



Medical Miracles

A look at the cutting edge medical research,
advanced treatments and clinical trials
taking place within the
Illinois Medical District at Springfield

What “Medical Miracles” Are Inside the Illinois Medical District at Springfield?

Welcome to the first edition of the Sangamon County Medical Society’s “Medical Miracles” – a close look at the significant advanced medical treatments, scientific research and clinical trials taking place within the new Illinois Medical District at Springfield (IMDS).

This publication was introduced at the “Medical District Expo” on June 16, 2006, at the James T. Dove, M.D. Conference Center in the Prairie Heart Institute in Springfield. These “Medical Miracles” and the people behind them illustrate some of the great discoveries, research and development, and medical advancements that give the IMDS its preeminence as a growing center of medical excellence.

As part of our continued support of the IMDS and belief in the promise it holds, the Sangamon County Medical Society convened a Peer Review Panel of member physicians to identify the leading innovators who practice medicine and conduct research here, and who contribute to this city’s overall stature as a regional center of quality health care.

The work by these 21 individuals selected is representative of the discoveries being formulated and the newest medical care being provided, and serve as a cross-section of the extensive areas of research currently underway. We plan to host such similar recognition programs on an annual basis, thus honoring many more of the fine physicians and researchers within our medical community.

We thank the panel for their time and commitment to maintaining a fair and objective review process that remained circumspect in its endeavor. They practiced due diligence each and every step along the way:

Carol Bauer, M.D. – Otolaryngology, SIU School of Medicine
Donald R. Graham, M.D. – Infectious Diseases, Springfield Clinic
Frank L. Mikell, M.D. – Cardiology, Prairie Cardiovascular Consultants
David S. Resch, M.D. – Medicine/Psychiatry, SIU School of Medicine
Lawrence J. Smith, M.D. – Nephrology, Central Illinois Kidney & Dialysis Associates

Physicians and researchers were invited to submit a brief survey of their work, with supporting documentation. The panel reviewed their patent(s), success in obtaining national grant funding from agencies such as the National Institutes of Health, participation as the principal investigator in clinical research trials, and/or regional and national reputation in attracting patients to Springfield. Physicians on the panel whose submission was being reviewed recused themselves from the selection process.

We also extend our appreciation to the Public Affairs staff at SIU School of Medicine for their contribution to this project – Nancy Zimmers, Director, Ruth Slottag and Merle Shiffman.

Sincerely,

Leonard Giannone, M.D.
SCMS President

Tammie Klein, M.D., Chair
SCMS Education/Program Committee

Isabel Manker
SCMS Executive Director

Established in 1899, the Sangamon County Medical Society is a non-profit professional organization of over 1,000 physician, resident and medical student members from Sangamon County whose mission is to provide leadership in health care through service, education and advocacy for our members, patients and the community in Central Illinois.



Medical Miracles

Andrzej Bartke, Ph.D.

Southern Illinois University School of Medicine, Departments of Internal Medicine and of Physiology

Bartke is professor of internal medicine and physiology, director of geriatric research for the internal medicine department and an SIUC University distinguished scholar. His research on the hormonal and genetic control of aging and reproduction in mammals has attracted national and international attention because of its potential implications for other species, including humans. He raised the longest-lived mouse, which died one week before turning five, for which he was awarded the inaugural Methuselah Longevity Prize for his contributions to life extension



Andrzej Bartke, Ph.D.

research. Bartke's research has received more than \$8 million in national funding. He also was named a Life Sciences Innovator at the iBIO meeting in Chicago in April 2006, which featured leading researchers in the Midwest.

Research areas: Growth hormone, aging and reproduction in mammals

Current focus: Identifying mechanisms responsible for delayed aging and prolonged longevity of mutant mice and characterizing interactions of mouse longevity genes with the effects of reduced caloric intake

Key concept: Bartke's research results suggest that reduced levels or actions of growth hormone enhance responsiveness and sensitivity to insulin and therefore, are important to prolonging life in the mutant mice being studied.

Newest idea: Insulin resistance may accelerate aging

Experimental innovation: Bartke's research on the biology of aging was the first to be done using laboratory mice and also provided the first evidence that mutation of a single gene causes major life extension in a mammal.

In search of: A way to slow the aging process and prevent age-related diseases in humans

Carol A. Bauer, M.D.

