primary care clinicians are often poorly equipped to manage and treat occupational injuries and illness and have few resources to facilitate workers' return to work. This project creates a mechanism to bring the realities of work on the farm to the clinic in a way that the clinician can review, understand and develop a transitional plan that will safely and promptly return the worker to the workplace. Functional job analysis is being conducted on dairy and

pork operations and a database will be developed consisting of information on hazards, loads, exposure risks, photographs and descriptions of tasks, and necessary training or skills. This content will be incorporated into an interactive software application to assist clinicians in identifying safe return to work task profiles for the injured worker. This will facilitate clear and effective communication between clinician, worker, employer and return to work specialist.

Other NFMC Projects

Tractor overturns remain the leading cause of deaths on farms. In an effort to make Wisconsin farmers safer, Marshfield Clinic's 26th Auction of Champions raised more than \$43,000 for the **National Farm Medicine Center's Rollover Protective Structure (ROPS) Rebate Program**. The goal of the program is to encourage farmers to have ROPS installed on their tractors by offering a rebate of 70 percent (up to \$865) on the total cost. A ROPS refers to operator compartment structures – usually cabs or roll bars – designed to protect farmers from injury or death in the event of a tractor rollover. ROPS are the most effective known safety intervention, and are 99 percent effective when used with a seatbelt. **Barbara Marlena, Ph.D.**, and **Tammy Ellis** have been meeting with local implement dealers to get their input on the program, conducting focus groups with farmers to select promotional ads, and preparing for the 2013 launch of the program at the Marshfield Farm Show.

Farm Mapping to Assist, Protect and Prepare Emergency Responders (Farm MAPPER) is a feasibility project that explores using Quick Response tags (QR codes) to provide emergency responders onsite information about hazards and physical layouts of agricultural operations. The project, coordinated by **Iris Reyes, M.P.H.**, will develop model systems for farmers to input data such as locations of chemicals, solvents, fuels and other hazards, where power and gas cut-off valves and water sources are and where farming operations occur. These data will be linked to QR tags attached to easily accessible sites, where emergency responders may read them. The Marshfield Biomedical Informatics Research Center (BIRC) is developing a secure online system for farm data storage and the QR linking method. The Farm Center is working with the Pittsville (Wis.) Fire Company to test the usability of this system. To view how Farm MAPPER works, see www.marshfieldclinic.org/farmmapper.

Pesticide Health Effects Medical Education Database (PHEMED) was developed to provide educators of health professionals with materials that aid in incorporating pesticide-related issues into their curriculums (www.pesticidemededucation.com/). The database and Web site were built by the National Farm Medicine Center and the University of Washington, with support from the U.S. Environmental Protection Agency (EPA). "This database focuses on the most common pesticide groups found in the U.S., and those that cause the most human health problems," said Dr. Keifer.

