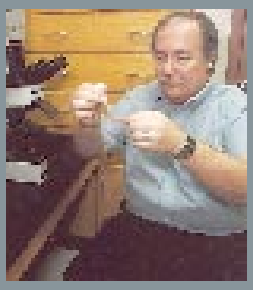
Contents






25 Years: Building a Research Center of Excellence

Research is the most promising problem solver for our future and has become an economic engine in our communities as well. Across the country, biomedical research is changing our lives rather dramatically. Advances have already given us organ transplants, cures for smallpox and polio, and longer, healthier lives. New studies seek both prevention strategies and cures for the nation's killer diseases.

The knowledge is expanding exponentially but is constructed upon small building blocks. Breakthrough clinical applications of today are founded upon yesterday's time-intensive study of molecules, cells, and tissues.

A foundation for the nation's biomedical knowledge is its 125 medical schools. Historically, medical schools have been leaders in discovering tomorrow's cures and disseminating new knowledge. Entering its 25th year, Wright State University School of Medicine has quickly become a contender in obtaining hard-to-get research dollars, and its research is garnering national and international recognition in several areas.

1973

The Thomas B. Fordham Foundation donates funds for WSUSOM's scientific library.

1976

Cox Heart Institute, part of the nationally recognized MRFIT study, merges with WSUSOM.

The Miami Valley Chapter of the American Heart Association begins supporting research at WSUSOM.

1977

Biochemist Dan Organisciak first receives funding from the National Eye Institute to study age-related vision loss.

The Fels Fund gives the Fels Institute, the largest and longest continuous study of human growth, to WSUSOM.

Space physiologist Mary Anne Frey begins a research career that leads to NASA.

Data from the Fels Study is first published in the nation's pediatric growth charts.

1978

Medical sociologist Harvey Siegal establishes the Weekend Intervention Program (WIP), providing early intervention for substance abusers.

Pathologist Al Batata introduces surface markers for the diagnosis of leukemias and lymphomas to Dayton.

The civilian aerospace medicine residency program, a collaboration between WSUSOM and Wright-Patterson Air Force Base (WPAFB), is initiated.

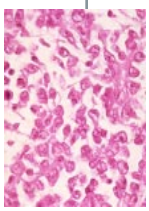
1979

British engineer Godfrey Hounsfield receives the 1979 Nobel Prize for developing the CT scan.

The works of Ross McFarland, renowned researcher and father of human factors in aviation, are donated to WSUSOM's Fordham Library.

The new BMS Ph.D. program accepts its first students.

1980



Pathologist Al Batata uses newly invented monoclonal antibodies for the diagnosis of lymphoma/ leukemia.

1981

The AIDS virus is officially recognized.

The American Heart Association begins a student research program.

The State of Missouri is the first to model the Weekend Intervention Program, later replicated across North America.

Community Provided a Solid Foundation

Wright State University School of Medicine (WSUSOM) was one of five medical schools formed through the 1972 VA Medical School Assistance and Health Manpower Training Act. The affiliation between the Dayton VA Medical Center and the school brought many benefits to both institutions, claimed the late Willard Hitchings, former director of the Dayton VA Medical Center. "The affiliation enhances our ability to recruit high-quality house staff and expands the number and scope of residency training programs," he explained in 1978.

"The relationship provides valuable clinical experiences to the medical student in the early years of training and benefits the veteran who receives high-quality, comprehensive health care."

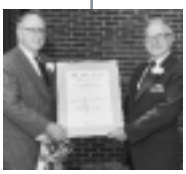
The Dayton VA, one of the largest VA hospitals in the country, was a principal supporter of the new professional school. Over the years, the Dayton VA has served as a major teaching and research site.

The late Willard Hitchings, former director of the Dayton VA Medical Center.

In its formative years, Wright State University School of Medicine found instant national recognition through the mergers of self-standing research entities, such as the Fels Institute (1977) and Cox Heart Institute (1976), with the school.

"The relationship provides valuable clinical experiences to the medical student in the early years of training and benefits the veteran who receives high-quality, comprehensive health care."

1982



Dayton VA Basic Sciences Addition is dedicated.

The Gallup Poll finds that one-third of American families have had a problem with alcohol and 79% believe alcoholism is a treatable disease.

Aerospace Medicine studies conclude that older pilots have fewer accidents.

1983

Studies conclude that the Weekend Intervention Program (WIP) is effective in reducing drunk driving recidivism.

Department of Surgery tests lead to national treatment for colon cancer.

Pathologist Al Batata uses the first flow cytometer in Ohio to manage lymphoma/leukemia and cancer DNA.

1984

Department of Surgery studies lead to national recognition of C. Difficile Septicemia.

Kettering Medical Center and WSUSOM join in MRI research.

1985

Physiologist Roger Glaser receives a patent for his wheelchair and drive system.

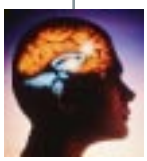
1986

Physiologist Roger Glaser receives a patent for apparatus that exercises a paralyzed limb.

Substance Abuse Intervention Programs becomes the umbrella for prevention projects, including WIP.

WPAFB Medical Center holds ribbon cutting for newly designed facility.

1987



James Olson, Department of Emergency Medicine, develops clinically relevant models to study cerebral edema.

Children's Medical Center holds Research Laboratory Open House.

1988

Biomedical Imaging Laboratory at Miami Valley Hospital opens.

Department of Surgery contributes to national treatment standards of diverticulitis.

The Miami Valley Chapter of the American Heart Association endows student and faculty research.

Physiologist Roger Glaser, neurologist Thomas Mathews, and others develop exercise techniques for patients with paralysis and multiple sclerosis.

Alexander Roche, M.D., Ph.D., professor emeritus and head of the Fels Longitudinal Study for more than 25 years.

Parents and pediatricians throughout the country are familiar, perhaps unknowingly, with data compiled through the Fels Longitudinal Study since 1929. The information is published in the form of the nation's pediatric growth charts for the birth to 36 months age period.

Originally, the Fels Study was designed to answer questions about variation in child growth and development, but the study continued as the first participants became adults. Recognizing new uses for the data, Alexander Roche, M.D., Ph.D., who headed the study for 25 years, guided the research toward health-related questions about body composition. "We can," says Dr. Roche, "examine relationships that no one else can examine."

For the past 20 years, the study's primary focus has been on changes in cardiovascular disease risk factors in relation to body composition. More than 1,100 individuals, plus an even greater number of their relatives, have been involved. The first Fels participants have been in this study continuously for 69 years, and the newest is only a few months old, the great-grandchild of one of the first.

Deemed a "national treasure" by the National Institutes of Health, the study is also used to answer current scientific questions related to cardiovascular risk factors, to assess the nutritional status of the elderly for the World Health Organization, and to predict health status patterns.

"We can examine relationships that no one else can examine."

