The mission of the National Farm Medicine Center is to conduct high quality research addressing human health and safety associated with rural and agricultural work, life and environments. The NFMC staff is indebted to the individuals described in this history who had the foresight to establish this Center upon which our accomplishments and current efforts are based.

We are grateful to Marshfield Clinic for its ongoing support. We extend special thanks to the many generous people who have helped the NFMC through their financial support, research participation, on-farm visits and project guidance. We will continue our quest to generate timely and relevant scientific knowledge that advances clinical care and guides agricultural disease and injury prevention initiatives.
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PROMOTING AGRICULTURAL HEALTH AND SAFETY:
A history of the National Farm Medicine Center
1981-2006
TITLE
Promoting agricultural health and safety:
A history of the National Farm Medicine Center

AUTHOR
Joseph J. Mazza

DEDICATION
This 25-year history of the National Farm Medicine Center is dedicated to Dean Emanuel, M.D. It was his vision and sentinel research addressing illnesses unique to the farm environment that sparked the emergence of a new discipline of medicine, now called Agromedicine.

ACKNOWLEDGEMENTS
The following individuals provided valuable information essential for preparation of this document: Bob Carlson, Jay Ellingson, Dean Emanuel, Paul Gunderson, Bill Hocking, Bob Intress, Barbara Lee, Dick Leer, Russ Lewis, George Magnin, Jim Marx, John McCarty, Bill Mineau and Fritz Wenzel. I am also grateful to the staff of the George E. Magnin Medical Library and the National Farm Medicine Center for assistance in securing records, photographs and newspaper clippings to augment the oral history provided by others. The document preparation and editing was facilitated through the diligent efforts of Linda Weis and Ginny Mazza. The final steps of production were guided by editors Scott Heiberger and Rebecca Normington, and graphic designer Erik Borreson. I sincerely appreciate the many individuals who provided insights and assistance as the rich history of the NFMC was unfolded for my review and documentation.

FOR ADDITIONAL COPIES
Contact the National Farm Medicine Center
Telephone: 1-800-662-6900 or 715-389-4999
Internet: http://www.marshfieldclinic.org/nfmc

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Twenty-five years ago, a group of Marshfield Clinic physicians and other professionals employed at the Clinic had a vision to dedicate a segment of their medical commitment and expertise to providing health care for the rural population of central Wisconsin. Through the support and nurturing from the Clinic and others, there arose from a meager beginning a state-of-the-art center of excellence dedicated to those individuals who live and work in the agrarian environment that has long been the backbone of this great country of ours. With the Clinic’s health maintenance organization (HMO) fully operational at that time, it provided the opportunity for every farm family in the area to be part of the largest privately-owned health care system in the state. It is this unique population of patients who drew attention to their special needs and provided the nidus for the development of a rural health care center. They also have played a key role in the success and accomplishments of the National Farm Medicine Center over the past quarter of a century.

JOSEPH J. MAZZA, M.D., MACP
Marshfield Clinic Hematologist-Oncologist
Member, NFMC Advisory Board
Marshfield Clinic is a large tertiary and primary care medical center with 41 locations in central, northern and western Wisconsin. Its namesake, and the location of its first and largest center, is the city of Marshfield. Marshfield Clinic evolved alongside Saint Joseph’s Hospital in Marshfield, owned by Ministry Health Care. These two organizations bonded in the early 1900s and have maintained a complementary relationship over the past 90 years, providing health care to the citizens of Wisconsin as well as outside the state’s borders. By the 1960s both organizations had grown significantly and Marshfield Clinic’s reputation as a center of excellence was known statewide. By 1970 Marshfield Clinic had approximately 100 physicians and occupied the largest building in Marshfield, a seven-story brick building on Central Avenue that later became Marshfield’s City Hall.
With the addition of new physicians during the early 1970s, it became necessary to expand facilities. In 1974 Marshfield Clinic’s Board of Directors approved a major expansion plan and the Clinic acquired a large piece of land adjacent to the site of Saint Joseph’s Hospital. This was the beginning of a series of expansion projects to accommodate the rapidly growing medical staff. In addition, expansion of laboratory facilities was necessary and was done jointly by Marshfield Clinic and Saint Joseph’s Hospital.

Because of the predominantly rural population for which the Clinic provided health care, and the agrarian culture that was based on the production of dairy products, research and education programs related to this environment seemed an obvious complementary component of health care in that geographic area.

In 1979, a group of physicians and other professional staff of Marshfield Clinic began discussions about the establishment of an agricultural medicine center that would focus on and emphasize health issues unique to farmers and their families who made up a large segment of the population in central Wisconsin and who were also patients of Marshfield Clinic. This concept appeared to be a natural outgrowth of the ongoing research and clinical expertise that already existed at Marshfield Clinic. The newly proposed agricultural center would function under the aegis of the Marshfield Clinic Research Foundation* which was established in 1959 and had been involved in formidable research projects involving rural health and illnesses unique to the agricultural environment. With Marshfield Clinic’s acquisition of Dean Emanuel, M.D., a cardiologist who joined the staff in 1958 and who had a deep interest in respiratory illnesses and farmer’s lung disease, the Foundation began a series of research projects and investigations of unique maladies occurring in dairy farmers.

Note: * The official name of the Foundation has evolved through the years: Marshfield Clinic Foundation for Medical Research and Education; Marshfield Medical Foundation; Marshfield Medical Research Foundation; Marshfield Medical Research and Education Foundation; and Marshfield Clinic Research Foundation. For the purposes of this history, it will be referred to as “Marshfield Clinic Research Foundation” and “the Foundation.”
In 1960, the Foundation received its first grant from the National Institutes of Health (NIH). A total of $9,999 was granted to Dr. Emanuel earmarked for “experimental investigation of Farmer’s Lung” and would extend over a five-year period. At that time, Fritz Wenzel, who was co-investigator on the grant and director of Marshfield Clinic Laboratories, would play an important role in the Foundation’s research endeavors over the next two decades. As director of the Foundation, Wenzel was intimately involved in the research activities and grant applications as well as hiring a group of dedicated research scientists to further explore new diseases being found in the farm population.

Dean Emanuel, M.D., outside the original Marshfield Clinic Research Foundation building.
In 1962, the first occupational health study was conducted as part of the Foundation’s community services mission and served as the basis for the expansion of the Foundation’s commitment to environmental medicine and rural health. Dr. Emanuel identified maple bark disease among paper mill workers. Occupational recommendations to assist in prevention of this respiratory disorder were adopted by the mills, leading to the precipitous drop of its incidence in mill workers. In 1964, a culture technique was developed at the Foundation to help identify the causative agent for what was at that time called “farmer's lung.” This was a chronic, progressive, inflammation inside the lungs of farmers that significantly compromised their ability to continue their occupation and was thought to be due to their exposure to organic farm dust. Work continued on respiratory diseases that were common in dairy farmers, and development of simple blood studies and identification of causative organisms propelled the Foundation to a prominent position in the realm of environmental respiratory illnesses. By 1971 intervention and education programs targeting farmers were developed in cooperation with the University of Wisconsin Agricultural Research Station, located just outside Marshfield, to help those stricken with the respiratory illnesses so that they might continue farming. This was a significant advancement for the farming community and led to the Foundation’s designation in 1972 as a Specialized Center of Research (SCOR) that was supported by a grant from the National Institutes of Health. Wenzel, then executive director of the Foundation, was instrumental in setting up the laboratory and worked closely with Dr. Emanuel on studies related to respiratory illnesses. Wenzel would later become executive director of Marshfield Clinic.