Southern Illinois University School of Medicine, Department of Surgery

Bauer is associate professor of otolaryngology head and neck surgery who specializes in chronic diseases of the ear, including hearing loss, balance problems and a complex disorder of the ear, known as tinnitus. Her research funding total is \$1.5 million.



Carol Bauer, M.D.

Research areas: Bauer's team investigates tinnitus that results from age-related hearing loss and hearing loss after acoustic trauma. Discoveries from research in her laboratory have led to clinical trials investigating drug treatments for chronic tinnitus.

Current focus: A double-blind, placebo-controlled clinical trial investigating the effects of tinnitus retraining therapy on the loudness and annoying aspects of tinnitus

Key concept: Tinnitus is a common problem that affects 30 million Americans causing significant disability in five million. Bauer's research is directed towards understanding tinnitus and developing effective and safe treatments.

Newest idea: Using novel imaging techniques to map the areas of the brain that are involved in the development and conscious perception of tinnitus

Experimental innovation: A recently completed clinical trial determined that the drug, gabapentin, was effective in reducing both the loudness and annoyance for those with tinnitus caused by acoustic trauma or noise damage. She and a group of SIU scientists, using an animal model, were the first in the world to demonstrate the brain changes that occur at the single-cell level as a result of tinnitus.

In search of: Better understanding of tinnitus and the development and investigation of new, effective therapies



Gregory Brewer, Ph.D.

Gregory J. Brewer, Ph.D.

Southern Illinois University School of Medicine, Departments of Neurology and of Medical Microbiology, Immunology and Cell Biology

Brewer is professor of neurology and medical microbiology, immunology and cell biology. He is being funded by the National Institutes of Health to study how aging contributes to Alzheimer's disease and he studies two and three-dimensional neural networks to learn how the brain computes. Brewer's research funding has totaled more than \$4 million. He also was named a Life Sciences Innovator at the iBIO meeting in Chicago in April 2006, which featured leading researchers in the Midwest.

Research areas: Cell biology of Alzheimer's disease, neural networks, media for nutrient support of neurons

Current focus: Damage to neurons in aging caused by oxyradicals, which are a group of atoms that change healthy cells into unhealthy cells, derived from molecular oxygen

Key concept: Optimized concentrations of common nutrients which promote survival of neurons in the brain, possibly useful in brain surgery

Newest idea: Blueberry extract protects against destruction to nerve tissue by an abnormal starchy material known as amyloid

Experimental innovation: He developed a refined medium that promotes neuron survival. In 2003, he established an independent company, BrainBits LLC, to supply neuroscientists with precisely dissected regions of rat brain so that they can discover and evaluate new drug targets.

In search of: The aging cause of Alzheimer's disease and how neurons compute



Donald Caspary, Ph.D.



James Dove, M.D.



Gary Dunnington, M.D.

Donald M. Caspary, Ph.D.

Southern Illinois University School of Medicine, Department of Pharmacology

Caspary is professor of pharmacology and SIUC University distinguished scholar. The team of SIUC colleagues that includes Caspary is one of a handful of academic groups in the U. S. that examine hearing loss in ways that could lead to drug treatments and give people options in addition to hearing aids. The same group of SIUC scientists were the first in the world to demonstrate in an animal model the brain changes that occur at the single-cell level as a result of tinnitus or ringing in the ears. Caspary's research has received national funding for 27 years and has totaled more than \$4.3 million. He also was named a Life Sciences Innovator at the iBIO meeting in Chicago in April 2006, which featured leading researchers in the Midwest.

Research areas: Age-related hearing loss

Current focus: Studying how the brain changes its ability to process auditory signals during aging

Key concept: How receptors in hearing structures change with aging, and how the mechanisms which trigger these changes could lead to the development of drug therapy for age-related hearing loss

Newest idea: Age-related changes in protein turnover may affect the processing of auditory signals in the brain.

Experimental innovation: His ongoing projects are focused on how the brain changes its ability to process auditory signals as we age, examining how receptors in the auditory parts of the brain change their structural and chemical makeup with aging and what triggers these age-related changes.

In search of: A clear understanding of age-related changes within the central hearing circuits that could lead to new drug treatments or therapies

James T. Dove, M.D.

Prairie Cardiovascular Consultants

Dove is president-elect of the American College of Cardiology and will assume the presidency in March 2007.