1988

Biochemist Michael Leffak helps discover the replication origin of the human c-mys onc o gene.

Otolaryngologist Robert Goldenberg develops an ear implant system of prostheses to reconstruct the middle ear.

Fels Professor Alex Roche co-authors the first standardization manual in the field of anthropometry.

1989

Department of Emergency Medicine moves to the Cox Heart Institute to combine administrative and research activities.

Immunologist Neal Rote identifies a frequent cause for miscarriage, antiphospholipid antibody syndrome.

Marshall Kapp, J.D., M.P.H., in collaboration with the Robert Wood Johnson Foundation, finds that few nursing homes have comprehensive, organized programs for managing their legal risks.

1990

Department of Emergency Medicine studies how a person in shock tolerates G-forces for NASA.

Pharmacologist/ Toxicologist James Lucot receives a patent for an invention to alleviate motion sickness or chemically induced emesis.

Department of Surgery introduces minimally invasive surgery to community.

The Department of Anatomy develops a neuroscience research program that provides new information on nerve cell function and nerve injury.

Substance Abuse Resources and Disability Issues receives funding to examine the impact of substance abuse upon individuals with disabilities.

Dr. Sidney Miller transfers technology used in developing fighter pilot masks at Wright-Patterson Air Force Base to burn patients.

1991

Pediatrician Robert Cohn studies treatment approaches to pulmonary infection in cystic fibrosis patients.

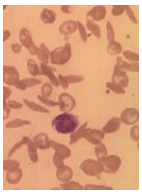
SAIP's research on injection drug users dispels public myths about AIDS prevention.

Drs. Cassandra Paul and hematologist/ oncologist Michael Baumann establish the eosinophilic AML 14 cell line.

1992

Gynecologist William Nahhas conducts a drug study on cancer increasing life expectancy from one to three years.

Fels data and techniques are used by the World Health Organization to assess nutritional standards for the elderly.



1993–94

Orthopedic surgeon Dr. Pompe uses electrical stimulation techniques during joint replacement surgeries.

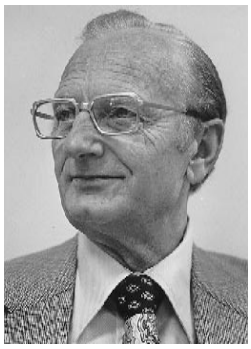
Gynecologist William Nahhas holds clinical trials on Tamoxifen, finding it has modest effect on endometrial carcinoma.

Physiologist Peter Lauf and pharmacologist Norma Adragna characterize the role of K-Cl cotransport in sickle cell disease.

Cox Heart Institute, established in 1964 through private funds and local industry, studied the origin, prevention, and treatment of heart disease.

Paul Kezdi, M.D., former director of the institute, senior investigator of the national Multiple Risk Factor Intervention Trial, and the first dean for research, notes that research was one of the catalysts for Dayton's medical school.

"An academic affiliation in research was very important," he explains. "It allowed us to recruit the best and brightest researchers and teachers to the area. We were doing research to improve heart surgery and felt that a medical school would bring prestige. Too, private funding sources were becoming less reliable, and a medical school would provide stability for research efforts. Many of the best researchers in the community were among the strongest supporters for the school. We could see the tremendous advantages that a medical school would bring to our community."



Paul Kezdi, M.D., former director of Cox Heart Institute and the first dean for research.

"Many of the best researchers in the community were among the strongest supporters for the school. We could see the tremendous advantages that a medical school would bring to our community."

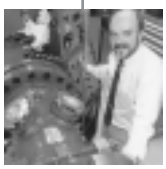
1995

Pathologist Al Batata introduces genetic testing with fluorescent *in situ* hybridization for patients with leukemia and cancer.

A biomedical laboratory studying age-related vision loss is named in honor of Mrs. Mary Petticrew and her late husband, Stanley.

Physiologist Luo Lu develops a departmental molecular and cellular core facility.

The Department of Emergency Medicine develops MRI technologies to quantitate brain edema development.



Physiologist Jay Dean constructs a hyperbaric chamber to test central nervous system function.

The Department of Microbiology and Immunology moves into new laboratory quarters.

1996

Psychiatrist Vikram Yeragani advances understanding of heart rate variability in psychiatric patients.

Drs. Cassandra Paul and Michael Baumann license myeloid cell line AML14, which becomes an international standard.

Gynecologist Robert Kovac develops guidelines for hysterectomy procedures.

Researcher Jeanne Lemkau studies the most effective ways to increase mammography testing.

Anatomist Robert Fyffe and WSUSOM hosts the first international symposium on neuroscience.

Gastroenterologist Manoop Bhutani develops intervention techniques using endoscopic ultrasonography.

Physiologist Richard White demonstrates the mechanism by which estrogen relaxes coronary arteries.

1997

Ophthalmologist John Bullock discovers complications associated with a new glaucoma drop and a novel technique to more safely remove dense eye cataracts.

Biochemist Brenda Wilson licenses a recombinant *Pasteurella Multocida* toxin biological agent.

Microbiologist Dawn Wooley discovers the possibility of genetic recombination of retroviruses.

Gynecologist Jeffrey C. King and others test the effectiveness of new techniques to detect cervical cancer and STD's.

Biomedical and human factors engineer Thomas Hangartner receives a patent for CT system that has the ability to quantitate cortical bone or other structures.

Physiology and Biophysics researchers study the characterization of the role of CO_2 and protons in the function of respiratory neurons.

1998

Gynecologists Robert Kovac and Stephen Cruikshank are the first to compare surgical methods to prevent enterocele.

Space physiologist Mary Anne Frey is the scientist in charge of the research on space shuttle *Columbia*.

Vision Loss

Daniel T. Organisciak, Ph.D.
Chair and Professor, Biochemistry and Molecular Biology

Ruth M. Darrow, Senior Research Associate, Biochemistry

This research examines the molecular mechanism by which visible light damages the retina of the eye. Light can damage retinal cells through long-term exposure as well as by acute exposure to very intense light. Dr. Organisciak's findings have shown that antioxidants retard damage, suggesting that oxygen free radicals play a role in retinal light damage. These studies may relate to the prevention of macular degeneration, the leading cause of blindness for Americans over 65. The macula is the region of the retina responsible for color vision and visual acuity.

Sponsor: National Eye Institute

Building a Research Infrastructure

The first requisite for both the research and education missions was a scientific library. In November 1973, the Thomas B. Fordham Foundation contributed $500,000 to establish the Fordham Health Sciences Library for the new medical school.

The gift allowed for the rapid acquisition of library holdings and provided a first-rate library much faster than many anticipated. Raymond Palmer, the first librarian of the Wright State University School of Medicine, knew that the facility was top notch. "The library became a finer facility than the institution expected—or maybe even needed. But at the time it was developed, the sights of all the people were very high and the library was developed with the future in mind."