More than 50 publications have been based on the work of Foundation researchers involved in the investigation of farmer's lung disease. This body of literature, along with that of researchers in other institutions, has contributed significantly to increasing physician awareness and understanding of this malady affecting farmers. In 1975, Dr. Emanuel identified the new disease of pulmonary mycotoxicosis. This disease is similar in symptoms to that of farmer’s lung disease but the cause is completely different. It, too,
affects primarily farmers and is caused by the inhalation of large amounts of mold-laden dust containing fungi, provoking a toxic, rather than an allergic, reaction. The previous work done at the Foundation on farmer’s lung disease was helpful in providing a framework in which to work on the identification of this new disease. The grant extended through 1976 and was then renewed for another five years. It was largely responsible for continued growth in the reputation of the Foundation and enabled the acquisition of additional researchers with expertise in microbiology, immunology and rural health. In the process of conducting investigations into the cause of farmer’s lung disease, aspergillosis and other related disorders, the Foundation had attained a position of prominence among institutions throughout the country with similar interests in this type of research.

(Left) Intervention and education programs were developed to help those stricken with farmer’s lung and other respiratory illnesses so that they might continue farming. (Marshfield News-Herald, August 12, 1982.)

(Right) The author of this article, Barbara J. Ault, R.N., was a research assistant for Jim Marx, Ph.D., in the Foundation’s immunology laboratory. She made numerous on-farm visits with the NFMC outreach testing van to conduct pulmonary function tests of farmers.
July 23, 1981

Einarad Haniuk, Ph.D.
Marshfield Medical Foundation
510 N. St. Joseph Ave.
Marshfield, WI 54449

Dear Dr. Haniuk:

Enclosed is the final report of the National Farm Medicine Center Feasibility Study Committee. This document is the culmination of a sustained, year-long effort by you and other Committee members actively committed to the health of our agricultural population.

I hope you will have an opportunity to review its' contents prior to our final Committee meeting Wednesday, July 29, 1981 at 7:30 p.m. in the Marshfield Clinic Boardroom (please note the new location).

Sincerely,

E. P. Horvath

EDWARD P. HORVATH, JR., M.D., M.P.H.

EPH/pw
 CHAPTER II
Birth of the National Farm Medicine Center

It was these research activities and the growing reputation of the Foundation that stimulated early discussions to develop an agricultural medicine center in Marshfield. A number of key individuals felt a strong personal commitment to the farm center concept, and the need to have a clearly designated center that specifically targeted illnesses associated with the agricultural environment of central Wisconsin. Tom Swenson, then director of Marshfield Clinic’s Marketing and Communications Department, along with Dr. Emanuel, initiated discussions of the farm center concept. Additional members of the group included William Schorr, M.D., Marshfield Clinic dermatologist; Richard Sautter, M.D., a cardiovascular surgeon, who at that time was executive director of the Foundation; Bob Intress, a physician assistant and assistant director of Marshfield Clinic’s Department of Medical Education; and Ed Horvath, M.D., an occupational medicine specialist who was later named chairman of the Feasibility Study Group and medical director of the National Farm Medicine Center.

The concept of establishing a farm medicine center at Marshfield Clinic was based on a number of compelling factors. Marshfield Clinic had already achieved a national reputation with respect to its research on respiratory illnesses unique to agriculture and was actively involved in preventing other health hazards related to this occupational environment. Research success, along with the location of the Clinic in the geographic center of Wisconsin—amidst dairy farming and crop farming industries, as well as industries associated with processing materials grown from the soil, such as forest products and the paper industry—were the essential factors supporting the
idea. The Feasibility Study Group identified a formidable array of agricultural health issues that needed to be addressed through further research, education and community service projects. This list consisted of studies on long-term effects of pesticide and chemical use, musculoskeletal disorders and repetitive trauma associated with farming, organic farm dust associated with acute and chronic respiratory illnesses, persistent noise exposure, dermatitis related to environmental exposure, mental health problems, zoonotic diseases, agricultural injuries and deaths. It was Dr. Emanuel’s contention that, “the knowledge derived from agricultural health research which is accumulated here has great potential for being disseminated to the benefit of agricultural workers across the country.”

Continued discussions and meetings of the core group and a year-long feasibility study, which took place in 1980 and culminated in July of 1981, resulted in approval by the Board of Directors of Marshfield Clinic of a farm medicine center designed for the particular needs of the rural community and continued research and education endeavors in environmental medicine. A generous gift of $250,000 was provided by Marshfield Clinic to initiate the Center. Dr. Emanuel saw the Foundation making a commitment to a bold new concept in the focus of health care services. The formal announcement to the community and media was made in the spring of 1982 and gained extensive media exposure both locally and regionally. At that time, the Foundation had already committed to a cooperative arrangement for collaborative research in agricultural health with the Institute of Agricultural Medicine at the University of Iowa, which further enhanced the reputation of the Foundation’s commitment to agricultural medicine. Based on its previous accomplishments recognized nationwide, the center was given the name “National Farm Medicine Center.”
During the 1980s Marshfield Clinic was experiencing rapid growth. It had moved from downtown Marshfield to the northwest side, physically connected to Saint Joseph’s Hospital. Additional expansions had taken place since the initial move in 1975. Approximately 170 staff physicians were at Marshfield Clinic in 1980. The decade of the 80s proved to be a time of growth and expansion for both the Clinic and Foundation, as well as the National Farm Medicine Center. The staff of the Foundation at that time was housed in the old Doege Clinic building across Saint Joseph Avenue from the then Saint Joseph’s Hospital School of Nursing. That facility soon became crowded and inadequate with the acquisition of new scientists and support personnel. A group of mobile homes was brought into the adjacent parking area to serve as temporary quarters for administrative staff and other personnel. During this time, the number of research projects and education service programs escalated and additional collaborative arrangements with other institutions were announced. The Foundation soon became one of the world’s largest testing centers for farmer’s lung disease. Jim Marx, Ph.D., an immunologist who joined the Foundation in early 1973, was largely responsible for the testing and laboratory facilities handling specimens from patients with suspected farmer’s lung disease that were being sent to the National Farm Medicine Center from all over the world for analysis.

In addition to incoming grants and contracts to support research projects of the National Farm Medicine Center, numerous community service and education programs sponsored by the Farm Center were being conducted throughout the area. Veterinarian/physician programs were conducted to share
knowledge and discuss health issues of mutual concern. In 1981, farm rescue training programs were initiated as an annual educational event, instructing emergency medical technicians in farm accident rescue operations. This program was sponsored in cooperation with Mid-State Technical College and the University of Wisconsin Agricultural Research Station in Marshfield. In 1982, this program received the Exemplary Educational Service Award from the Wisconsin Association for Vocational and Adult Education. An average of 125 adults received their training annually through this program, which was coordinated by John McCarty, then the assistant director of Marshfield Clinic’s Department of Medical Education, and Jerry Minor of Pittsville Fire Department/Emergency Medical Services.