Research areas: Prairie Education and Research Cooperative (a not-for-profit foundation) is involved in numerous clinical trials which have substantially advanced the knowledge base and treatment of patients in the development of new diagnostic procedures and therapies.

Current focus: After presenting details about this quality medical record tool around the country, it was apparent that no such electronic tool is available. A copyright was obtained in 2004 and a patent application was submitted in the fall of 2005 and is pending.

Cutting-edge treatment: The application of quality tools at the bedside improves cardiovascular care with decreased morbidity and mortality and facilitates moving medical information from the clinical trials to the application at the bedside or in the outpatient clinic, known as translational medicine.

Patient outreach: The development of Prairie Cardiovascular Consultants' network has spread quality health care in communities throughout central and southern Illinois. This has provided prevention, diagnosis and treatment in a timely patient-centered fashion in areas where previously treatment options and access were not available. Prairie Cardiovascular is nationally recognized for quality cardiovascular care and was named the Practice of the Year in 2004 by Physician Practice magazine.

Experimental innovation: In cooperation with physicians and staff at Prairie Cardiovascular Consultants, Dove developed an electronic quality medical record tool that dramatically improved compliance to practice guidelines. Today, medical providers want to deliver to patients the best quality based on the most recent practice guidelines and this tool has the potential to assure near 100 percent compliance.

Gary L. Dunnington, M.D.

Southern Illinois University School of Medicine, Department of Surgery

Dunnington, professor and chair of surgery at SIUC, has been recognized nationally and internationally for his pioneering research, focusing on advances in surgical education, which has resulted in changes in the way surgeons are trained throughout the U.S. He has been recognized by the Association of Surgical Education as a Master Educator. SIUC's Department of Surgery also has been recognized nationally as a model for excellence in surgical education and in March of 2006 was named by the Carnegie Institute as one of two U.S. programs with exemplary surgical education practices. Dunnington's area of clinical expertise is in breast cancer and he is the founder and director of The Breast Center at SIUC, the first truly interdisciplinary approach to patient care in the region.

Research areas: Development of surgical skills, assessment of competencies in surgical training and patient safety in surgical training

Current focus: Dunnington has been appointed director of a North American project to develop a curriculum for surgical skills laboratories in training programs throughout the U.S. and Canada.

Key concept: Training in surgical technique in the surgical skills laboratory prior to performing surgical procedures in the operating room

Newest idea: Implementation of a series of institutional protocols to improve communication practices in surgical training to enhance patient safety

Experimental innovation: Developing verification of proficiency modules for surgical skills, with trainees progressing through training protocols and verified as proficient by faculty with videotape performances prior to being permitted to perform procedures in the operating room setting



Randolph Elble, Ph.D.



Rodger Elble, M.D., Ph.D.



Donald Graham, M.D.



Randolph C. Elble, Ph.D.

Southern Illinois University School of Medicine, Department of Pharmacology and the SimmonsCooper Cancer Institute at SIU

Elble is an assistant professor of pharmacology at SIU and a member of the research team at the SimmonsCooper Cancer Institute at SIU. He is a co-discoverer of a new class of tumor suppressor for breast cancer, CLCA2, called clicka. CLCA2 is a protein that either slows the growth of tumor cells or kills them in response to stresses such as chromosome damage. Tumor cells must rid themselves of CLCA2 in order to survive.

Research areas: Cancer of the breast and other reproductive organs

Current focus: The role of ion current across the cell membrane in cell growth, death and cancer

Key concept: Ion current at the cell surface acts as a life-or-death signaling mechanism

Experimental innovation: Restoring CLCA2 to tumor cells that have lost it by using a modified respiratory virus so that the tumor cells die

In search of: How CLCA2 impedes tumor cell survival and uses that information to develop less toxic ways to control tumor growth

Rodger J. Elble, M.D., Ph.D.

Southern Illinois University School of Medicine, Department of Neurology

Elble is professor and chair of neurology and director of SIU's Center for Alzheimer Disease and Related Disorders. He has conducted clinical and basic research funded by various national agencies including the National Institute of Neurological Disorders and Stroke and National Institute on Aging for a total of \$10 million. Elble is president of the national Tremor Research Group and a member of the Parkinson Study Group.

Research areas: Neurodegenerative diseases that cause disturbances of motor control and mental function including Parkinson disease, essential tremor and Alzheimer's disease

Current focus: Genetic studies of patients with familial essential tremor, which affects at least five percent of people age 65 and older, as well as clinical trials of drugs that may arrest or retard the progression of Parkinson disease.