Support for developing departments was critical for the future as well. Departments were given "start-up" packages that included facilities, staff, and funding. "The initial combination at the school of established research institutes and support for new basic science departments quickly advanced our research efforts," notes Robert A. Weisman, Ph.D., professor of biochemistry and associate dean for biomedical sciences. "As we've grown, we often have been able to recruit increasingly productive faculty in the research areas. And, we've been able to develop a culture in which to support research. For a 25-year-old medical school, we've made terrific progress."

Dan Organisciak, Ph.D., professor and chair of biochemistry and molecular biology, concurs, "For those of us who have been here long enough to witness the growth in funding at Wright State, it is clear that effective faculty recruitment, an efficient grants management office, and our maturity have contributed to this success. Effective leadership has provided important incentives, such as graduate students, reinvestment of funds, and equipment replacement."

Today, Wright State's faculty are highly regarded among their peers and collaborate with other researchers around the globe.

"The initial combination at the school of established research institutes and support for new basic science departments quickly advanced our research efforts. . . . For a 25-year-old medical school, we've made terrific progress."

Form Follows Function

Wright State University was constructed to be completely accessible for disabled individuals. Honeycombed below its campus lie connecting tunnels, and it was one of the first universities to provide comprehensive disability services. In addition, providing specialized health care for individuals with disabilities became an important focus for the new medical school because the Dayton VA Medical Center was a major teaching hospital. Some early research efforts, still supported by the Dayton VA and Miami Valley Hospital, focused around the highly specialized needs of both students and veterans.

In the early ’70s, little was known about spinal cord injuries (SCI). A pioneering research program here, now called the Institute for Rehabilitation Research and Medicine, discovered methods to improve the lives of disabled individuals and is the test site for several patents in this field.

The late Roger Glaser, Ph.D., professor of physiology, founding director for the institute, and a key researcher in this area for more than two decades, explained, “We discovered that functional electrical stimulation (FES)-induced exercise of paralyzed muscles improves aerobic capacity; increases size, strength, and endurance of paralyzed muscles; and decreases the rate of osteoporosis in bones.”

Overriding the damaged central nervous system, FES involves the delivery of computer-controlled electrical impulses to paralyzed muscles. The induced contractions in the muscles enable a person to move paralyzed limbs in exercises such as weighted leg lifts or peddling a stationary bicycle. FES has also been used to prevent thrombosis during hip and knee joint replacement surgery at Miami Valley Hospital.

The fitness levels that SCI individuals achieve can equal, even surpass, their able-bodied counterparts. Pam Stuart Fontaine was involved in this research program in the early ’80s. She played intercollegiate wheelchair basketball at Wright State in 1983, and she has stuck to a training regimen since then. Now a world-class athlete, Pam won a gold medal at the 1988 Paralympics and played guard on the U.S. Women’s Wheelchair Basketball Team that won a bronze medal in the 1996 Paralympics.

“Athletics has been an essential part of my lifestyle ever since Wright State,” explains Fontaine, now a mother of two. “People in wheelchairs also need to work out. The healthier you are, the better you feel.”

“People in wheelchairs also need to work out. The healthier you are, the better you feel.”

Disabilities

The Late Roger M. Glaser, Ph.D., (Left) Founding Director, Institute for Rehabilitation Research and Medicine Professor, Physiology and Biophysics and Rehabilitation Medicine and Restorative Care

Thomas W. J. Janssen, P.h.D., Acting Director (Center)

For more than 25 years, Dr. Glaser studied the problems of mobility and quality of life for individuals with various disabilities. He received seven patents for biomedical devices and developed and tested the functional electrical stimulation (FES) technique. FES induces muscle contractions of controlled intensity and duration, enabling individuals with paralysis to exercise on adapted bicycles and weight lifting equipment. Such exercise reduces the risk of secondary complications and improves health, fitness, and independence.

Sponsors: U.S. Department of Veterans Affairs; Miami Valley Hospital

Substance Abuse

Harvey A. Siegal, Ph.D.
Director, Substance Abuse Intervention Programs (SAIP)
Professor, Community Health and Sociology

For more than 20 years, SAIP has developed community service programs, provided educational opportunities to health professions students, and conducted significant research in several areas of substance abuse intervention and treatment. Studies have quantified local teen substance abuse, tested AIDS prevention programs for injection drug users, and shown the effectiveness of education and referral treatments for drivers convicted of driving under the influence (DUI). Recent studies examine the intersection of substance abuse use among individuals with disabilities.

Sponsor: National Institute on Drug Abuse

Community-Oriented Research: A Model to Build Upon

Although Wright State University School of Medicine was established as a community-based school without its own teaching hospital, some viewed the geographical distance between basic and clinical departments as a barrier to research. Others saw it as an opportunity to involve the community in the research mission. The opportunities soon became national models, and the problems posed by distance diminished by technology.

While other schools clung to tradition, the new Dayton model created its own tradition by embracing a community partnership model. Faculty quickly adapted their knowledge to community needs and strengths, forming partnerships and applied research programs that became models for the rest of the country.

For example, in 1978, Harvey Siegal, Ph.D., began the Weekend Intervention Program (WIP), a program to intervene early in the substance abuse cycle. "Substance abusers find their use adversely affects them three ways: with their families, on their jobs, and with the criminal justice system," explains Dr. Siegal. "Early intervention with families is difficult, and by the time a problem worsensed so it affected job performance, work-place initiatives and programs would kick in."

Dr. Siegal looked at the area's criminal justice system as an intervention site and DUI (Driving Under the Influence) as the kind of offense "many would commit; as such, it opened a large window to identifying people in trouble with alcohol and/or drugs. Ultimately we are at the mercy of society's most fragile and most troubled members," he explains. "Our job is to help these people, but also to improve the systems and organizations that deal with these societal issues. If we don't, we all suffer."

WIP, a combination of assessment, education, and referral, became a conduit between the community's criminal justice and human services systems. More than 36,000 convicted DUI offenders have been mandated by the courts to attend WIP since its inception, and WIP has proven to be more effective than either fines or incarceration for recidivism rates. The program has been replicated throughout North America.

"Ultimately we are at the mercy of society's most fragile and most troubled members. Our job is to help these people, but also to improve the systems and organizations that deal with these societal issues. If we don't, we all suffer."

Preparing Tomorrow's Researchers

The Wright State University School of Medicine actively encourages students to participate in medical research. Research training programs—offered to high school, undergraduate, graduate, and medical students—link students with faculty researchers.

Melissa Maunz, Year II medical student, participated in a research fellowship in the laboratory of Richard White, Ph.D., associate professor of physiology and biophysics. "I would recommend this experience to anyone who is curious about laboratory medicine and its relationship to one's future practice." she says.

An abstract of Melissa's research was accepted for presentation and placed second at the 1998 National Student Research Forum held at the University of Galveston. In past years, several Wright State students have won national recognition for their research projects.