In 1983, a second formal arrangement between the NFMC and the Institute of Agricultural Medicine at the University of Iowa was established to explore areas in which the institutions could work jointly to support one another’s efforts in identifying the agents causing respiratory illnesses unique to the farm environment, and to further explore traumatic injuries in the nation’s rural population. In 1985, the NFMC launched a research project to explore the problem of noise-induced hearing loss in farmers. This investigation was expanded to identify the prevalence of hearing loss in high school students in the area who were actively involved in farming. The project was further expanded in 1987 and became the focus of an educational program sponsored by the National Farm Medicine Center advocating the use of hearing protection devices to prevent hearing loss in farmers and other farm personnel.

Additional environmental projects sponsored by the National Farm Medicine Center continued to target the farm population in central Wisconsin, and a broad spectrum of educational health care programs were then being provided to the rural population of the region. As a result, numerous research projects stemming from these services and programs led to additional federal
Dean Emanuel, M.D., visiting the Jim & Jenny Sternweis farm, near Marshfield.

Dean Stueland, M.D., M.P.H. (left), initiated farm injury rescue training programs in central Wisconsin.

Jim Marx, Ph.D., an immunologist who joined the Foundation in early 1973, was largely responsible for the testing and laboratory facilities handling specimens from patients with suspected farmer’s lung disease that were being sent to the National Farm Medicine Center from all over the world for analysis.

“The work of these researchers … on agricultural health and respiratory related diseases has been and remains preeminent.” – Foundation annual report, 1981

(Top left photo) From left: Dean Emanuel, M.D.; Ben Lawton, M.D.; Fritz Wenzel, M.B.A.
(Top right photo) From left: Jim Marx, Ph.D.; Duane Tewksbury, Ph.D.; Michael Kryda, M.D.; Ronald Roberts, Ph.D.; Mary Treuhaft, Ph.D.; George Magnin, M.D.
One of the NFMC’s most often-cited studies is the 1991 Farmers’ Caps & Hats: Skin Cancer Prevention Project. The study assessed farmer acceptance of various hat designs, as well as their sun protection capability.

A Guide to Safe Agricultural Fuel Storage Systems was part of the NFMC’s first environmental health project, and included an educational videotape depicting safe removal of underground tanks.

Former U.S. Surgeon General C. Everett Koop (second from left) at the 1990 National Rural Health Association Conference in New Orleans. With him are (from left): Dean Stueland, M.D., M.P.H.; Barbara Lee; and Marshfield Clinic’s Greg Nycz, an expert on public policies related to health care access.

Dean Emanuel, M.D., addressed farm safety and health issues in his syndicated “Country Doctor” column.
grants and contracts, and presentations at national and international meetings on rural health. All of these efforts led to further expansion of the resources and personnel to support the National Farm Medicine Center’s mission.

Collaboration with Marshfield Clinic physicians and Saint Joseph’s Hospital led to a number of farm injury surveillance projects designed and initiated by Dean Stueland, M.D., M.P.H., a Marshfield Clinic emergency room physician and ardent supporter of the National Farm Medicine Center. These studies were conducted to collect and analyze data regarding factors leading to farm injuries, to analyze data on follow-up care required for these injuries, and to evaluate the effect of injury on farmers’ ability to continue occupational activities. Peter Layde, M.D., M.Sc., an epidemiologist who joined the Foundation staff in 1987, teamed with Dr. Stueland to secure a federal grant for comprehensive farm injury surveillance. Research results were presented and published in multiple outlets, yielding significant national attention for the National Farm Medicine Center. It was well recognized that farming had the dubious distinction of being one of the most dangerous occupations.

With the expansion of its resources and personnel, the National Farm Medicine Center was better able to explore a multitude of hazardous aspects of the farm environment and more accurately assess the risk to the farmer and his or her family. In 1987, a farm chemical exposure surveillance tool was developed with funding from the National Institute for Occupational Safety and Health (NIOSH). In 1988 a proposal was submitted to, and approved by, Amoco Corporation for a three-year, three-phase project to study the storage of fuels on farms and ranches, focusing on leaking underground storage tanks and the health hazards they posed to humans and livestock.

At the inception of the NFMC in 1981, with formal announcement of the Center in 1982, Ed Horvath, M.D., was named medical director, and Bob Intress, Ph.D., became the administrative director. Dr. Intress was also the assistant director of Marshfield Clinic’s Medical Education Department. These two individuals oversaw the activities and agenda of the National Farm Medicine Center until 1986 when Dr. Horvath left the Clinic for a position in the petrochemical industry with Amoco.
Sporting "sun safe" hats at Wisconsin Farm Progress Days. NFMC and Marshfield Clinic staff include, front row: (from left) Nancy Young, R.N.; Barbara Lee; Joseph Mazza, M.D.; and (far right) Sally Jo Lee; second row: (far left) Dean Emanuel, M.D. and (far right) Barbara Marlenga; third row: (far left) Douglas J. Reding, M.D.

Free prostate cancer screenings at Wisconsin Farm Progress Days was part of NFMC and Marshfield Clinic outreach in the 1990s. Front row: (from left) Barbara Lee; Julaine Haralson; Mary Jo Knobloch. Back row: (from left) Joe Ousley, M.D.; Douglas J. Reding, M.D.; Karen Lappe, R.N.; and Nelson Moffat, M.D.

Bob Intress, Ph.D., (left) was the first administrative director of the NFMC and, along with Medical Director Dean Stueland, M.D., M.P.H., (right) oversaw the center’s activities and agenda into the 1990s. Dr. Intress also was the assistant director of Marshfield Clinic’s Medical Education Department.

Dean Stueland, M.D., M.P.H., enjoyed a high degree of credibility in the farm community because he shared his expertise in a practical, down-to-earth manner. Dr. Stueland was medical director of the NFMC from 1987 until his death in 2000. (Gempler’s 1992 Summer News Flyer.)
Shortly after Dr. Horvath’s departure, Dr. Intress recognized the need for an assistant director. As a result, in July of 1987, the Foundation hired Barbara Lee, R.N., M.S.N., a faculty member of the Saint Joseph’s Hospital School of Nursing. When Lee joined the National Farm Medicine Center, she became assistant director and responsible for the planning and implementation of projects sponsored by the Farm Center. With a grant from the Wisconsin Department of Health she began studying the incidence of skin cancer in farmers and helped design and promulgate hats specially made to maximize farmers’ protection from daily sun exposure. The Farmers’ Caps and Hats Project became a large media story for Marshfield Clinic and the National Farm Medicine Center, including a segment on a major network morning show in New York City.