Key concept: Finding the genetic defects in patients with essential tremor is a key step to finding a cure; finding one or more agents that will retard or arrest the progression of Parkinson disease; and developing quantitative computerized devices for measuring parkinsonism and tremor

Newest idea: Computerized devices can be used in the home by patients to assess their disability enabling clinical investigators to perform clinical treatment trials with fewer patients required in studies that use clinical office based assessments and allow data to be collected more often and more quickly.

Experimental innovation: Development of a computerized device for in-home measurement of motor impairment in Parkinson disease as well as a computerized method of diagnosing and quantifying essential tremor

In search of: The genetic defects that cause essential tremor, as well as drugs that will arrest or retard the progression of Parkinson disease

Donald R. Graham, M.D.

Springfield Clinic, Department of Infectious Diseases

Graham, chair of the infectious diseases department, was the first private practitioner of infectious diseases south of Peoria. His training included work at the Centers for Disease Control. He has conducted teaching, research, public health and patient care activities throughout Illinois and in many third world locations. He has participated in more than 100 clinical trials, many of which have led to publications of advances in treatment of infections.

Research areas: Soft tissue infections, septic shock, leptospirosis, hepatitis, public health epidemiology and medical systems in third world countries;

Current focus: Streamlining treatment of complex soft tissue infections in order to achieve maximal rates of cure with the most effective transfer to outpatient therapy

Key concept: Intensive effective therapy which begins in the hospital can be coordinated successfully and quickly in the outpatient arena

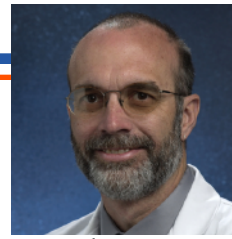
Newest idea: Early specific recognition of bacterial species will enable targeted application of antibody therapy to reduce mortality of infections

Experimental innovation: Introduction of the use of peripherally inserted central catheters (PICC) to the community of Springfield to allow outpatient therapy; use of intravenous antibiotics once weekly to achieve success equivalent to previous therapy given four times a day; development of a system to monitor infections relating to high technology therapy at home (nosohusial infections); and application of epidemiologic principles to coordinate management of community-wide outbreaks including leptospirosis, meningococcal meningitis and influenza

In search of: A molecular detection system to identify bacterial species in the human blood within one hour



Stephen Hazelrigg, M.D.



Kim Hodgson, M.D.



Patrick McKenna, M.D.

Stephen R. Hazelrigg, M.D.

Southern Illinois University School of Medicine, Department of Surgery

Hazelrigg is professor and chair of SIU's cardiothoracic surgery division, which is the largest volume provider of heart, lung and esophageal surgery in downstate Illinois and the largest academic program in the state. The division also is part of the SimmonsCooper Cancer Institute at SIU. Hazelrigg is known internationally for his numerous published research articles about thoracoscopic surgery, which he also taught about to a large number of thoracic surgeons in the early 1990s. He is co-editor of the textbook, *Minimal Access Cardiothoracic Surgery*, used worldwide and president of the Minimally Invasive Thoracic Surgery Interest Group. Hazelrigg's research has been funded for a total of \$1.2 million.

Research areas: Minimally invasive thoracic surgery, novel treatments for mitral valve disease, methods to decrease inflammation at the time of open heart surgery and genetic studies for lung cancer. The division operates a tissue bank, which allows genetic testing and storage of cells for future study, and also participates in clinical trials.

Current focus: Minimally invasive cardiac and thoracic surgery

Key concept: Ability to do surgery in older and sicker patients

Newest idea: Thoracoscopic (lung) lobectomy and thoracoscopic treatment of cardiac arrhythmias

Experimental innovation: Helped develop the early experience in thoracoscopic surgery and continues to be on the cutting edge for the surgery

In search of: Least invasive way of removing lung cancer and treating cardiac disease

Kim J. Hodgson, M.D.

Southern Illinois University School of Medicine, Department of Surgery

Hodgson is professor and chair of SIU's vascular surgery division. He also has served as president of the Society for Clinical Vascular Surgery and presently serves as a director of the Vascular Surgery Board. His leadership includes a number of national committees on the training of vascular surgeons.