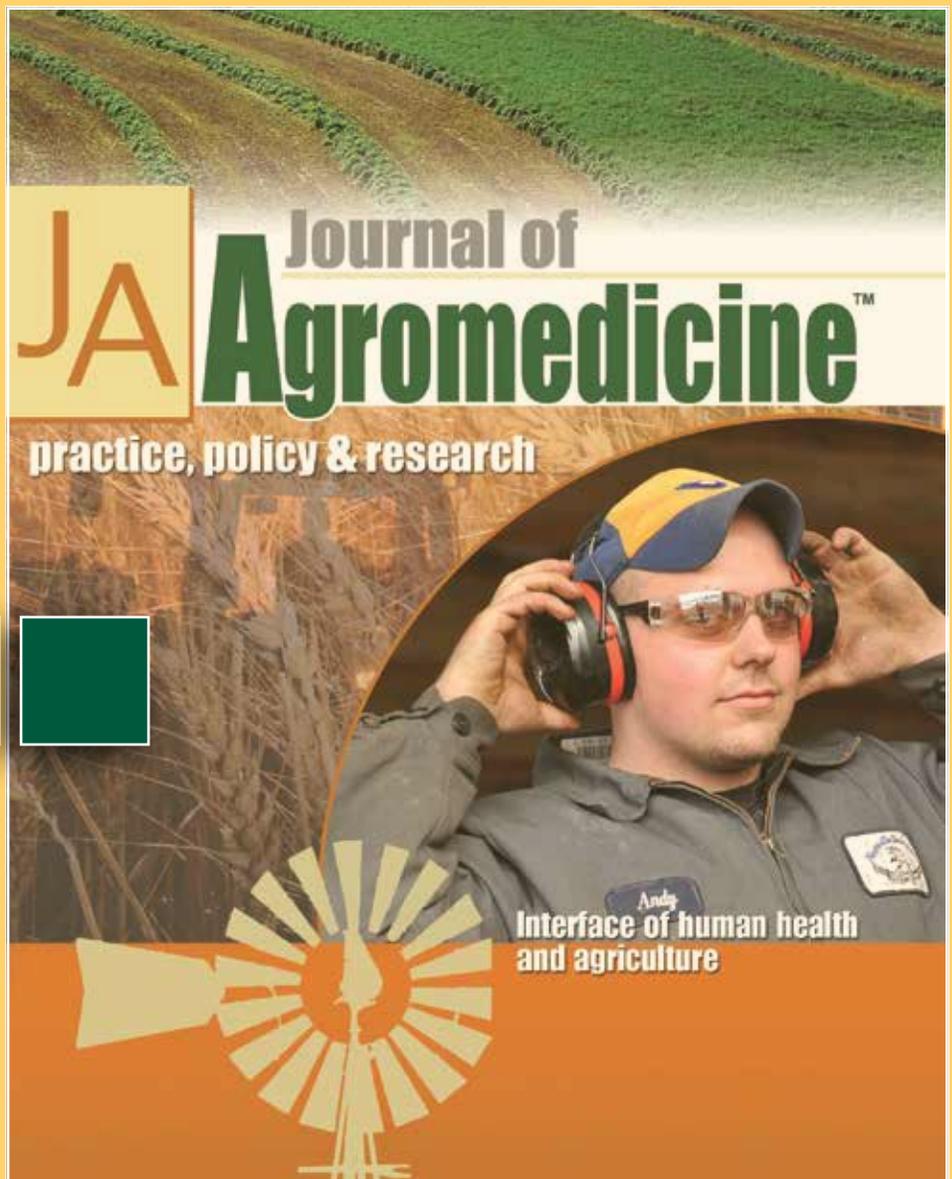


Agromedicine Training & Clinics

Journal of Agromedicine

The NFMC potentially impacts millions of people associated with agriculture worldwide through its editing of the peer-reviewed Journal of Agromedicine. The original research and other scholarly papers published in the Journal are disseminated to researchers, clinical practitioners and health and safety professionals via the multiple platforms of publisher Taylor and Francis Group.

The Journal has now been accepted into Thomson Reuters' Science Citation Index, which produces the Journal Citation Reports each year. "These reports offer a systematic means to evaluate the world's leading journals, with statistical information based on citation data," said Editor-in-Chief **Matthew Keifer**. "We've already received submissions



from authors who were influenced by the Impact Factor.”

The Journal continued its tradition of recent years by publishing another theme issue, this one dedicated to the, “Blueprint for Protecting Children in Agriculture: The 2012 National Action Plan.” An issue dedicated to the safety and health of the world dairy workforce is scheduled for publication in 2013.

Behind the scenes, Taylor and Francis selected the Journal for the ScholarOne manuscript tracking system, allowing for greater efficiencies in production. Editorial assistant **Kathie Smith** led the transition from the old, labor-intensive tracking system, which until 2008 relied on express-mailing of hard-copy manuscripts for proofing.

Dr. Keifer is assisted by Managing Editor **Scott Heiberger**.

FARM (Farm, Agricultural, and Rural Medicine) Clinic

Dr. Keifer provides specialty consulting for pesticide exposures, agricultural respiratory and allergic conditions, musculoskeletal disorders affecting the

ability to farm and resulting disability issues, complex workers’ compensation and other conditions arising from agricultural exposures. He sees patients weekly in Marshfield Clinic’s Occupational Health Department.

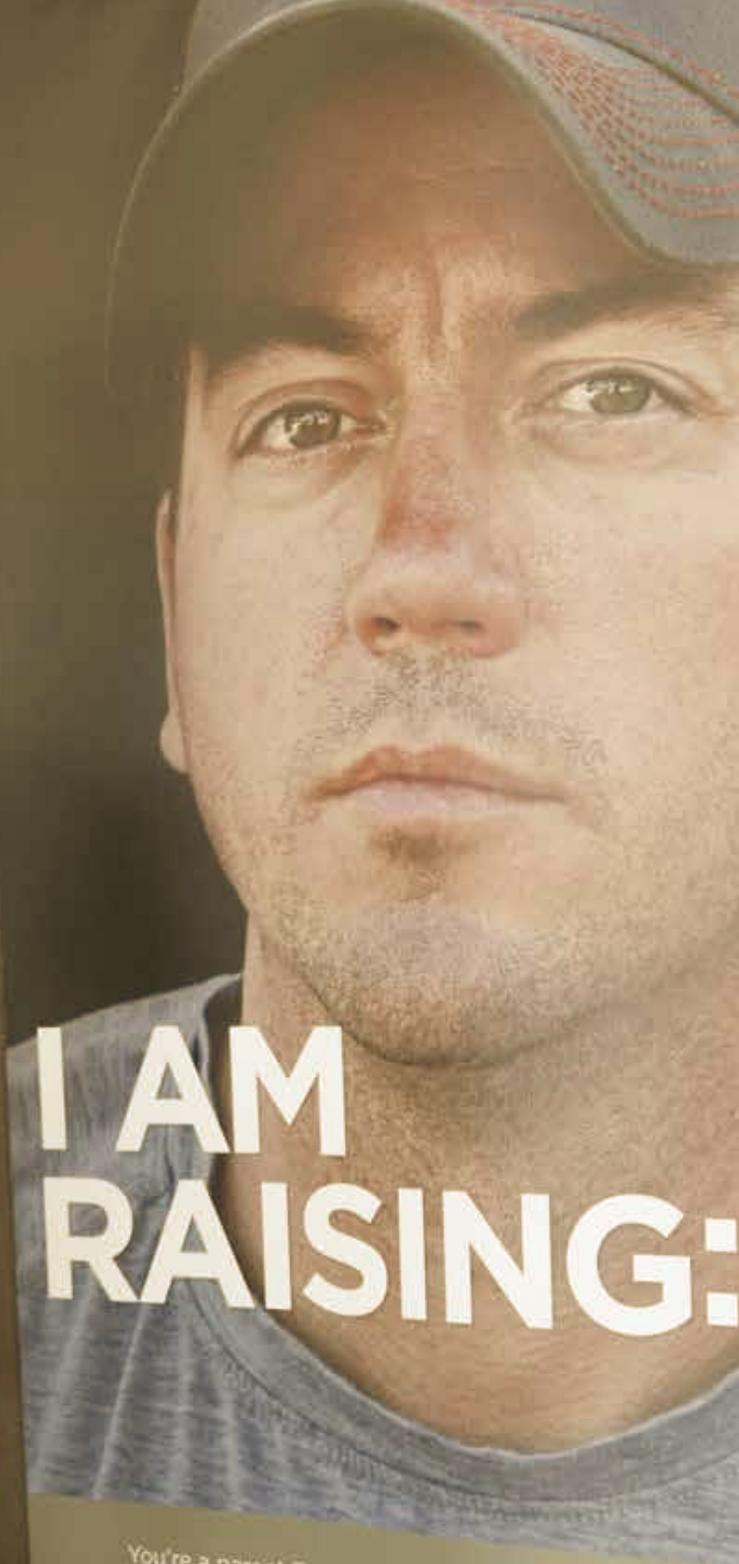
Dr. Keifer is board certified in occupational medicine and internal medicine. He serves on the Federal Advisory Committee Act (FACA) committee to the Office of Pesticide Programs. He also spearheaded efforts within the American Public Health Association to adopt policy resolutions supporting the protection of agricultural workers, and served on an Institute of Medicine committee that supported NIOSH’s efforts for the inclusion of occupational health data (OHD) in a national standard for the meaningful use of Electronic Health Records (EHRs). Although many vendors have developed specialized EHR systems for Occupational Medicine, EHRs for general group health have not typically included features related to a patient’s work life, despite clear evidence that such data can be critically important for quality care in almost any field of medical practice.