From 1986 until 1992, the National Farm Medicine Center operated without a director. The agenda and activities of the Farm Center were approved by a consensus committee consisting of Dr. Intress, Lee, Jean DeVita, McCarty and Richard Sautter, M.D., who at that time was director of the Foundation. During that five-year period, numerous projects were begun under the sponsorship of the National Farm Medicine Center, and grants and contracts continued to provide resources to bring many of these projects to fruition. After joining the Foundation in 1987 as the National Farm Medicine Center’s first full-time staff member, Lee quickly recognized her limitations with respect to her formal education. She decided to pursue her doctorate degree at the University of Wisconsin in Milwaukee.

A New Home

Because of the rapid expansion in educational programs and research projects emanating from Marshfield Clinic and the Foundation, a desperate need for expansion resulted in the construction of the Ben R. Lawton Center designed specifically for education and research activities. The Lawton Center was dedicated in 1990 and became home to the Foundation, which included the National Farm Medicine Center. The building soon became fully occupied. An obvious need for further expansion of facilities later led to the construction of the Melvin R. Laird Center, dedicated in 1997.
By 1990, the Clinic had expanded its medical staff to 328 physicians. Numerous research projects and education programs were initiated by the Foundation and National Farm Medicine Center. In 1990, W. D. Connor, a local businessman, gave a generous gift of $1.5 million to the Foundation in the name of Dr. Emanuel. This money was earmarked as an endowment to the National Farm Medicine Center and was instrumental in the Farm Center’s development. In 1991, the National Farm Medicine Center received its largest federal grant from the National Institute for Occupational Safety and Health (NIOSH) for the Wisconsin Farmers Cancer Control Program. Principal Investigator Douglas J. Reding, M.D., M.P.H., an oncologist at Marshfield Clinic, led the study. In 1992, Lee’s focus shifted to childhood injuries in rural and agricultural environments. With W.K. Kellogg Foundation funding, she convened a major symposium on this topic in Marshfield that attracted interest nationwide. This led to large grants from NIOSH and the Federal Maternal and Child Health Bureau. A continuing flow of major studies from the National Farm Medicine Center and Foundation emphasized rural health, farm injuries and environmental hazards. The results of these studies were published in reputable, peer-reviewed journals and other periodicals. Better understanding of death and injury in the occupation of farming led to formal education programs for farmers and their families emphasizing hazards as well as injury prevention programs.

Mary Jo Knobloch, project manager (standing) and Nancy Bellendorf, occupational therapist, attach the Lumbar Motion Monitor to a Wisconsin farmer. These on-site visits were a precursor to development of the reference manual “Ergonomics of Back Pain in Farmers,” which recommended how tasks could be done to minimize risk of back pain and injury.

NFMC staff meeting: Karen Lappe, R.N.; Nancy Young, R.N.; Julie Alswager; Karen Kofka.

A high school student enters the NFMC Health Outreach Unit. A hearing conservation program in the 1980s focused on youth working in agriculture.

Central Wisconsin farmers who served on the planning committee for a 1988 NFMC conference on farmers with disabilities included (from left): Bud and Dawn Mortvedt; Allen and Marilyn Krause.
Mark Purschwitz, Ph.D., an agricultural engineer, had a joint appointment between the University of Wisconsin-Madison and the NFMC. He is pictured here with Dr. Emanuel at an outreach event. (Wausau Daily Herald, October 15, 1989.)

In 1992, the NFMC took the lead in efforts to keep children safer on farms when it convened the National Childhood Agricultural Injury Prevention Symposium. J. Donald Millar, M.D., director of the National Institute for Occupational Safety and Health, addressed the conference. (Marshfield News-Herald, April 2, 1992.)

Children and Agriculture: Opportunities for Safety and Health was the product of a national consensus-development initiative led by the NFMC. The report provided a national action plan that in 1997 led to establishment of the National Children’s Center for Rural and Agricultural Health and Safety.


(From left) Tom and Laura Drendel with Paul Gunderson, Ph.D. Tom Drendel is supervisor of the University of Wisconsin Agricultural Research Station in Marshfield.
In 1991, the Foundation hired Paul Gunderson, Ph.D., who was an epidemiologist, statistician and behavioral scientist at the Minnesota Department of Public Health. Dr. Gunderson’s background was rich in agricultural exposure. He had a deep appreciation for farming and the hazards associated with farming practices and the agriculture industry in general. Dr. Gunderson was born and raised in North Dakota and farmed there with his family prior to his higher education. Dr. Gunderson’s gentle demeanor, profound intelligence and passion about his subject matter captivated listeners during numerous presentations on various aspects of farming and agricultural issues. He had a specific interest in the incidence and the factors associated with suicide in rural environments, particularly with farming. In 1992, Dr. Gunderson was named the director of the National Farm Medicine Center and proposed an ambitious agenda that guided the National Farm Medicine Center through the next decade.

Unfortunately, Dr. Gunderson’s time and dedication to the National Farm Medicine Center became diverted when he was asked to become interim director of the Foundation after Dr. Sautter resigned in December of 1993. Lee, the assistant director of the Farm Center, was given additional responsibilities.

In 1995, Lee was awarded her doctoral degree in behavioral sciences, which elevated her to research scientist at the Foundation. Dr. Lee became recognized as a national and international expert in agricultural childhood injuries. During 1995-1996, she chaired the National Committee for Childhood Agricultural Injury Prevention. Over an 18-month period, the 42-member committee developed and refined 13 objectives that would become the official action plan for preventing childhood agricultural injuries in the United States. The plan was endorsed by 80 major medical and agricultural organizations, then presented to Congress. After approval and appropriations from Congress, the plan was given to NIOSH to serve as the lead agency in its implementation. The plan continues as the framework for childhood agricultural injury prevention in the United States and has been modified and
The Ben R. Lawton Center at Marshfield Clinic was home to the NFMC from 1990 to 1997.


Children’s Center staff, 2001. Front row (from left): Chris Hanna, M.P.H.; Marlene Stueland; Barbara Marlenga, Ph.D.; Jamie Zentner, M.S.; Barbara Lee, Ph.D.; Mary Oertel; Sally Cutler, M.S. Back row (from left): Virginia Fischer, M.S.; Tracy Jakobi; Nancy Esser; Scott Heiberger; Beth Busscher; Holly DeBlois, M.S.
adopted by several other countries. In 1997 Dr. Lee was awarded a large NIOSH grant to develop and direct the National Children’s Center for Rural and Agricultural Health and Safety. The grant provided for numerous education programs, conferences and research activities. Additional federal grants allowed the National Children’s Center to expand and add personnel while remaining financially independent of the Foundation. Dr. Lee’s programs and publications on childhood injury prevention culminated in the National Children’s Center becoming the largest and most widely known component of the National Farm Medicine Center over the next decade.

In 1997, Mark Borchardt, Ph.D., became the research scientist of the Environmental Health Laboratory, which later became the National Farm Medicine Center’s Public Health Microbiology Laboratory. Dr. Borchardt’s primary area of interest was aquatic ecology and waterborne pathogens that contribute to water contamination and disease. His research led to a number of important studies focusing on the burden of acute illnesses attributable to contaminated drinking water and newer, more sensitive methods of detecting waterborne pathogens in drinking water. He received a major grant from the U.S. Environmental Protection Agency to continue work on this important issue in the rural environment.