Research areas: Development and perfection of minimally invasive techniques to treat vascular disorders such as life-threatening aneurysms of the thoracic and abdominal aorta, stroke-producing plaques in the carotid arteries, and limb-threatening plaques and clots in the legs

Current focus: Using new devices to treat serious traumatic injuries and dissections of the thoracic aorta as well as stroke-producing plaques of the carotid arteries

Key concept: Through the use of novel devices implanted inside blood vessels, correcting vascular disorders in a safer fashion and with fewer undesirable side effects than with the more traditional surgical methods

Newest idea: Hodgson is the national principal investigator on a FDA study at 30 U.S. sites of a new stent that dissolves after several weeks, after having provided a plaque-scaffolding function but before inciting the inflammatory response that often leads to recurrent occlusion of blood vessels with scar tissue.

Experimental innovation: Hodgson has served as the principal investigator on numerous national FDA investigational trials to evaluate the utilization of minimally invasive endovascular devices and/or drugs to prevent strokes, aneurysm rupture and limb loss

In search of: More minimally invasive and effective therapies for vascular diseases and to replace the need for surgery altogether as well as treatments designed to prevent the development of vascular disorders

Patrick H. McKenna, M.D.

Southern Illinois University School of Medicine, Department of Surgery

McKenna is professor and chair of SIU's urology division. He is the only fellowship-trained pediatric urologist in the region and has recruited four other faculty members with advanced training and expertise in adult urology, making the division the largest subspecialty urology group downstate.

Research areas: Surgical reconstruction of children born with anomalies of the urinary tract such as hypospadias and bladder exstrophy and research into surgical procedures done on the urinary tract of a fetus prior to birth.

Current focus: Use of biofeedback technology to teach children with incontinence, frequent urinary tract infections and vesicoureteral reflux

Key concept: Children with incontinence and the other conditions were born with hyperactive pelvic floor muscles. By teaching them to relax those muscles, the condition will often be resolved without the long-term use of drugs or surgery.

Newest idea: The concepts used for children are now being adapted for treatment of adult incontinence including studying the action of pelvic floor muscles during labor and delivery with the hope of discovering ways to improve the birthing process and preventing female incontinence later in life.

Experimental innovation: The biofeedback treatment for pelvic floor muscle retraining has been performed using computer games, which hold the child's attention. We also experimented with offering treatment via telemedicine connections so families do not have to travel to Springfield for treatment.

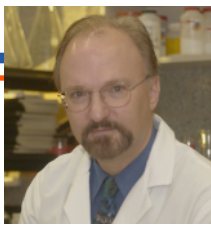
In search of: More innovative methods of correction of congenital surgical conditions in infants and children and to improve the lifestyle of children who struggle with voiding dysfunction issues



Gregory Mishkel, M.D.



Dean Naritoku, M.D.



Michael Pranzatelli, M.D.



Gregory Mishkel, M.D.

Prairie Cardiovascular Consultants

Mishkel is an interventional cardiologist with expertise in both coronary and peripheral percutaneous interventions. He is director of the cardiac catheterization laboratory at the Prairie Heart Institute, the largest cardiac program in Illinois and one of the top 10 in the U.S. as well as associate clinical professor of medicine at SIU School of Medicine. He has presented at international meetings, published in professional journals and testified before the U.S. House of Representatives on health care reform.

Research areas: The American Heart Association identified Mishkel's research on carotid stenting as one of the most significant contributions to patient care in 2005. As the principle investigator for more than 60 clinical research studies, Mishkel and his team have brought cutting-edge technology and cardiovascular care to the Midwest.

Current focus: Mishkel currently is using percutaneous techniques to occlude the left atrial appendage thereby providing an alternative to long-term anticoagulation therapy and its complications in patients with atrial fibrillation.

Key concept: He has been instrumental in creating a regional center for the treatment of refractory angina and a regional center for carotid stenting as well as PFO/ASD (patent foramen ovale and atrial septal defect) closure.

Experimental innovation: Hosting "Cardia," a locally broadcast PBS television program, highlighting advances in cardiac disease for the past four years

Dean K. Naritoku, M.D.

Southern Illinois University School of Medicine, Department of Neurology

Naritoku is a professor of neurology and director of SIU's Center for Epilepsy, which is the major referral center for the greater Illinois region for treatment of hard to manage epilepsy. He is recognized nationally and internationally for his medical research in both the laboratory and clinic and is regularly invited to present his research including at the European Congress on Epilepsy. SIU's center was one of the first in the world to implant patients with the vagus nerve stimulator, a pacemaker-like device implanted in the chest to help or prevent epileptic seizures. His research funding has totaled \$2.6 million and has been involved in the development of nearly every new seizure therapy during the past 20 years.