Dr. Steven Kirkhorn, who co-established the FARM Clinic, resigned in May 2012 to return to Minnesota and accept a position with the Minneapolis VA Health Care System. Dr. Kirkhorn joined the National Farm Medicine Center in 2003 as medical director and also served as director of Marshfield Clinic Occupational Health.

AgriSafe Network

Specific training in agricultural medicine is generally not provided in a medical school curriculum. To fill this education gap, the National Farm Medicine Center and Marshfield Clinic Occupational Health conduct multi-day training classes held in conjunction with the not-for-profit AgriSafe Network. These trainings confer AgriSafe certification to health care providers throughout the Marshfield Clinic system and the state of Wisconsin, with attendees gaining specialized knowledge in the treatment and prevention of agricultural illness and injury. The Farm Center and Marshfield Clinic hosted two trainings in 2012.





I AM RAISING:

You're a parent first, farmer second. Do all you can to make your farm safe for children. Protect the most important thing you'll ever raise.

PARENT FIRST. FARMER SECOND.

National Children's Center for Rural and Agricultural Health and Safety, Marshfield, WI

Childhood Agricultural Health & Safety

The Blueprint

“Blueprint for Protecting Children in Agriculture: The 2012 National Action Plan” (<http://marshfieldclinic.org/blueprint>) was released in April. The Blueprint builds upon the 1996 plan that launched a national initiative leading to a remarkable reduction in nonfatal injuries among children who live on, visit and work on farms. The National Children’s Center, led by Director **Dr. Barbara Lee** and Deputy Director **Dr. Barbara Marlena**, guided development of the Blueprint with input from the general public and leading researchers.

The Blueprint will be re-launched at the 2013 North American Agricultural Safety Summit, Sept. 25 – 27, 2013, Marriott Minneapolis City Center Hotel (www.ashca.com).

Free hard copies of the Blueprint are available by contacting the National Children’s Center, nccrahs@mcrf.mfldclin.edu, 1-800-662-6900.

Cultivate Safety



Knowledge, information and resources for keeping youth safe on the farm must reach those who need it. If these resources are to be used as intended, knowledge mobilization – getting the right

information to the right people at the right time – is key. The aim of this project is to determine if working with an agricultural marketing firm is effective in reaching farm parents who can use this information to guide actions that minimize injuries and fatalities to children under 18 years of age in the agricultural environment. The National Children’s Center is partnering with Broadhead Inc., to develop a multi-pronged campaign providing information to the general public in a user-friendly format.

This initiative is poised to launch in 2013 with an advertising campaign titled “Parent First, Farmer Second.”

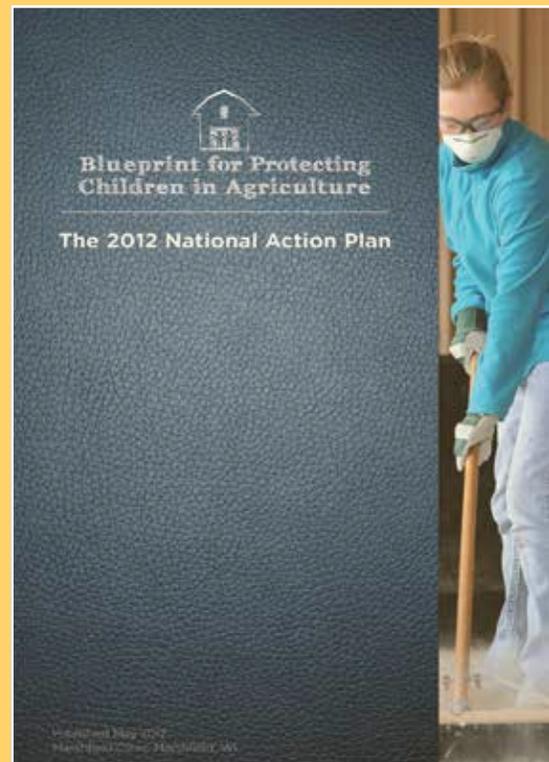
Agritourism: Interactive Web guide



Agritourism is more popular than ever, with millions of people visiting corn mazes, pumpkin patches, pick-your-own operations and other agricultural attractions every year.