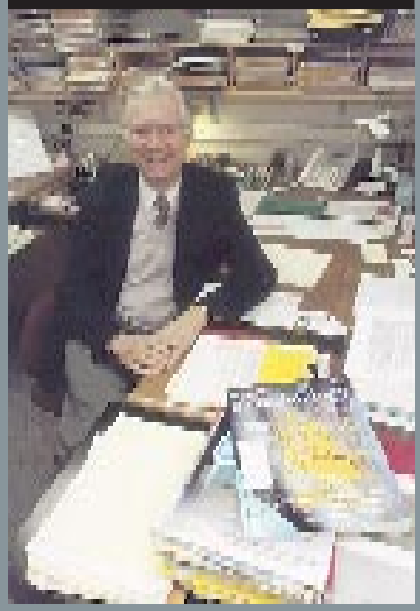
Medical schools cannot teach students everything that will impact their practices because of the rapid pace of research discoveries and the effects of these discoveries on the practice of medicine. Research introduces students to lifelong learning tools such as critical thinking, problem solving, and evaluation processes, and instills an understanding of scientific processes.

Hina Ahmed, Year II, under the tutelage of Norma Adragna-Lauf, Ph.D., associate professor of pharmacology, recently completed a fellowship sponsored by the American Heart Association. "Dr. Adragna helped me to hone my skills of patience and attention to detail," explains Hina. "She enabled me to obtain another perspective on how to surmount life's challenges, which can only make me a better clinician to my patients."

To further prepare students for careers in biomedical fields, a team of faculty who have extensive experience in addressing ethical issues facilitate discussions with students based on case studies and hypothetical scenarios. John Turchi, Ph.D. associate professor of biochemistry and molecular biology, emphasizes, "It is essential to expose students to ethical considerations in medicine and research. Sound scientific judgment must be complemented with good ethical judgment to prepare the next generation of scientists and physicians."

"Dr. Adragna helped me to hone my skills of patience and attention to detail."

Sickle Cell

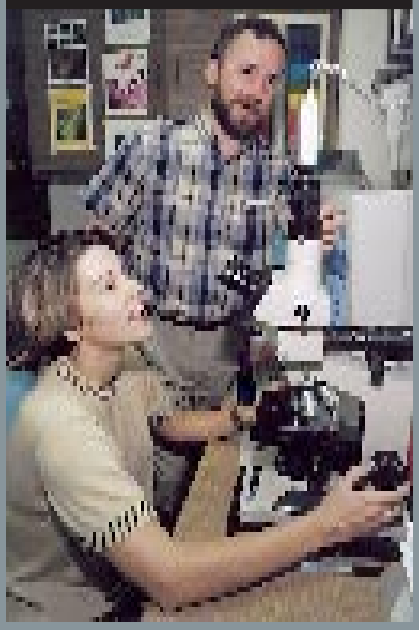


Peter K. Lauf, M.D.
Chair and Professor, Physiology and Biophysics

It is estimated that 70,000 Americans of different ethnic backgrounds have sickle cell disease. In the U.S., sickle cell syndromes are present in one in 400 African Americans. Dr. Lauf's research focuses on the fundamental transport of substances in and out of individual cells. Using model systems, Dr. Lauf and Dr. Adragna and their team examine the mechanism by which Hemoglobin S containing cells rapidly dehydrate resulting in the transformation into dense and irreversibly sickled cells. Because the transport system is found in cells all over the body, Dr. Lauf's studies have implications for many other diseases such as epilepsy, kidney disease, and some vascular problems.

Sponsor: National Institute of Diabetes and Digestive and Kidney Diseases

Neuroscience



Robert E.W. Fyffe, Ph.D.
Director, Biomedical Sciences Ph.D. Program
Professor, Department of Anatomy

Elizabeth A. Leman, Year II medical student, in the M.D./Ph.D. program

Neuroscience research at Wright State examines the spinal cord at a fundamental level. Using sophisticated imaging technology, research teams are documenting the basic structure of the neurons that control movement. Dr. Fyffe and his team are trying to understand how communication occurs between these cells. By creating a baseline description of normal activity that occurs within neurons, Dr. Fyffe and his team will help us better understand the pathology of abnormal or damaged nerve cells.

Sponsor: National Institute of Neurological Disorders and Stroke

Constructing the Model for Tomorrow's Cures

Tomorrow's research model will require even more collaboration, perhaps globally. Highly skilled technicians will be needed to operate sensitive equipment, and the process of developing clinical applications will happen more quickly.

The burgeoning field of neuroscience may best exemplify the new research model. The field encompasses aspects of anatomy, biochemistry, neurology, physiology, pharmacology, psychiatry, and others. At Wright State, Robert Fyffe, Ph.D., professor of anatomy and director of the Biomedical Sciences Ph.D. Program, maintains active research collaborations with scientists as close as next door and as far away as Australia. "You can't just sit back and take a single approach," explains Dr. Fyffe. "It has to be multidisciplinary. Research, especially in our field, requires expertise in several areas. It's so complex."

His research requires a high-tech approach, using electron microscopy and computer modeling, to understand basic properties of nerve cells. "It is important," explains Dr. Fyffe, "to understand how the cells function. How do they use the proteins that molecular biologists have identified? How does their structure, as identified by anatomists, affect their activity? How do they react to stress or injury as identified by physiologists? It is important to bring together all of these knowledge bases into the perspective of tissues and organs of living organisms. That's what we try to do."

This kind of basic science research provides the critical knowledge base for clinical breakthroughs. "Information we generate ultimately gets used. It gets into the textbooks and becomes introduced into the general body of knowledge. If you don't understand how things work at the basic level, you don't know how to fix it when it's broken. Our findings of how neurons respond to damage may have important implications for clinical applications, including Alzheimer's patients, stroke victims, and spinal cord injured individuals."

Dr. Fyffe has hosted two international neuroscience symposia at Wright State University, bringing together some of the most renowned researchers in this area to better understand the body's nervous system.

"Our findings of how neurons respond to damage may have important implications for clinical applications, including Alzheimer's patients, stroke victims, and spinal cord injured individuals."