Research areas: Naritoku's laboratory research involves understanding how anti-seizure therapies work and what brain mechanisms are responsible for their effect. His clinical research involves the study of new drugs and new therapies for the treatment of epilepsy.

Current focus: To determine if the precognitive effects of vagus nerve stimulation can benefit humans with traumatic brain injury

Experimental innovation: Naritoku played an integral role in researching and developing a neurocybernetic prostheses (NCP), also known as a vagus nerve simulator, which was approved by the FDA in 1997. The NCP was the first completely new approach to the treatment of epilepsy in more than 100 years. He holds several patents for the use of vagus nerve simulation for enhancing memory and cognition after traumatic brain injury.

In search of: New and improved methods for preventing epileptic seizures, especially those which reduce side effects

Michael R. Pranzatelli, M.D.

Southern Illinois University School of Medicine, Departments of Neurology and of Pediatrics

Pranzatelli is a professor of neurology and pediatrics at SIU. He has established the National Pediatric Myoclonus Center at SIU and is recognized as an international authority for opsoclonus-myoclonus syndrome (OMS). Patients with this rare disorder come from many countries to Springfield for treatment. His research is providing data for the first evidence-based therapies in OMS and influencing how it is treated. His research, funded for 20 years, totals \$2.6 million.

Research areas: Childhood movement disorders and neuroimmunologic/paraneoplastic disorders, including OMS

Current focus: The neurological complication of a tumor can damage a child's brain causing it to engage in a "friendly fire" reaction. The consequence is OMS, which causes serious neurological problems, such as involuntary jerks (myoclonus), chaotic eye jerks (opsoclonus) or inability to talk, sit, stand or walk. It can cause permanent problems in controlling movement, balance and behavior and can include mental retardation.

Key concept: Pranzatelli's research has revealed significant movement of immune cells into the brain, which are caught in the act of friendly fire. The frequency of these abnormal cells strongly correlates with the severity of OMS.

Newest idea: Measuring the chemicals (cytokines) the cells secrete to communicate with each other in order to measure how active the disease is and improve treatment; preliminary research is positive: several inflammatory cytokines are increased in OMS and can be modified by treatment.

Experimental innovation: By using novel drugs, Pranzatelli's treatments are moving to more selective therapies with fewer side effects. The child's own test results are used to individualize a treatment plan.

In search of: Improved treatment and a cure for OMS



K. Thomas Robbins, M.D.



Bradley Schwartz, D.O.



Deborah Seale

K. Thomas Robbins, M.D.

Southern Illinois University School of Medicine, Department of Surgery and the SimmonsCooper Cancer Institute at SIU
Robbins is professor of otolaryngology head and neck surgery and director of the SimmonsCooper Cancer Institute at SIU. His 25-year career in academic medicine has been devoted to caring for patients with head and neck tumors. He is a past president of the American Head and Neck Society.

Research areas: Organ sparing treatment protocols for advanced head and neck cancer

Current focus: High dose intra-arterial chemoradiation for head and neck cancer; development of tissue sparing techniques for neck dissection following radiation and chemoradiation

Key concept: A drug delivery protocol, nicknamed RADPLAT, is highly effective in eliminating head and neck cancers and has been shown in a National Cancer Institute-funded multicenter trial to effectively control the disease in the majority of

patients with large volume tumors.

Newest idea: The addition of the biologic agent, Tarceva, is currently being tested to determine whether it can further improve the efficacy of the RADPLAT protocol.

Experimental innovation: The RADPLAT protocol permits the safe delivery of the most active chemotherapy agent used for head and neck cancer in a dose intensity that is 5-10 times higher than conventional protocols.

In search of: A cure for patients with advanced head and neck cancer that is well tolerated and preserves the structure and function of important bodily functions including speech, swallowing, chewing and appearance

Bradley F. Schwartz, D.O.

Southern Illinois University School of Medicine, Department of Surgery

Schwartz is associate professor of urology and director of SIU's center for laparoscopy and endourology. A fellowship-trained specialist in laparoscopic surgery with primary expertise in management of kidney stones, he has been a leader in the establishment of robotic surgery and cryosurgery in Springfield.