Keeping visitors safe, especially children, is the purpose of the new interactive Web guide, available at www.safeagritourism.com.

Farmers can select virtual walk-throughs most appropriate for their operations. These walk-throughs identify health and safety hazards



and provide resources to fix the hazards. The walk-throughs and remedies are based on “Agritourism Health and Safety Guidelines for Children” (www.marshfieldclinic.org/agritourism).

“This really helps fill a gap,” said Karen Kollars, agritourism development consultant, Nebraska Tourism Commission. “It is exciting to finally have a one-stop guide available for agritourism businesses to refer to for health and safety guidelines, along with loads of practical information, resources and checklists.”

Project manager **Marsha Salzwedel, M.S.**, adapted the guidelines after obtaining feedback from farm owners and agritourism associations.

NAGCAT Tractor Guidelines Updated

It has been more than a decade since the North American Guidelines for Children’s Agricultural Tasks (NAGCAT) were released to assist parents in assigning developmentally appropriate and safe farm work to their children ages 7 – 16 years. The safe operation of farm tractors is emphasized within NAGCAT because farm tractors account for the majority of fatal injuries to youth working on farms. Since NAGCAT were released, a growing body of scientific evidence has accumulated related to the tractor guidelines and children’s physical ability to safely operate them.

A panel of childhood agricultural safety and health experts was convened by NIOSH to review the scientific literature and provide recommendations for updating the tractor guidelines. Based on their

recommendations, **Tammy Ellis** and **Barbara Marlena, Ph.D.**, have been working to update the adult responsibilities, recommended supervision, and age recommendations for 22 NAGCAT guidelines that involve tractor operations. In addition, five child development and tractors guidelines were developed with the assistance of David Schwebel, Ph.D., from the University of Alabama at Birmingham and include physical, cognitive, perceptual, social, and sociocultural development. The new and updated tractor guidelines are due to be released in spring of 2013.

Childhood Agricultural Safety Network (CASN)

Since 2000, this coalition of North American safety and health organizations (www.childagsafety.org) has strived to “set a vision and provide leadership and coordination of childhood agricultural injury prevention efforts in a manner that is both geographically and ethnically diverse.” CASN doubled in size this past year, with new members attracted by CASN’s mission and its informal structure. **Marsha Salzwedel** worked with **Dr. Lee** to continue the facilitation of CASN.

After a one-year hiatus the popular CASN Calendar returned with a 2013 edition, featuring 12 months of safety messages on topics including all-terrain vehicles, agritourism, supervision, weather safety, personal protective equipment, poison control and – new this year – a child development chart that helps parents assign appropriate agricultural work to their kids. Two dozen organizations collaborated on the calendar, the most ever.

Safe Play Research Project

The latest federal data indicate that up to 80 percent of all non-fatal injuries to children on farms occur when children are not engaged in work. The “Creating Safe Play Areas on Farms” initiative (www.marshfieldclinic.org/safeplay) offers an alternative to having young children in the farm worksite. The Safe Play research team is analyzing data from 450 farm families from six Midwestern states, and conducting on-site interviews with a physical assessment of selected play areas of the intervention groups and controls. The information gained from this study will help to develop messages to increase the knowledge about the benefits of creating safe play areas.

The team consists of Eileen Fisher, Ph.D., and Marizen Ramirez, Ph.D., University of Iowa; Risto Rautiainen, Ph.D., University of Nebraska Medical Center; and **Tammy Ellis**, National Farm Medicine Center.

Mini-grants

The National Children’s Center federal award includes annual funding for mini-grants that allow community organizations to conduct small-scale projects and pilot studies.

A requirement this year was that each application clearly indicate how it would address a priority in childhood agricultural injury prevention as outlined in the “Blueprint for Protecting Children in Agriculture: The 2012 National Action Plan.”

Since 2002, 43 projects have been funded in amounts up to \$20,000. More than half of



The Childhood Agricultural Safety Network (CASN) held its annual in-person meeting on June 25, 2012, in Burlington, Vermont, as part of the International Society for Agricultural Safety and Health conference. Thirty organizations were represented.

the projects have addressed vulnerable populations.

Awardees for FY 2013:

- Yvonne Chen, Ph.D., Virginia Polytechnic Institute and State University, “Ultraviolet Radiation monitoring and Intervention Strategies for Preventing Skin Cancer Among Farm Children.” Goal: Assess the effectiveness of an ultraviolet (UV) radiation monitoring intervention for protecting vulnerable, southwest Virginia farm children (ages 14 - 16) from overexposure to UV radiation.
- Ryan Kelly, M.S., Mississippi Rural Health Association, “The Mississippi Consortium for the Prevention of Agricultural Injury among Youth (MCPAIY).” Goals: 1) Host a regional conference on prevention of agricultural injuries among children; and 2) Develop the Mississippi Consortium for the Prevention of Agricultural Injury among Youth.