The Community: A Research Structure Without Walls

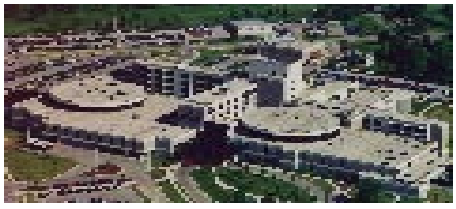
Our Federal Partners

Dayton VA Medical Center

In addition to a long history of contributing to national cooperative studies in hypertension, congestive heart failure, and coronary artery disease, the Dayton VA hosts specific research studies of the school's full-time faculty members:

- internationally acclaimed research on the contribution of overactivity of the central nervous system arousal functions to chronic insomnia;
- blood cell line, eosinophilic AML 14, that is extensively licensed and has become an international standard;
- a new assessment method—endoscopic ultrasonography— that improves the diagnostic accuracy for benign and malignant gastrointestinal disorders;
- exercise conditioning to improve or maintain the functional ability for patients with multiple sclerosis;
- genetic study of a respiratory syncytial virus that is a common cause of severe pneumonia;
- schizophrenia genetics;
- heart rate variability in relation to psychiatric disease that is providing new insight into the relationship between psychiatric disorders and the function of the autonomic nervous system;
- hypertension treatments and renal failure;
- case management strategies to improve drug abuse treatment;
- international research that reduces secondary complications for individuals with neuromuscular disorders.

WPAFB Medical Center



Partnerships between the school and Wright-Patterson Air Force Base Medical Center (WPAFB-MC) have created unique joint residency programs and research. The aerospace medicine program, one of two civilian programs in the country, uses the state-of-the-art facilities at WPAFB to train its students and conduct research.

CAD/CAM technology, originally developed for custom-fitted helmets and face masks for fighter pilots, has proven beneficial in clinical studies. Sidney Miller, M.D., professor of surgery and director of the adult regional burn center at Miami Valley Hospital, has successfully developed and tested burn masks using defense technology. The masks have reduced scarring and hastened recovery for burn patients.

Pregnancy-loss Prevention

Neal S. Rote Jr., Ph.D.
Chair and Professor, Microbiology and Immunology

Twenty percent of all women receiving positive pregnancy test results will lose the pregnancy at some time during the process. Many of these women are losing their babies for genetic reasons, because of hormonal imbalances, or due to physical problems that can be corrected with surgery. A sizable percentage of women suffer from recurrent pregnancy loss for no known reason. Dr. Rote has had success in relating these pregnancy losses to autoimmune disease, where antibodies attack the pregnancy. He and his researchers also study certain genes found in cells of the placenta believed to trigger the growth of the placenta. These findings will advance our understanding of normal pregnancies and the deviations that might cause abnormal pregnancies.

Sponsor: National Institute of Child Health and Human Development

Child Development and Cardiovascular Risk Factors

Roger M. Siervogel, Ph.D.
Head of Division of Human Biology
FELS Professor, Community Health and Pediatrics

Since 1929, the Fels Longitudinal Study has monitored the growth to adulthood of more than 1,000 children, plus an even greater number of their relatives. The study measures the differences in the growth and health status of people through their lifespan. Fels scientists helped analyze data for the pediatric growth charts used nationwide. Since merging with the School of Medicine in 1977, the primary focus has been body composition and how it affects health and cardiovascular disease risk factors.

Sponsor: National Institute of Child Health and Human Development; National Heart, Lung, Blood Institute

Our Hospital Partners

Children's Medical Center

Ongoing investigations include gait analysis for cerebral palsy, genetics, influenza, pediatric AIDS, pseudomonas, cystic fibrosis, cancer, hemophillia, osteogenesis imperfecta, child abuse, child and adolescent behavior disorders, and epilepsy.

Franciscan Medical Center, Dayton Campus

Studies include kidney disease, family medicine curriculum and faculty development, and mammography use for elderly women.

Good Samaritan Hospital

Research here includes breast cancer, childhood diabetes, childhood anxiety disorders, psychiatric epidemiology and women's health, psychoses, forensic psychiatry, and psychopharmacology.

Kettering Medical Center

The MRI facility here assisted in key studies that developed and characterized clinically relevant models for cerebral edema and technologies to quantitate brain edema development.

The nuclear magnetic resonance laboratory provides imaging in several areas of biochemical and biomedical research, including *in vivo* studies on liver metabolism and toxicity.

Miami Valley Hospital

The school's faculty head patient care and research in the areas of burn treatments, breast and gynecological cancer, infertility, perinatal health, antibacterial and antifungal agents, infectious diseases, wound and trauma care, joint replacement, vascular disease, and the cause and nature of injuries in the community. The computed tomography system at this facility has assisted extensive testing of bone density, particularly in the treatment of osteoporosis and osteogenesis imperfecta, and the hospital provides laboratory and clinical facilities for the Institute of Rehabilitation Research and Medicine.

Preparing for the Future

Kim Goldenberg, M.D., professor of medicine and former dean of the medical school, envisions research growth in the clinical research area. In collaboration with the school's teaching hospitals, he has established the Office of Clinical Research to better accommodate clinical trials for new drugs, biotechnology products, and medical devices.

Glenn Hamilton, M.D., professor and chair of emergency medicine and author of the feasibility study for the office, explains, "Clinical trials are currently a substantial source of funding, but we are now competing with private industry and anticipate this activity moving away from academic medical centers. To remain competitive and increase our activity, we must facilitate and speed up our entire process. We are on the front line of community-based medical schools that are examining this area."

Ongoing research studies range from the molecular and cellular level, to health policy, to clinical trials. Nationally, the school has one of the highest ratios of research funding per state appropriations among community-based medical schools, and its external research funding has increased 98 percent over the past five years.

Research, one of the three basic missions of academic medical centers, is a natural complement to our missions of patient care and education. Incorporating research into the education of tomorrow's doctors enables them to use the latest knowledge and skills for their patients' care.

Acting Dean Howard Part sees medical research as key to the community's health status and overall development. "Obviously, the school and its faculty impact our community in many ways," he explains, "and community-oriented research has become our hallmark. Although our patient care mission is more visible than our research mission, research enables us to bring into the region funds from national and local sponsors and high-caliber scientists and clinicians. As our faculty, they provide tomorrow's doctors with the latest knowledge and patient treatments. These talented individuals, and the important work they do, become an economic engine that benefits our community particularly while advancing knowledge generally. This combination is truly a win-win situation for us all."

"These talented individuals, and the important work they do, become an economic engine that benefits our community particularly while advancing knowledge generally."

Hypertension

Mariana Morris, Ph.D.
Chair and Professor, Pharmacology and Toxicology

Scientists know that the brain regulates blood pressure through the release of hormones, but exactly how this process occurs remains a mystery. In her search to unlock the secret, Dr. Morris is studying genetically modified mice. The gene that controls blood pressure is absent in these mice so instead of being hypertensive, they have low blood pressure. Dr. Morris is able to study the effects of drugs on these mice as well as the effects of dietary changes. The department is also studying the pathway by which stress influences the cardiovascular system and how medications may modify the process.

Sponsor: National Heart, Lung, and Blood Institute

Breast Cancer

Jeanne P. Lemkau, Ph.D.
Vice Chair for Research
Professor, Family Medicine

Early detection is a critical element in the fight against breast cancer. Dr. Lemkau's most recent study found that nearly 70 percent of women age 50 or older who are referred for a mammogram by their primary care physician followed through on the referral within one year. Only 18 percent of the women in the study completed a mammogram on their own initiative. Manuel Castillo, M.D., associate professor of surgery, hopes to prove in a related study that the involvement of primary care physicians in cancer screening will decrease mortality rates and aid in early diagnosis.