In 1997, the National Farm Medicine Center moved to the newly completed Melvin R. Laird Center, along with the Center for Medical Genetics, the Epidemiology Research Center and the George E. Magnin Medical Library. The move to the Laird Center placed the Farm Center adjacent to Epidemiology and Biostatistics. These functions play vital roles in many research and education endeavors sponsored by the National Farm Medicine Center. The National Farm Medicine Center then consisted of a number of major components and centers, including the NIOSH Midwest Center for Agricultural Disease and Injury Research, Education and Prevention; the NIOSH-funded National Children’s Center for Rural and Agricultural Health and Safety; the National Cancer Institute-funded Prostate, Lung, Colon, Ovarian (PLCO) Cancer Screening Trial; and the Children’s Safety Network.
The North American Guidelines for Children’s Agricultural Tasks (NAGCAT) were formally introduced at the 1999 National Institute for Farm Safety meeting in Ocean City, Maryland. (From left): Barbara Marlenga, Ph.D.; Orion Samuelson, WGN Radio, Chicago; Barbara Lee, Ph.D.; and Nancy Esser.

U.S. Sen. Herb Kohl (center) championed federal funding for the 2001 national Summit on Childhood Agricultural Injury Prevention. NFMC staff (from left): Anne Greenlee, Ph.D.; Holly DeBlois, M.S.; Kathy Farnsworth; Barbara Lee, Ph.D.; Kohl; Beth Busscher; Barbara Marlenga, Ph.D.; Nancy Esser; Chris Hanna, MPH.

The Creating Safe Play Areas on Farms report, published in 2003, merged concepts of playground safety, farm safety and environmental health with supervision.

The North American Guidelines for Children’s Agricultural Tasks (NAGCAT) are a resource developed to assist parents in assigning farm jobs to their children.
In June of 1996, Marshfield Clinic hired Steven Olenchok, Ph.D., from the NIOSH Center in Morgantown, West Virginia, to be the National Farm Medicine Center’s director. Dr. Olenchok came to the Farm Center with extensive background in research involving respiratory illnesses in farmers and the agricultural industry and had published extensively on causative agents and endotoxins related to this illness. This was a complementary and collaborative position, given the National Farm Medicine Center’s extensive reputation and accomplishments in this same area. During Dr. Olenchok’s brief directorship of the National Farm Medicine Center, there was a proposal to simplify the name of the National Farm Medicine Center to the “Rural Center” for reasons that were not clearly elucidated to the members of the Board of Trustees of the Foundation. Candid and sometimes emotional discussions occurred over this proposal. The Foundation’s Board of Trustees failed to approve it and the Center remained the National Farm Medicine Center. In January of 1998, Dr. Olenchok left Marshfield and returned to West Virginia to be lead scientist for agriculture at NIOSH. Dr. Gunderson again performed double-duty, assuming directorship of the National Farm Medicine Center in addition to being director of the Foundation until his departure in April of 2000.

In 1999, the National Farm Medicine Center was involved in numerous presentations, poster sessions and exhibits throughout the country. The National Children’s Center established its Web site and hosted more than 6,000 external visits that year. But the highlight of 1999 was the release of the North American Guidelines for Children’s Agricultural Tasks (NAGCAT), culminating a six-year initiative. Dr. Lee and Barbara Marlenga, Ph.D., and other members of the National Farm Medicine Center’s staff spearheaded this endeavor. The guidelines were developed to assist parents and others in assigning appropriate and safe tasks to children 7 to 16 years of age who live and/or work on farms. Dr. Marlenga’s continued work on the NAGCAT project would lead to her receiving funding in 2000 from NIOSH to conduct an additional study related to NAGCAT that involved a case series analysis of childhood agricultural injuries. By 2005 the NAGCAT were translated into five languages and achieved international applications.
The year 2000 saw the National Farm Medicine Center grow to 17 staff who participated in no less than 28 presentations, including several in Stockholm, Sweden. The National Farm Medicine Center also began a major effort dealing with migrant farmworkers. This initiative of the National Children’s Center was directed by Martha Vela, M.D., Ph.D. Twenty-seven people representing government agencies, agricultural organizations, health care practitioners and migrant workers participated in this project to generate recommendations on how agricultural employers and federal agencies could provide a safer work environment for migrant and seasonal adolescent workers. The initiative was commended by the U.S. Department of Labor as relevant to its overall program addressing child labor issues. As a direct result of this initiative, Dr. Vela enhanced the Children’s Center’s capacity to address migrant farmworker issues by building relationships with migrant worker advocates and agricultural groups employing large numbers of migrant workers.

*Martha Vela, M.D., Ph.D., directed a major effort dealing with migrant farmworkers. The initiative produced* Migrant and Seasonal Hired Adolescent Farmworkers: A Plan to Improve Working Conditions, *which was commended by the U.S. Department of Labor.*
In 1997, Mark Borchardt, Ph.D. (right), became the research scientist of the Environmental Health Laboratory, which later became the NFMC’s Public Health Microbiology Laboratory. Dr. Borchardt’s research has led to a number of important studies focusing on the burden of acute illnesses attributable to contaminated drinking water and newer, more sensitive methods of detecting waterborne pathogens in drinking water. With Dr. Borchardt are research associates Susan Spencer and Phil Bertz.

Steven Olenchok, Ph.D. (left), was director of the NFMC from 1996 until 1998, when he returned to the National Institute for Occupational Safety and Health to become its lead scientist for agriculture. With Dr. Olenchok are Congressman Dave Obey (center) and Paul Gunderson, Ph.D.

Zoonotic diseases — illnesses spread from animals to humans — are a focus of research in the NFMC’s Public Health Microbiology Laboratory.

NFMC researchers have contributed regularly to the peer-reviewed Journal of Agromedicine since its inception in 1994. In 2004, the NFMC assumed editorship.
1999 and 2000 were not all smooth sailing. Changes were in the wind. Key individuals would leave and others be acquired by the Foundation. Contentious issues would need to be addressed concerning the status of the National Farm Medicine Center. In January of 1999, a proposal was presented to the Foundation’s Board of Trustees as part of the National Farm Medicine Center’s strategic plan for a new agricultural health entity. This new program would be located in Marshfield Clinic. It would be linked to the Division of Research, clinical services, human laboratory and veterinary laboratory. Other potential links would include Marshfield Clinic’s ProActive Health Department, government and the agricultural industry. The initiative would evolve into a for-profit entity with an emphasis on food safety and testing. It was supported by Bob Carlson, M.D., a pathologist at Marshfield Clinic; Dr. Gunderson, then director of the Foundation and National Farm Medicine Center; and Bill Mineau, director of Business Development for Marshfield Clinic. This proposed AgHealth Initiative was approved by the Foundation’s Board of Trustees. The proposal was then sent to Marshfield Clinic’s Board of Directors. In May of 1999, Dr. Emanuel asked to meet with a small group of physicians representing Marshfield Clinic’s executive committee, and presented compelling reasons why the proposal would not be in the best interest of the National Farm Medicine Center, the Foundation and the Clinic. In November of 1999, Marshfield Clinic hired Jay Ellingson, Ph.D., a food safety expert working for the U.S. Department of Agriculture (USDA) in Ames, Iowa, in support of the new directions for the National Farm Medicine Center. In January of 2000, Michael Caldwell, M.D., Ph.D., a vascular surgeon with a background in research at the University of Minnesota, was hired by
Marshfield Clinic to become the Foundation’s director. Dr. Gunderson retired from the Foundation and National Farm Medicine Center in April of 2000 and returned to his home in North Dakota. A decision had not yet been made concerning the proposed AgHealth Initiative that would move the National Farm Medicine Center out of the Foundation to operate under the aegis of Marshfield Clinic.