- Rebecca G. Lawver, Ph.D., Utah State University, “Policies and Procedures that Protect Hired Youth Agricultural Workers: Examining High School Supervised Agricultural Experiences Programs.” Goal: Implement the recommended strategy of guiding western agricultural employers in strategies for hiring youth to work in developmentally appropriate jobs with supervision, training, and opportunities for career advancement within the agriculture industry.

Ongoing Research

Dr. Barbara Marlena, National Children’s Center, is lead investigator on a study looking at how children of different ages process information and make decisions while driving tractors. They’re using the National Advanced Driving Simulator at the University of Iowa, considered to be the world’s most advanced ground vehicle simulator. This two-year pilot study is funded

by the National Institute for Occupational Safety and Health. Results will assist in generating a model of developmental factors relevant for safe tractor operations by youth that can be used and tested in future research, intervention development, and policy applications. The Associated Press published an article on the study that was picked up nationally by dozens of media outlets, including the Washington Post, Boston Globe and CBS News. Study co-investigators are Will Pickett, Ph.D., Queen’s University; Richard Berg, M.S., Marshfield Clinic Research Foundation; Tim Brown, Ph.D., University of Iowa; and David Schwebel, Ph.D., University of Alabama, Birmingham.

Dr. Marlena is co-investigator on another study, “Saskatchewan Farm Injury Cohort Study: Phase II,” which is looking at physical, economic and cultural environments and their effects on injury rates in agricultural populations.

Agricultural Safety & Health Council of America



The National Farm Medicine Center, which facilitated establishment of ASHCA in 2007, has announced that administration of the producer-driven group will be transitioning out of the Farm Center. **Dr. Barbara Lee** will take on duties as ASHCA executive director while overseeing the group's affairs from a home office. Dr. Lee had been administrative director.

The Farm Center provided an incubator for ASHCA for five years, long enough for the new group to get on its feet, Dr. Lee said. ASHCA was formed to aid researchers and agribusiness leaders in working together to address ongoing and emerging occupational safety and health issues affecting U.S. agriculture. ASHCA strives to influence research priorities to rapidly identify best management practices for worker safety and health.

Dr. Lee will continue to facilitate planning for the ASHCA-hosted September 2013 North American Agricultural Safety Summit. ASHCA's previous major events included its first national meeting (2009), the "Be Safe, Be Profitable: Protecting Workers in Agriculture" conference (2010), and annual meetings co-located with the AgCONNECT world trade show (2011 and 2013).





Migrant & Immigrant Issues

Migration, language barriers and a lack of acculturation adds to the hazards inherent in agriculture. With Hispanic workers representing some 40 - 60% of the Wisconsin dairy workforce (and about one-third of the agricultural workforce in the United States), the Farm Center continues building capacity to address the safety and health needs of these workers.



The Farm Center is continuing its long partnership with Migrant Clinicians Network (MCN) by producing culturally appropriate educational interventions to the dairy industry. **Amy K. Liebman, M.P.A., M.A.**, who directs MCN's environmental and occupational programs, remains the key liaison overseeing MCN's work with the Farm Center. MCN serves as an important partner in the Farm Center's Upper Midwest Agricultural Safety and Health (UMASH) projects, co-directing a project that focuses on immigrant workers.

The *Seguridad en las Lecherías* project employs a popular education model that builds on experiential learning approaches relevant to the everyday lives of workers.

This project involves a diverse core team: Liebman, Patricia Juárez-Carrillo, Ph.D., M.P.H., and Michael Piorunski from MCN; and **Dr. Matthew Keifer, Francisco Guerrero, Iris Reyes, M.P.H.** and **Dennis Ray** from the Farm Center.

The National Farm Medicine Center is conducting two additional initiatives that deal with health and safety in dairy. All three projects combined efforts to conduct a multifaceted needs assessment in which the core team interviewed 14 farmers, clinicians, trainers, dairy industry representatives and farm insurers. They also conducted a focus group with 17 agriculture extension agents. A major part of the needs assessment included organizing

and facilitating five focus groups with a total of 37 workers. The needs assessment also included an extensive literature review and site visit to numerous dairy farms. The findings, by and large, demonstrate an overwhelming need for a focus on health and safety in dairy.

The *Seguridad* project works directly with the Farm Center's Agricultural Safety Consulting (ASC). The project's curriculum and training methodology will be integrated into ASC services. The *Seguridad* team has helped strengthen ASC's capacity to address the health and safety needs of immigrant workers in a culturally and linguistically appropriate format.

MCN also assists the National Children's Center in addressing the needs of migrant children and hired adolescent farmworkers. Liebman participated as a core team member on the Blueprint project, helping foster an important focus on migrant children, and disseminated the Blueprint content via presentations and MCN. She oversaw one of the National Children's Center mini-grants which improved conditions at the Redlands Christian Migrant Association Head Start Centers in Florida. The mini-grant project provided an innovative, interactive occupational pesticide exposure educational program along with decontamination facilities that were installed at 15 Redlands centers. The purpose of the project was to raise and promote occupational pesticide protection

awareness and highlight the importance of decontamination practices among farm worker parents to protect their children and reduce take-home pesticide exposure. Liebman continued to play a key role in the Childhood Agricultural Safety Network, educating members on migrant issues and contributing a pesticide safety message to the network's popular 2013 safety calendar.