Sponsor: National Institutes of Health, National Cancer Institute

Profiles

"People with disabilities experience a lot more risk for substance abuse than other people do."

Dennis C. Moore, Ed.D.

Dennis Moore's professional life began as a special educator, working in a school with kids who had a number of disabilities. His duties at Four Oaks School in Xenia, Ohio, included developmental/educational assessments, family counseling, and children's services assessments. He went from there to work at Sinclair Community College, chairing the Early Childhood Special Education Program.

It became obvious to him that substance abuse was often a part of the home environment for children with disabilities. "People with disabilities experience a lot more risk for substance abuse than other people do," he notes, "and the disabilities that limit their participation in society also limit their participation in programs that can help them." He became so interested that he went back to school to earn a doctorate in Counseling and Counselor Education from Indiana University.

Now Dr. Moore is director of the Substance Abuse Resources and Disability Issues (SARDI) program at Wright State University School of Medicine. Started in February 1990, by Dennis Moore, Ed.D., and Harvey Siegal, Ph.D., director of the Substance Abuse Intervention Programs, SARDI is the only research entity in the country that looks at the intersection of disabilities and substance abuse.

Dr. Moore and his staff of 14 people receive several hundred calls for requests for technical assistance every year from all over the world, and they have a far-reaching newsletter that goes all over the U.S. as well as to Russia, India, and South America. "The requests we get for technical assistance range from inmates who are soon to be released from federal penitentiaries and would like to find a treatment program for their chemical dependency, all the way to the Assistant Secretary of Education who needs to know what is going on for kids in special education in the area of substance abuse prevention," says Dr. Moore.

Dr. Moore is in great demand. He has traveled extensively, presenting papers and lecturing at conferences in Australia and all over the United States. He also teaches a class to first year medical students on "Things a Physician Should Know About People with Disabilities."

His next trip will be for pleasure. He has recently taken up sailing and anticipates a sail from Florida to an island near Cancun, Mexico. "It's going to be wonderful," he says.

— Carol A. Kayden

"She has the most highly effective group process skills of anyone I know. She's amazing."

Deborah K. Vetter, M.S.

Deborah Vetter was recently appointed to the the newly created position of director of faculty development operations in the Office of Faculty and Clinical Affairs. Howard Part, M.D., acting dean, says of Deb, "She has the most highly effective group process skills of anyone I know. She's amazing."

As the editor and a frequent author (or ghost writer) of *The Triple Threat*, Deb packs this School of Medicine newsletter with ideas designed to disseminate and exchange information about school-wide efforts to support faculty development.

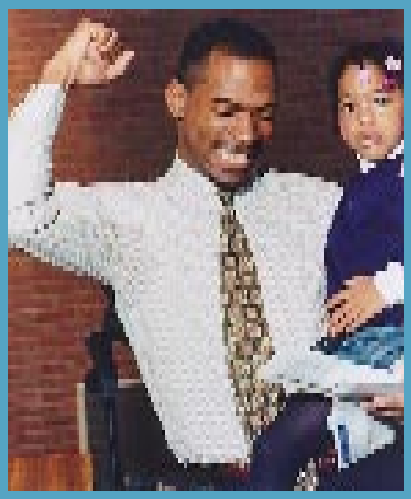
Deb is an expert at organizing faculty retreats. Whether behind the scenes as a coach or out front as a facilitator, Deb uses group process strategies to assist groups involving individuals with diverse backgrounds and differing points of view to reconcile differences and reach consensus. Jane Scott, Ph.D., chair and associate professor of anatomy, is exuberant in her praise of Deb's skills. "She is so positive! While making plans for our retreat, Deb made certain that we knew how to get started and keep our focus, and she simplified the process with effective techniques for quality discussion and resolution. By the end of the day our issues were ready to take shape."

There are many facets of Deb's position and she attacks them all with the same vitality and dedication. In her role building and supporting faculty development enterprises, Deb also works with Robert Weisman, Ph.D., associate dean for biomedical sciences. With Dr. Weisman and two School of Medicine committees for research, Deb strives to promote research within the school, especially collaborations between clinical and basic scientists. She is the editor of *The Investigator*, a newsletter dedicated to the School of Medicine research environment.

Deb is married to Kenneth Vetter, a pastor in Springfield, and has three grown children. Her mastery of group dynamics carries over into her private life. She is planning a large family reunion with the same organizational expertise she uses at work. Dexterity with words is not Deb's only talent. She is an accomplished pianist and enjoys playing in church and at hotel receptions.

— Mary Lou Graham

Match Day 1998



Kalvin Wiley and daughter celebrate.

The Class of 1998 was very successful in the residency match. Eighty-six percent—compared to 79 percent nationally—received one of their first three choices. Sixty-three percent of Wright State's graduates will remain in Ohio for residency training; 27 percent will remain in the Dayton area.

Wright State University School of Medicine continues to outpace the national trend that is leading more and more physicians into primary care medicine. Seventy-three percent of the Class of 1998 will enter primary care residencies in family medicine, internal medicine, and pediatrics this year. Nationally, 56 percent will do so.

A True Friend

Vera T. Schneider was a longtime friend to the WSU School of Medicine. Her final act of friendship was the bequest of over $1 million to the William A. and Blanche M. Schneider Scholarship fund, established by Miss Schneider in 1981 in honor of her parents.

Miss Schneider, who died in 1996, enjoyed a long career in real estate, civic, political, and philanthropic endeavors. She was a strong supporter of Fairborn and of the school, according to Noah LeMaster, executor of her estate and longtime friend.

Another friend, Sharon A. Lewis, associate provost for academic administration and support services at Wright State said, "Vera was a pioneer in real estate in this area. She started helping her dad in his real estate office after she graduated from high school. She made her first sale and was hooked. She took over the business about 1940 and for years was the only female realtor in this area and one of very few in the state. With Fairborn and the Air Force base developing, it was the perfect opportunity for an aggressive realtor.

"I remember riding around town with her and she would point out houses and say, 'I sold that house seven times; that one over there six'," Ms. Lewis recalled. "Military families moved in and bought houses from her; 18 months later they were transferred out and would call her again."

Miss Schneider's devotion to the Fairborn area is illustrated by the many projects she supported, including contributions to the Greene Memorial Hospital outpatient wing named after her,

Fairborn City Schools for teacher excellence awards, and another gift to the school district for scholarships. Her support of the Wright State University School of Medicine included the original funding of the scholarship she named for her parents and a scholarship in her name funded in 1987.