In June of 2000, Marshfield Clinic’s Board of Directors approved the AgHealth Initiative and Food Safety Center. It would report through Marshfield Clinic’s Division of Laboratory Medicine. Dr. Carlson and Dr. Caldwell would jointly oversee and facilitate the National Farm Medicine Center’s participation in research. Dr. Ellingson would head the Food Safety Services aspect of the Center. It would be given separate entity status and would function as a department within Marshfield Laboratories. The National Farm Medicine Center would retain its name and rural health mission and remain a department under the umbrella of the Foundation. Dr. Caldwell became immersed in other issues of the Foundation, and the National Farm Medicine Center was again without a director. With the agriculture center issue being settled in July 2000, and Dr. Caldwell ensconced in his position as director of the Foundation, he appointed Dr. Lee director of the National Farm Medicine Center. She continues in that role to the present time.
Melvin R. Laird Center dedicated in 1997.
In January of 2000, Dr. Stueland, medical director of the National Farm Medicine Center since 1987, passed away from cancer. His support and commitment to the National Farm Medicine Center would be sorely missed. Everyone involved with the Foundation recognized his contributions and stewardship of the National Farm Medicine Center for 15 years. Marshfield Clinic and the Foundation would initiate in Dr. Stueland’s name an annual symposium and scholar award focusing on rural health and agriculture.

In 2000-2001 the National Farm Medicine Center continued its mission with 20 staff members. Anne Greenlee, Ph.D., a reproductive physiologist, transferred into the National Farm Medicine Center and established a laboratory dedicated to investigating the effects of commonly used pesticides on reproductive physiology. Dr. Greenlee’s research focused on the increased incidence of birth defects, infertility and reproductive problems occurring in farm families and their possible association with pesticides. She published her work in the *Journal of Epidemiology* and would later present her findings at national and international scientific conferences. Another highlight of 2001 was the national Summit on Childhood Agricultural Injury Prevention, an invitational working conference that included farmers, growers, professors, physicians, safety professionals and representatives of agricultural organizations. The Summit was funded by a federal appropriation championed by U.S. Senator Herb Kohl of Wisconsin. The Summit assessed progress in achieving national objectives and resulted in plans for a coordinated, comprehensive effort to prevent agriculture-related injuries among children and adolescents who live on, visit and/or work on farms and ranches.
**Dean A. Emanuel, M.D.**

In October 2003, Dr. Emanuel received international recognition for “Lifetime Achievements in Agricultural Medicine” through a formal presentation at the fifth International Symposium, Future of Rural Peoples: Rural Economy, Healthy People, Environment, Rural Communities in Saskatoon, Saskatchewan, Canada. James Dosman, M.D., (left) made the presentation.

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**NFMC recipients of the Gwen D. Sebold Research Fellowship Award**

This award recognizes an outstanding Marshfield Clinic researcher and supports continued research in the recipient’s chosen field. D. David “Dewey” Sebold established the annual award in 1987 in honor of his sister, Gwen, a longtime Marshfield Clinic stenographer who died of cancer in 1974.

1989: Dean Emanuel, M.D.
1998: Douglas Reding, M.D.
1999: Paul Gunderson, Ph.D.
2000: Dean Stueland, M.D., M.P.H.
2003: Barbara Lee, Ph.D.

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**Stueland Scholar award recipients**

The Stueland Scholar award honors the late Dean Stueland, M.D., M.P.H., who served Marshfield Clinic and its patients as an administrator, clinician, educator and researcher, and was also medical director of the National Farm Medicine Center.

2001: Lynn Goldman, M.D.
2002: John May, M.D.
2003: Steven Kirkborn, M.D., M.P.H.
2004: John Wheat, M.D., M.P.H.
2005: Community EMT/First Responders programs
2006: Paul Gunderson, Ph.D.
2001, the Prostate, Lung, Colon, Ovarian (PLCO) Cancer Screening Trial had enrolled more than 17,000 participants. The PLCO and other rural cancer research programs led by Dr. Reding had grown so large that they were transitioned into the new Rural Cancer Research Center, established within the Foundation.

Other activities during this time included initiation of the Creating Safe Play Areas on Farms project and the first Stueland Symposium. W. Scott Carpenter, M.D., an Emergency Department physician and part-time farmer, assumed a number of outreach and training initiatives related to trauma care, adverse agricultural exposures and personal protective equipment for farm workers.

The National Farm Medicine Center expanded its staff in 2002 and 2003 with the acquisition of additional support staff and research scientists. It also received grants and contracts to support new projects and programs and to continue those already in progress. Dr. Borchardt, working in the National Farm Medicine Center’s Public Health Microbiology Lab, received a $1.8 million Science to Achieve Results (STAR) grant from the Environmental Protection Agency to further study childhood illnesses in 14 rural communities that use well water as their drinking water source. In May of 2003, Steve Kirkhorn, M.D., M.P.H., FACOEM, joined National Farm Medicine Center as director of Marshfield Clinic’s Occupational Medicine department and medical director of the Farm Center. Dr. Kirkhorn, president-elect of the North American Agromedicine Consortium, came to the National Farm Medicine Center from the Mayo Health System. He brought experience in rural health, and would be responsible for various activities, including development of professional education initiatives for rural health providers.

Mark Purschwitz, Ph.D., joined the National Farm Medicine Center staff in September 2003 as a research scientist, after a decade as the agricultural safety and health specialist for the State of Wisconsin. He was also on the faculty of the University of Wisconsin-Madison as associate professor of Biological Systems Engineering and director of the UW Center for Agricultural Health and Safety. His work had focused on public policies that affect the health
and safety of agricultural workers in the state. In September 2003 the National Children’s Center for Rural and Agricultural Health and Safety was notified of its success in obtaining federal funding to continue its childhood rural and agricultural injury prevention program. The award would encompass eight projects, in addition to several external pilot projects. This was a five-year, $3.3 million renewal of a NIOSH grant initially awarded in 1997.

In October of 2003, the National Farm Medicine Center was invited to participate in the fifth International Symposium: Future of Rural Peoples in Saskatoon, Saskatchewan, Canada. The National Farm Medicine Center responded by sending nine members of its staff and presenting 19 reports. But the highlight of that meeting was the lifetime achievement award given to Dr. Emanuel as the “Father of Agromedicine.” Dr. Emanuel’s longtime friend and colleague James Dosman, M.D., director of the Institute of Agricultural, Rural and Environmental Health at the University of Saskatchewan, presented the award. The award recognized Dr. Emanuel’s many contributions during his 45-year commitment to rural health and agromedicine.