MCN distributed *Aun Que Cerca...Sano* to more than 130 organizations in 2012. This colorful, educational, Spanish language comic book helps farmworker parents understand ways to protect their children from pesticide exposure. This resource was originally developed in partnership with Farm Safety 4 Just Kids with support from the National Children's Center. In collaboration with the National Association of State Departments of Agriculture Research Foundation, MCN distributed 60,000 copies of the comic book in 2012 and given the continued demand, hopes to distribute an additional 60,000 copies in 2013.

Health and safety professionals, farm families, and media can benefit from the Spanish-language resources on the National Children's Center Web site, www.marshfieldclinic.org/nfmcchildrensresources. These resources include: strategies to prevent injury to children and adolescents, guidelines for designing and building an outdoor safe play area on a farm, and pesticide safety information.

Administration/Outreach

The Farm Center's administration core provides a framework to support, guide and monitor the progress of the NFMC's initiatives. In 2012 the center welcomed three administrative staff members.

Kathy Heintz-Dzikowich, center research administrator, manages budgets and helps ensure good communication between the research and professional staff. Heintz-Dzikowich brings nearly 18 years of human resource management experience in healthcare, retail, manufacturing and industry. She holds a bachelor's degree in organizational communications from the University of Wisconsin, Stevens Point.

Kathie Smith, administrative secretary, assists Dr. Barbara Lee with the National Children's Center and Agricultural Safety and Health Council of America. Smith also is the editorial assistant for the Journal of Agromedicine. Smith has more than 30 years' administrative experience, most recently with dairy exports and the trucking industry.

Amanda Draxler, administrative secretary, supports Agricultural Safety Consulting and all of Dr. Keifer's projects. She has worked in administrative support positions for six years. She has a bachelor's degree in psychology from the University of Wisconsin, Eau Claire, with an emphasis in behavior analysis. She minored in Spanish, an asset to the Farm Center as it works increasingly with Wisconsin's Spanish-speaking dairy labor force.

Outreach

In 2012, **Tammy Ellis**, education outreach specialist, coordinated these activities:

- Tours and presentations for Midstate Technical College students, and the Western District University of Wisconsin Cooperative Extension.
- Presentations and/or exhibitions at the Wisconsin State Cranberry Growers Association Cranberry School; Community Health Connections Rural Health Forum in New London, Wisconsin; International Society for Agricultural Safety and Health Conference in Burlington, Vermont; Wisconsin Farm Technology Days; the Wisconsin Agricultural Bankers Conference in Wisconsin Dells; the National Agricultural Bankers Conference in Milwaukee, Wisconsin; the Professional Dairy Business Association annual Business Conference; the "Heart of the Farm" conference in Jump River, Wisconsin; the Wood County Farm Bureau meeting; the Association of Illinois Milk, Food, and Environmental Sanitarians conference; and the Agricultural Media Summit and National Association of Farm Broadcasting conferences.



- Training for Wisconsin Academy for Rural Medicine (WARM) residents and two 2½-day AgriSafe training courses for health professionals.
- Hosting of the AgrAbility of Wisconsin Summit.
- Sponsorship of the Wisconsin State Championship Holstein Show through the Wood County State Holstein Association.
- Sponsorship of the Pen of Champions and hand washing stations at the Central Wisconsin State Fair; promotion of hearing conservation and hand washing at the Marshfield Farm Show.
- Hosting of the “Agricultural Safety and Health: Focus on Dairy” preconference in New Zealand in advance of the World Injury Conference.

- Sponsorship of radio public service announcements in central Wisconsin for National FFA Week, June Dairy Month and the Central Wisconsin State Fair.
- Webinars: hosted “Farm and Ranch eXtension in Safety and Health (FReSH) Community of Practice (CoP),” and “Planning your Heat Prevention Program,” and presented on “Cholinesterase Monitoring.”

Media Relations

It was a busy year. The Farm Center doubled in scope and size, and a record number of media inquiries coincided with proposed updates to the federal labor laws governing children hired to perform agricultural work. The child labor updates pertained to tasks that research has shown to be particularly hazardous to young workers under age 16.

However, in the face of pushback from farm groups and lawmakers from rural states, the U.S. Department of Labor withdrew the proposed changes.

The National Farm Medicine Center continued to proactively engage and educate media professionals on Center activities with the goal of shaping public policy discussion and reducing the burden of injury and illness in agricultural populations. **Scott Heiberger**, communications specialist, represents the Farm Center as a member of the National Association of Farm Broadcasting and the American Agricultural Editors Association. Media releases are sent to agribusiness and commodity group communicators as well as traditional media professionals. Updates are made regularly on Facebook, Twitter and YouTube.