Miss Schneider enjoyed attending School of Medicine events, such as match day, convocation, and graduation. "She loved meeting the students," said Ms. Lewis, who went on to describe Schneider as "feisty and outspoken; a very shrewd but ethical businesswoman who would always make the best deal."

Ms. Lewis recalled, with obvious pleasure and affection, "Vera was a tiny little dynamo, always on the go, with an incredible metabolism. She ate one pound of Esther Price chocolates every night for 30 years, and she was still mowing her lawn, nearly an acre, until she was in her 80s. Fairborn was her devotion; this town was her life. That is why she did so much for Wright State."

President Kim Goldenberg, M.D., summed up, "Wright State medical students have long benefitted from the generosity of Vera Schneider. By endowing scholarships that support the education of tomorrow's physicians, her bequest makes a permanent and fitting memorial."

Noah LeMaster Recognized

Banker and local community leader Noah LeMaster was recognized for nearly two decades of service to the University Medical Services Association (UMSA). He was honored with a plaque at the February 18, 1998, UMSA Board meeting.

LeMaster served as a member of the UMSA Board of Trustees and has been a member of the Wright State University Foundation, president of the Fairborn Chamber of Commerce and the Greene County Crippled Children's Society. LeMaster has also devoted time to the United Way, American Cancer Society, and the Fairborn Community and Cultural Arts Center.

"I learned so much about medicine from associating with the physicians on UMSA and I hope I was able to contribute some from the business sense," said LeMaster. "The Wright State School of Medicine has been a real strength to this community. Training our future doctors is of tremendous benefit to not only the Dayton area, but to the whole country."

Currently the manager of the Standard Register Federal Credit Union, LeMaster is former president of the Dayton Chapter of the American Institute of Banking and chaired Group I of the Ohio Bankers Association.

— L. B. Fred

Back row (standing), left to right: Ralph A. Hicks, M.D., Richard T. Garrison, M.D., M.S., Scott Zimmer, John J. Turchi, Ph.D. Front row (sitting) left to right: Jonathan Puchalski, Pamela von Matthiessen, Emil Peterson, M.D., and Peter E. Neifert, M.D.

Academy of Medicine Dinner

The Wright State University Academy of Medicine hosted its Annual Distinguished Guest Lecture and Dinner Meeting on April 29, 1998. The featured speaker, Michael M. E. Johns, M.D., was chairman of the board and CEO of Emory Health Care and executive vice president for health affairs at Emory University. Dr. Johns spoke about "Professionalism in Medicine in a New Environment."

The Academy of Medicine is a community-based service organization dedicated to supporting excellence in medicine through education, research, and service. The academy contributes to student loans and scholarships, recognizes outstanding examples of professionalism, and provides opportunities for fellowship in the medical community.

The Academy of Medicine granted the following awards for 1998:

Professional Excellence Award (Clinical)
Richard T. Garrison, M.D., M.S.

Outstanding 4th-year Student Award
Jonathan Puchalski

Outstanding 4th-year Runners-up
Pamela von Matthiessen
Scott Zimmer

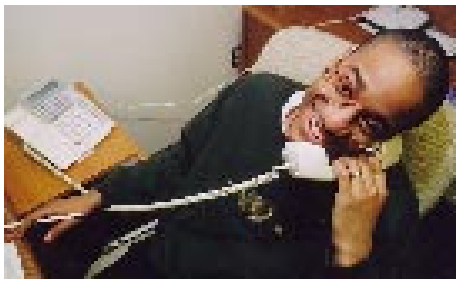
Outstanding Resident
Peter E. Neifert, M.D.

Excellence in Medical Education and Research
John Turchi, Ph.D., Associate Professor, Biochemistry and Molecular Biology

Outstanding Achievement in Medical Education
Ralph A. Hicks, M.D., Associate Professor, Pediatrics

New Appointment

L. B. Fred, M.S. Ed., has been named assistant director of advancement for Wright State University School of Medicine. Mr. Fred was the director of special programs at the University of Dayton and, prior to that, the assistant director for academic advising in the University Division of Wright State University.



Marcus Washington, Year IV, at the phones.

SOM Annual Phonathon

During the week of February 2–5, a total of 28 third- and fourth-year medical students spoke with more than 500 alumni in the Annual School of Medicine Phonathon. Students raised $21,490 in pledges, up 12 percent over 1997 and 32 percent more than pledges in 1996. Excited students competed for prizes in such categories as the most money raised, largest single gift, and the largest number of pledges. A dozen area merchants donated prizes ranging from food to clothing to Nutter Center event tickets. Alumni gifts support scholarships and other program needs.

Thanks to everyone who participated.

New Faces

Marvin D. Almquist, M.D.
Captain, USAF
Instructor, Obstetrics and Gynecology
M.D.: The Ohio State University
Residency: Good Samaritan Hospital, Cincinnati (obstetrics and gynecology)

Chad K. Brands, M.D.

Instructor, Medicine and Pediatrics
Assistant Professor, Medicine
M.D.: Baylor College of Medicine
Residency: University Hospital and Children's Hospital Medical Center, Cincinnati (internal medicine and pediatrics)

Emily E. Bucy, M.D.

Assistant Professor, Psychiatry
M.D.: University of Cincinnati
Residency: Wright State University (psychiatry)

Bradley T. Christian, Ph.D.

Assistant Professor, Medicine
Ph.D.: University of Wisconsin-Madison

Peter T. Ender, M.D.

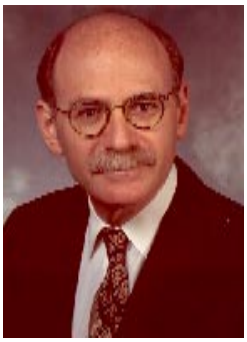
Captain, USAF
Assistant Professor, Medicine
M.D.: Temple University School of Medicine
Residency: Wilford Hall Medical Center (internal medicine)
Fellowship: Wilford Hall Medical Center (infectious diseases)

Leadership Changes at Wright State University

The Wright State University Board of Trustees has named Kim Goldenberg, M.D., the university's fifth president. Dr. Goldenberg served as dean of the Wright State University School of Medicine since 1990. He succeeds Harley E. Flack, Ph.D., who died March 29, 1998.

Citing the university's need for "strong, focused, fully empowered leadership," Daniel W. Duval, chair of the WSU Board of Trustees and president and CEO of Robbins & Myers, Inc., said, "We know of no one better qualified than Kim Goldenberg for this vital leadership position."

Kim Goldenberg, M.D.



Howard M. Part, M.D.

The WSU Board of Trustees also appointed Howard M. Part, M.D., acting dean of the School of Medicine. Dr. Part served as associate dean for faculty and clinical affairs at the School of Medicine since 1995. After joining the medical school's fully affiliated faculty in 1988, he held a succession of leadership positions in Wright State's Department of Medicine. He was chief of the General Medicine Consult Service and director of the Integrated Internal Medicine Residency Program at the Dayton Veterans Affairs Medical Center, as well as the department's vice-chair for medical education. He also served a term as the department's chair.