2003 was also a banner year for publications, published abstracts, poster sessions and invited presentations by staff of the National Farm Medicine Center. In November Dr. Marlenga was awarded a three-year $622,000 grant from NIOSH to determine if changes in child labor policy could reduce injuries to children working on farms. This study was done in collaboration with researchers in Ontario, Canada, who had similar interests.

In 2004, the National Farm Medical Center continued to benefit from its relationship with NIOSH as one of nine regional agricultural research centers throughout the United States. The National Children’s Center continued to disseminate information and enhance media reporting of the projects and programs involving childhood agricultural safety and health. A special NIOSH-funded workshop for journalists made its debut in Marshfield. The purpose of the “Kids On Farms: Telling the Story” workshop was to provide journalists from around North America the opportunity to experience first
Steve Kirkhorn, M.D., M.P.H., became medical director of the NFMC in 2003. Dr. Kirkhorn also serves as medical director of Marshfield Clinic’s Occupational Health Department.

Jackie Mundt, national FFA president and a native of Pittsville, Wisconsin, visited the NFMC in 2005. Front row (from left): Marlene Stueland; Barbara Lee, Ph.D.; Tammy Ellis. Second row: Cathy Mueller; Yvonne Cerne; Mark Purschwitz, Ph.D. Back row: Scott Heiberger, Mike Humann, M.S.; Chris Hanna, M.P.H.

The NFMC was well-represented at the fifth International Symposium: Future of Rural Peoples, held in 2003 in Saskatoon, Saskatchewan, Canada. The contingent included (left photo, from left): Barbara Marenga, Ph.D.; Dean Emanuel, M.D.; Steve Kirkborn, M.D., M.P.H.; Anne Greenlee, Ph.D.; Barbara Lee, Ph.D.; and Mike Peters, M.S. In the photo at right, Joseph J. Mazza, M.D., had a chance to visit with Aaron Blair, Ph.D., branch chief in the National Cancer Institute’s Division of Cancer Epidemiology and Genetics, and a major researcher of cancer in farmers. They are pictured with Dr. Emanuel.
hand the complex issues that families face as they attempt to safely run their
farm businesses. This workshop became an annual event, convened in other
locations across the United States. The Creating Safe Play Areas on Farms
project continued to evolve in 2004. Ten thousand additional copies of the
Creating Safe Play Areas on Farms guidance booklets were published,
providing a resource to farm parents and safety and health professionals.

In 2004, the National Farm Medicine Center became the home to the Journal
of Agromedicine: Practice, Policy & Research. The Center made a three-year
commitment to edit the journal. Dr. Kirkhorn would be its editor and Scott
Heiberger, a communications specialist, would become the journal’s managing
editor. Dr. Kirkhorn also received funding to begin a childhood asthma and
farm residence study in the Marshfield Epidemiological Study Area (MESA), a
geographic region defined by ZIP codes where the great majority of residents
receive all or most of their medical care at Marshfield Clinic, its regional centers
and affiliated hospitals. Dr. Kirkhorn was appointed by the USDA to serve on its
Agricultural Air Quality Task Force. He also was named one of three people to
participate in the Environmental Health Scholar program, funded by the Canada-
U.S. International Joint Commission (IJC) and managed by the Association of
Occupational and Environmental Clinics. In October of 2004, Dr. Lee published
research results in the American Journal of Public Health that described a
comprehensive evaluation of a National FFA health and safety initiative. The
study revealed that, despite being funded with more than $1 million donated by
agribusinesses, the educational initiative failed to achieve its desired outcome.

In 2005, the National Farm Medicine Center further expanded its scope and
community service projects. Christian Hanna, M.P.H., project director of the
Children’s Safety Network, delivered two presentations at the 2005 National
Injury and Violence Prevention Conference in Denver, Colorado, and co-directed
the second annual Journalists Workshop on childhood agricultural safety
and health. Funding was also expanded per the National Suicide Prevention
Resource Center to address suicide prevention services in rural states. During
the summer of 2005, the National Farm Medicine Center provided physicians,
Steve Foley, Ph.D., joined the Public Health Microbiology Laboratory in 2005. Dr. Foley’s expertise and research interests align closely with the NFMC’s strategic plan to build capacity in agriculture-related infectious diseases. Dr. Foley’s research interests focus on antimicrobial resistance and the disease-causing mechanisms utilized by pathogens that arise through the food chain.

Tom Nikolai, M.D., retired Clinic physician, stopped by the skin cancer screening van staffed by Roxann Schuld and Marlene Stueland at Wisconsin Farm Technology Days, July 2005.

Lisa Decker (right) at the Creating Safe Play Areas on Farms interactive demonstration at Wisconsin Farm Technology Days, July 2005.

On a visit to policymakers in 2004 at the Hart Senate Building in Washington, D.C., are (from left): Mike Peters, M.S.; Mark Purschwitz, Ph.D.; and Kathy Farnsworth, Marshfield Clinic government relations director.
safety experts, education programs and demonstrations at the annual Wisconsin Farm Technology Days as it had frequently done in previous years. Farm Technology Days is Wisconsin’s premier agricultural venue where every aspect of farming can be displayed and demonstrated, including issues on health and hazards as they pertain to farming and farm families. The Creating Safe Play Areas on Farms project made its first public appearance at the event, with a fully structured display that featured play stations made with low-cost materials that emphasized their safety features. The play area also included a research component that drew interest from nearly 200 attendees who participated in the written survey regarding their attitude toward building a safe play area, or improving an existing play area, on their farm.

The first two National Farm Medicine Center-edited editions of the *Journal of Agromedicine* were published. The journal contains scholarly, peer-reviewed articles about human health issues associated with the changing face of agriculture and is indexed by the National Library of Medicine.

In August, Steven Foley, Ph.D., joined the National Farm Medicine Center as an infectious disease scientist. Dr. Foley came from the University of Central Arkansas, where he was an assistant professor of biology, with a special interest in antimicrobial resistance and foodborne pathogens. His research addresses the development of methods to track pathogens through food production environments and understanding the genetic factors that allow these microorganisms to cause disease and develop antibiotic resistance.

In October of 2005, Dr. Borchardt was presented with the 2005 Wisconsin Water Association Research Award to recognize his research contributions made to water science and water supply. Dr. Borchardt’s research focuses on waterborne pathogens. The award was presented in conjunction with the Wisconsin State Lab of Hygiene.

By early 2006, the National Farm Medicine Center had 22 staff members, including a physician medical director and six Ph.D. scientists.
Over the 25 years of its existence, the National Farm Medicine Center has been supported by both Marshfield Clinic and external funding. Grants and contracts were essential during early years of growth. As a result of the National Farm Medicine Center’s accomplishments and growing reputation nationally and internationally as a research center, these sources of funding have continued. In addition, the Farm Center has received continued support from the community and from grateful patients of Marshfield Clinic. In 1984, a program was conceived to auction prime meats obtained from the prize livestock that were part of the annual Central Wisconsin State Fair held in Marshfield. The event was called “The Auction of Champions” and became one of the largest annual social events in the Marshfield area. Since its inception, the event has generated $1.3 million to help support the mission of the National Farm Medicine Center.