Presentations

UW Cooperative Extension Presentations

January 17, Marshfield, WI
“National Children’s Center Overview” Marsha Salzwedel
“NFMC & ASC Overview,” Scott Heiberger, Tom Drendel and Carol Brotski

Progressive Agriculture Foundation Coordinator Training

January 22, Epic Cruise Ship, Caribbean
“Child Agricultural Safety Basics and Resources,”
Marsha Salzwedel

Community Health Connections: Rural Health Forum

May 27, New London, WI
“Farm Safety,” Marsha Salzwedel

National Latino Cancer Summit*

July 25, San Francisco, CA
“Paso a Paso: A Look at Justice from the Frontline and Beyond,”
Amy K. Liebman

Australian Remote Health Conference

August 2, Mount Isa, Queensland, Australia
“Childhood Agricultural Injury Prevention: Global Obligations and Opportunities,” keynote,
Barbara Lee

2012 Nordic Meeting on Agricultural Occupational Health and Safety

August 29, Ystad, Sweden
“Promoting Safety and Health in Agritourism,”
Marsha Salzwedel

AFOP National Conference, Empowering America’s Farmworkers: Providing Education, Training, and Advocacy

September 19, 2012
Boston, MA
“Pesticide Health and Safety: Partnering with Migrant Health,”
Amy K. Liebman
“Pesticide Health and Safety: Developing a Promotora Program,”
Amy K. Liebman

Agricultural Safety & Health: Focus on Dairy

September 28-30, North Palmerston, New Zealand
“Health Care for Dairy Farmers and Farm Workers in Wisconsin,”
Matthew Keifer

World Injury Conference

October 1-4, Wellington, New Zealand
“Development and Implementation of an Agricultural Safety Consultation Program to Protect Dairy Farm Workers,” Matthew Keifer, Carol Magurany-Brotski, Francisco Guerrero, Tammy Ellis
“The 2012 Blueprint for Preventing Childhood Agricultural Injuries in the U.S.,” Barbara Lee, Susan Gallagher, Amy K. Liebman, Mary E. Miller, Barbara Marlenga

25th Annual East Coast Migrant Stream Forum

October 20, 2012
Virginia Beach, VA
“Environmental and Occupational Health: Engaging Frontline Clinicians,”
Amy K. Liebman and Michael Piorunski

American Public Health Association Meeting

October 27-31, 2012, San Francisco, CA

“Farm MAPPER” (video competition), Iris Reyes, Francisco Guerrero, Matthew Keifer

International Society of Exposure Science Conference

October 28-Nov 1, Seattle, WA
“Measurement of Organophosphorus Pesticide Adducts to Human Butyrylcholinesterase using two HPLC/MS/MS Methods,”
Christopher Simpson, Michael Paulsen, Matthew Keifer

Children’s Health Alliance of Wisconsin Keeping Kids Alive Summit

November 2, Madison, WI
“Conducting effective reviews of farm and recreational deaths,”
Barbara Marlenga

2012 Midwest Regional Agricultural Safety and Health Conference

November 14, Cedar Rapids, IA
“NCCRAHS Research to Practice Initiatives” and “Promoting Safety and Health in Agritourism,”
Marsha Salzwedel

2012 Mississippi Agritourism Association Conference

November 28, Jackson MS (presented via videoconference)
“Safety on the Farm,”
Marsha Salzwedel

2012 Summit on the Science of Eliminating Health Disparities

December 17, 2012
Washington, DC
“The Health of the Low-Income Workforce: Integrating Occupational Health and Other Public Health Approaches,”
Amy K. Liebman

Publications

Garcia D, Hopewell J, **Liebman AK**, Mountain K. The Migrant Clinicians Network: connecting practice to need and patients to care. *Journal of Agromedicine*. 2012;17(1):5-14.

Keifer MC. The future structure of childhood agricultural injury prevention: first the blueprint. *J Agromedicine*. 2012;17(2):83-4.

Marlenga B, Berg RL, Linneman JG, Wood DJ, Kirkhorn SR, Pickett W. Determinants of early stage hearing loss among a cohort of young workers with 16-year follow-up. *Occupational and Environmental Medicine*. 2012;69(7):479-484.

Lee BC, Gallagher SS, **Liebman AK**, Miller ME, **Marlenga B** (Eds). *Blueprint for Protecting Children in Agriculture: The 2012 National Action Plan*. Marshfield, WI: Marshfield Clinic; 2012.

Heiberger S, Alexander B, **Keifer M**, Bender J. New NIOSH-funded center focuses on safety and health in changing agricultural landscape. *Streamline newsletter*. March/June 2012; 18(2);11,13.

Lee BC, Gallagher SS, **Liebman AK**, Miller ME, **Marlenga B**. Developing the 2012 National Action Plan for Protecting Children in Agriculture. *Journal of Agromedicine*. 2012;17(2): 88-93.

Marlenga B, **Lee BC**, Pickett W. Guidelines for children's work in agriculture: Implications for the future. *Journal of Agromedicine*. 2012;17(2):140-148.

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Keifer MC, **Heiberger S**. Looking for lessons in the child agricultural labor law dust-up. *J Agromedicine*. 2012 Jul;17(3):261-3.

Treadwell RJ, **Keifer MC**. Research-to-practice transition of a portable cholinesterase monitoring kit: how does it affect the work of clinics? *Washington State Journal of Public Health Practice*. 2012;5(1):44-57.

Cunningham R, Simpson C, **Keifer MC**. Health hazards of ganaderos in Paraguay. *International Journal of Occupational and Environmental Health*. 2012 Jul-Sep;18(3):181-187.

Lee B, **Marlenga B**. Childhood agricultural injuries. In Liller K (Ed). *Injury prevention for children and adolescents: research, practice and advocacy*. (Second Edition). American Public Health Association Press; 2012.