A native of New York City, Dr. Part received a B.S. degree from Ohio University. He holds an M.D. degree from The Ohio State University, where he also completed a residency in internal medicine. Dr. Part is certified by the American Board of Internal Medicine and is a fellow of the American College of Physicians (ACP).

Dr. Part has received nine teaching awards since joining Wright State's faculty. He was selected twice for the School of Medicine Teaching Excellence Award by medical students in the classes of 1992 and 1995. He received the Dean's Award for Excellence in Medical Education in 1992.

Margaret M. Dunn, M.D., F.A.C.S.

Margaret M. Dunn, M.D., F.A.C.S., associate professor of surgery, has been appointed acting associate dean of faculty and clinical affairs. Dr. Dunn is also the associate program director of the integrated surgical residency program for the school and the co-director for surgical education at Miami Valley Hospital. She received her B.S. degree from Pennsylvania State University and the M.D. degree from Jefferson Medical College. Her residency was completed at Einstein-Montefior Integrated Surgical Residency in New York. She is certified by the American Board of Surgery and the National Board of Medical Examiners. Dr. Dunn has served as president for the Association of Women Surgeons and the Dayton Surgical Society and has received numerous awards for teaching and research.

Recognition and Awards

Gerald Alter, Ph.D., associate professor of biochemistry and molecular biology, received the 1998 Research Award from the American Heart Association at its annual Heart Ball. Dr. Alter's research focuses on how cell enzymes control energy in heart cells, and he has volunteered in several capacities for the American Heart Association.

Gary LeRoy, M.D. ('88), associate professor of family medicine and medical director of the East Dayton Health Center, received the 1998 Outstanding Alumni Achievement Award from Wright State University's Alumni Association. This award is given to a Wright State graduate who has attained a significant level of achievement in his or her field, has demonstrated a positive impact at a local, state, or national level, and possesses the highest standards of integrity and character.

Peter Lauf, M.D. (left), professor and chair of physiology and biophysics, received the 1998 Outstanding Engineers and Scientists Award for Research sponsored by the Affiliate Societies Council of the Engineering and Science Foundation of Dayton. Dr. Lauf's pioneering contributions in the area of biological membranes are internationally recognized and relevant for our understanding of abnormal cell dehydration, particularly of sickle cell disease.

New Faces

Michael P. Kezmoh, M.D.
Captain, USAF
Instructor, Obstetrics and Gynecology
M.D.: University of Southern California
Residency: Rush Presbyterian St. Luke's Medical Center (obstetrics and gynecology)

Cynthia H. Ledford, M.D.

Instructor, Medicine and Pediatrics
M.D.: The Ohio State University
Residency: Children's Hospital Medical Center, Cincinnati (internal medicine and pediatrics)

Matthew Mitchell, M.D.
Major, USAF
Assistant Professor, Orthopedic Surgery
M.D.: Harvard Medical School
Residency: The Ohio State University (orthopedic surgery)

Jogeshwar Mukherjee, Ph.D.

Associate Professor, Medicine
Ph.D.: Univeristy of Jodhpur, India

Stuart J. Nelson, Ph.D.
Associate Professor, Microbiology and Immunology
Ph.D.: University of Wisconsin-Madison

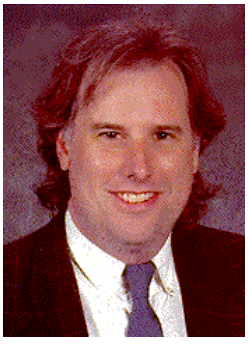
Matthew P. Wicklund, M.D.
Major, USAF
Assistant Professor, Neurology
M.D.: University of Colorado
Residency: Dartmouth Hitchcock Medical Center (internal medicine); University of Michigan (neurology); Wilford Hall Medical Center (neurology)

Items of Note

Andrew Kuntzman, Ph.D., associate professor of anatomy, received the Ernest Boyer Award for Innovative Excellence in Teaching, Learning, and Technology at the Ninth International Conference on College Teaching and Learning.

Marshall Kapp, J.D., M.P.H., professor and director, office of geriatric medicine and gerontology, received the 1998 Researcher of the Year Award from the Ohio Research Council on Aging. Dr. Kapp joins a select group of researchers so honored for their work.

John Bullock, M.D., F.A.C.S., professor and chair of ophthalmology, has been listed in *Best Doctors in America: Midwest Region*. The book is based on an "exhaustive survey in which more than 5,000 doctors in the Midwest were asked to rate the clinical abilities of their peers."



David Cool, Ph.D., professor of pharmacology and toxicology, recently received a four-year, $400,000 grant from the National American Heart Association to study the secretions of cardiovascular-related hormones, particularly vasopressin.

Jeff Schnader, M.D., F.C.C.P., chief of the pulmonary and critical care division in the Department of Medicine has been appointed to a five-year term of the Editorial Board of *Chest.*

Global News

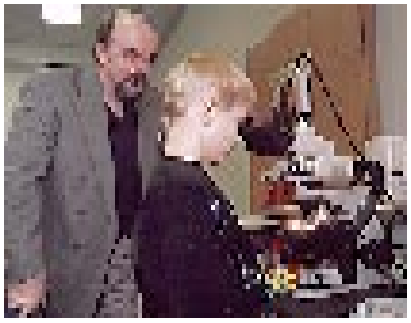
China

The World AIDS Foundation is sponsoring an AIDS prevention project that teams researchers in our Substance Abuse Intervention Programs with a group from Shandong Medical University in Jinan, China. Wright State will provide a training program to the Chinese on how to conduct behavioral risk assessments.

Brazil

Research scientists from three different universities in Brazil have visited Wright State to set up research collaborations with the Department of Pharmacology and Toxicology. Dr. Aldo Lucion, professor of physiology, works in the area of brain serotonin systems and stress responsiveness. Dr. Jose Antunes-Rodrigues, professor and former dean of the Medical School in Riberia Preto, studies sodium metabolism. Deborah Columbari, a graduate physiology student, spent several weeks here learning techniques to apply to her research interests in baroreceptor influences.

Brain Awareness Week



Jay Dean, Ph.D., associate professor of physiology and biophysics, provides hands-on learning for this young participant.

Launched as a nationwide campaign to educate the public about brain diseases and disorders, Brain Awareness Week was celebrated at Wright State through several activities. More than 50 community members participated in hands-on computer programs, demonstrations of neurological tests that doctors use, games and illusions that illustrate the complex functions of the human brain, and technologies used in neuroscience research. The exhibit was sponsored by the Society for Neuroscience and the Department of Anatomy.

Health Fair

Several medical students helped host "The Extinguisher" Health Fair, an antismoking campaign held at the East Dayton Boys and Girls Club.