Since 1990, the National Farm Medicine Center has been in receipt of $3.5 million from endowments and gifts from friends and individuals who have recognized the unique attributes and mission of the Farm Center. It is hoped that these sources of funding will continue to provide the financial support the Farm Center needs to grow, and to further its quest to improve rural health through research. It should be noted that 69 percent of the National Farm Medicine Center’s revenues received in 2005 came from external grants and contracts.

The success of the National Farm Medicine Center can best be measured by its undaunted commitment to the many facets of life and well-being in
Marshfield banker William D. Connor set up a charitable trust to benefit the NFMC.

Jerry Meissner, a Marshfield area farmer, was the official auctioneer for the Auction of Champions for many years.

Les Leonard, retired farm radio broadcaster, and his wife, Virginia, at the Auction of Champions. Leonard helped establish the event and is a longtime member of the Auction planning committee.

The 1989 Auction. From left: Bill Allen, WDLB, one of the founders of the Auction; NFMC secretary Julie Alswager; Marshfield Clinic Development Director Ralph Mueller; Marshfield Clinic Research Foundation accountant Pat Christie; and longtime Auction master of ceremonies Howie Sturtz. The Auction has raised more than $1.3 million to help support the NFMC.
rural America. From the beginning, its focus has been on agriculture-related
disease and prevention. The numerous research projects and education
programs stemming from this commitment are a testament to the National
Farm Medicine Center’s mission over the past 25 years. The Farm Center is
a beacon, serving as an example and prototype for health care and scientific
research emanating from our country’s rich agricultural environment.

If one individual personifies the National Farm Medicine Center it can be
none other than Dr. Dean Emanuel. He has been its shepherd since the very
beginning. His vigilance and stewardship have guided the National Farm
Medicine Center through many phases. When he retired from his practice
at Marshfield Clinic in 1984, his commitment to the National Farm Medicine
Center never waned. He continues to serve as advisor and confidant to the
staff as emeritus director of the National Farm Medicine Center. Additionally,
he has been an invaluable resource in writing this brief history.

Dean Emanuel, M.D.
MILESTONES
NFMC Historical Highlights

1959
First federal grant awarded to Marshfield Clinic from National Institutes of Health (NIH) to study farmer's lung disease

1960s
Work continues on farmer's lung disease; research expands into new areas including organic dust toxic syndrome and maple bark disease

1972
Awarded National Institutes of Health (NIH) grant for Marshfield’s Specialized Center of Research (SCOR) to study pulmonary response to organic dust exposures; this multi-year grant would be renewed three times, until 1992

1979-80
Task force formed to review agriculture-related medical problems as seen by Marshfield Clinic physicians, leading to a feasibility study committee and formal recommendations to establish a farm medicine center

1981
National Farm Medicine Center is formed as a program of Marshfield Clinic Research Foundation

1981
Farm accident rescue training programs are initiated

1982
National Farm Medicine Center gets start-up funds from Marshfield Clinic and is formally introduced to community and media

1982
First Auction of Champions fundraising event generates $11,000 for NFMC

1983
NFMC begins health screenings at annual Wisconsin Farm Progress Days

1983
Ag Day, a television education program featuring 22 health topics, is developed and distributed to 70 national TV networks

1984
AgriHealth, a five-part video education curriculum, is developed and disseminated nationally to high school agriculture teachers
1985
*Today’s Farm Health* radio series, with promotion statements by actor Eddie Albert, is broadcasted by more than 200 radio networks nationwide.

1987
Emergency room-based farm injury surveillance and noise exposure in agriculture pilot study initiated.

1987
NFMC receives National Institute for Occupational Safety and Health (NIOSH) contracts to develop data collection tools for farm injuries and farm chemical exposure.

1988
*The Country Doctor* medical advice column is featured in monthly farm magazines.

1988
First NFMC environmental health project is funded by Amoco Corporation to address leaking underground fuel storage on farms.

1989
NFMC receives funding from NIOSH for comprehensive, population-based farm injury surveillance.

1989
NFMC hosts Midwest Conference for Farmers with Disabilities in Stevens Point, Wisconsin.

1990
NFMC is awarded NIOSH grant for Wisconsin Farmers Cancer Control Program.

1990
NFMC releases *A Guide to Tractor Roll Bars and Other Rollover Protective Structures*.

1991
NFMC is designated a NIOSH Center for Agricultural Disease and Injury Research, Education, and Prevention, involving many projects and external collaborations.

1991
Farmers Caps and Hats research leads to national media coverage for Marshfield Clinic.
1992
NFMC is named one of 10 Prostate, Lung, Colorectal and Ovarian Cancer Screening Centers funded by National Cancer Institute (NCI)

1992
National Childhood Agricultural Injury Prevention Symposium convenes in Marshfield, Wisconsin

1992
NFMC is funded by Federal Maternal and Child Health Bureau as a Children’s Safety Network-Rural Center.

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

1994
NFMC receives funding from NIOSH for Upper Midwest Health Study

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

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

1997
NFMC is designated by NIOSH as National Children’s Center for Rural and Agricultural Health and Safety, involving multiple projects and external collaborations

1997
Reproductive Toxicology Lab established, with emphasis on determining adverse effects of agricultural chemical exposures on human reproduction

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

1999
North American Guidelines for Children’s Agricultural Tasks (NAGCAT) are disseminated nationally, including on a dedicated Web site
1999
NFMC receives funding from NCI to research the molecular epidemiology of prostate carcinogenesis.

2000
NFMC leads the National Adolescent Farmworker Occupational Health and Safety Advisory Committee and publishes recommendations in 2001

2000
NFMC is awarded a NIOSH grant to assess potential injury prevention impact of NAGCAT using a case series design

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

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

2003
NFMC publishes *Creating Safe Play Areas on Farms*, the first comprehensive guidelines for designing and building a play area in a farm setting

2003
U.S. Environmental Protection Agency (EPA) awards NFMC a STAR grant to estimate the burden of acute childhood illnesses attributable to drinking water

2004
NFMC releases *Benchmarking Report: Hiring and Safety Practices for Adolescent Workers in Agriculture*

2004
First national Journalists Workshop convenes to expand and enhance media reporting of agricultural health and safety issues

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

2006
NFMC hosts annual National Institute for Farm Safety conference in Sheboygan, Wisconsin
FARM HANDS
By Peter G. Beeson

Those creased and wrinkled hands
Thick fingers
Broad flat nails
Life lines like mine

I’ve seen them
Work a knot
Lift a bail
Plant a seed

They’ve weathered
Drought, Blizzard
Tornado, hail
Banks that fail

I can see them
Hooked in coveralls with pride
Stuffed in pockets with nonchalance
Clinched in anger

They’ve felt
The warmth of newborn calves
The silk of corn
The brittleness of ripened wheat

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