Heiberger S. Lessons learned from the child agricultural labor law debate. *Journal of Agromedicine*. 2012;17(4):351-353.

Nelson W, **Lee B**, Gasperini F, Hair D. Meeting the Challenge of Feeding 9 Billion People Safely and Securely. *Journal of Agromedicine*. 2012;17(4);347-350.



Visitors

- 1** Starting with Appalachian coal miners, and continuing over a broad array of occupations, Earl Dotter, shown here shooting in a central Wisconsin milking parlor, has observed and documented the working lives of Americans for more than 40 years (<http://earldotter.com/>). The Farm Center hired Dotter this past summer to take photos depicting dairy work and life. Many of his photos will be part of a research project that is creating a mechanism so that doctors can review, understand and develop a transitional plan that will safely and promptly return the worker to the workplace.
- 2** David Schwebel, Ph.D., Professor of Psychology, University of Alabama at Birmingham, is working with lead investigator Barbara Marlenga, Ph.D., on a study looking at how children of different ages process information and make decisions while driving tractors. Results will assist in generating a model of developmental factors relevant for safe tractor operations by youth.
- 3** Wisconsin Governor Scott Walker and the Farm Center's Carol Magurany-Brotski, M.S.
- 4** Agricultural Instructor Phil Ely and his agribusiness students from MidState Technical College (MSTC) visited the National Farm Medicine Center and National Children's Center to learn about new programs and bioinformatics.



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Childhood Agricultural Safety Network Members - 2012

AgriSafe Network

Spencer, IA
Contact: Natalie Roy

Association of Farmworker Opportunity Programs

Washington DC
Contact: Norma Flores Lopez

Canadian Agricultural Safety Association

Winnipeg MB
Contact: Glen Blahey

Central States Center for Agricultural Safety and Health

Omaha, NE
Contact: Risto Rautiainen

Child Injury Prevention Alliance

Columbus, OH
Contact: Tracy Mehan

Farm Safety Association

Guelph, ON
Contact: Dean Anderson

Farm Safety 4 Just Kids

Urbandale, IA
Contact: Shari Burgus

High Plains Intermountain Center for Agricultural Health and Safety

Fort Collins, CO
Contact: Allison De Vries

Iowa's Center for Agricultural Safety and Health

Iowa City, IA
Contact: LaMar Grafft

Migrant Clinicians Network

Salisbury, MD
Contact: Amy K. Liebman

Mississippi Rural Health Association

Madison, MS
Contact: Ryan Kelly

National Center for Farmworker Health

Buda, TX
Contact: Sylvia Partida

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

Marshfield, WI
Contact: Barbara Lee

National Education Center for Agricultural Safety

Peosta, IA
Contact: Dan Neenan

National FFA

Indianapolis, IN
Contact: Jim Armbruster

New York Center for Agricultural Medicine and Health

Cooperstown, NY
Contact: Jim Carrabba

North Carolina Agromedicine Institute

Greenville, NC
Contact: Robin Tutor

Norwegian Farmer's Association for Health, Safety and Environmental Services (Landbrukets HMS-tjeneste)

Kongsberg, Norway
Contact: Anne Marie Heiberg

Ohio State University

Columbus, OH
Contact: Dee Jepsen

Oregon Health & Sciences University

Portland, OR
Contact: Diane Rohlman

Pacific Northwest Agricultural Safety and Health (PNASH) Center

Seattle, WA
Contact: Diane Rohlman

Parachute (formerly Safe Kids Canada)

Toronto, ON
Contact: Pam Fuselli

Pennsylvania State University

University Park, PA
Contact: Dennis Murphy

University of Vermont Extension

Burlington, VT
Contact: Kristen Mullins

Upper Midwest Agricultural Safety and Health

Minneapolis, MN
Contact: Tammy Ellis

Washington State Department of Labor & Industries

Olympia, WA
Contact: Mary E. Miller

Western Center for Ag Safety and Health

Davis, CA
Contact: Sandra L. Freeland

Western Kentucky University

Bowling Green, KY
Contact: Susan Jones

Making a Gift

Every day, the team at the National Farm Medicine Center is working hard on behalf of farmers and rural residents through their research and outreach efforts. They address important issues like agromedicine, occupational health and childhood agricultural injury prevention through programs such as the Rollover Protective Structure Rebate Program, Agricultural Safety Consulting Program, FARM (Farm, Agricultural and Rural Medicine) Clinic and the

Wisconsin Dairy Workers Safety and Health Initiative.

However, these important programs would not be possible without the philanthropic support of the generous individuals, foundations and businesses who share NFMC's vision for a safer and more effective agricultural workplace.

To join NFMC in their mission to save lives, prevent injury, and improve health within the agriculture industry, please consider a gift to support their

work or attend Auction of Champions on September 19, 2013. To learn more, visit www.marshfieldclinic.org/giving or contact Marshfield Clinic Development Department:

By mail:

Marshfield Clinic Development
1000 N. Oak Avenue, 1R1
Marshfield, WI 54449

By phone:

715-387-9249 or 1-800-858-5220

By email:

giving@marshfieldclinic.org



The Auction of Champions, held September 20, 2012, at RiverEdge Golf Course, Marshfield, raised a record \$247,000-plus to benefit the work of the National Farm Medicine Center, including funds to pilot the Farm Center's new tractor rollover protection program.

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www.nagcat.org