Research areas: Laparoscopic surgery, robotic surgery, cryosurgery and the development of surgical skills in medical students and residents; also development of instruments for use in laparoscopic and laser surgery

Current focus: Robotic surgery and cryotherapy for renal tumors as well as kidney stone disease

Key concept: The patient is the focus of all research, educational and clinical endeavors and must always benefit from our efforts, regardless of the successes or failures of clinicians, researchers and educators.

Newest idea: A novel basket used for the retrieval of urinary stones as well as the materials used in its design. Talks are underway with several companies in the area regarding development.

Experimental innovation: Schwartz holds two patents with four more applied for, all in the medical device arenas. He is currently working with several companies to further his products and research. Schwartz is also the co-founder of the Biomedical Research Initiative, a collaborative between SIU medical school and SIU Carbondale Department of Engineering. The effort provides an avenue for clinicians and basic scientists to collaborate on ideas.

In search of: Better understanding of the cause of kidney stone disease, which is a significant medical problem throughout the world

Deborah E. Seale

Southern Illinois University School of Medicine, Telehealth Networks and Programs

Seale, executive director of the SIU Telehealth Networks and Programs, has implemented a robust telehealth program at SIU, which began in 2001. The program utilizes technology to provide a real-time, visual link for interactive clinical, educational and administrative applications to rural locations throughout the state. Her grant funding at SIU totals \$1.6 million.

Research areas: Telehealth and telemedicine outcomes measurement and organizational development

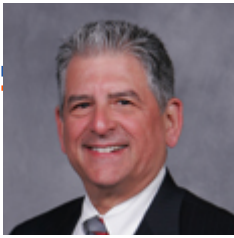
Current focus: Using advanced communication and information technologies such as two-way television and high-speed computers to diagnose and treat patients, to provide education for doctors, nurses and others and to bring people together to work on policy, administrative and health concerns

Key concept: Medical equipment can be used for patient exams for remote evaluation by a physician. Using technology to work in partnership with communities in order to build local health care capacity.

Newest idea: Provide child psychiatry consultative services to expand health care capacity in southern Illinois. Foster regional collaborations in southern Illinois, enhancing economic and community development efforts by expanding Internet access so that citizens can communicate regionally and globally.

Experimental innovation: The system uses the State's Illinois Century Network to provide audio and visual communications to expand the health care capacity in downstate Illinois.

In search of: New and improved ways to use technology to deliver health care and education to rural areas of downstate Illinois



Stephen Stone, M.D.



Linda Toth, Ph.D., D.V.M.



Gayle Woodson, M.D.



Stephen P. Stone, M.D.

Southern Illinois University School of Medicine, Department of Internal Medicine

Stone is professor of dermatology at SIU and director of clinical research for the dermatology division. He specializes in the evaluation and treatment of occupational and contact dermatitis, psoriasis and skin cancer. Stone currently serves as president of the American Academy of Dermatology, the world's largest dermatologic society, representing more than 15,000 physicians. He also is a member of several editorial boards and advisory committees.

Research areas: Stone has participated in more than 20 clinical trials involving new treatments for psoriasis, dermatitis, eczema and herpes simplex. Many of these trials have advanced the treatment of patients with skin disorders.

Current focus: Clinical trials of targeted therapies including a phase 3, multicenter study of the efficacy and safety of long-term adalimumab in patients with moderate to severe chronic psoriasis; a Raptiva, epidemiologic study of psoriasis outcomes and safety events in patients with chronic moderate to severe psoriasis; and a multicenter vehicle study of the safety and efficacy of picrolimus in seborrheic dermatitis

Key concept: Stone is studying a number of new approaches to skin diseases, especially inflammatory skin diseases including psoriasis, where targeted therapy directed at the inflammatory cell responsible for the signs and symptoms, may be more effective than immunosuppression such as with steroids.

In search of: Improved treatment of psoriasis and other inflammatory skin diseases

Linda A. Toth, Ph.D., D.V.M.

Southern Illinois University School of Medicine, Associate Dean for Research and Faculty Affairs

In addition to her leadership position at SIU, Toth also is professor of pharmacology and was previously director of SIU's laboratory animal medicine division. She oversees, coordinates and promotes SIU's involvement in sponsored research programs and establishes and maintains contact with funding agencies. Toth also maintains an active research program, with current research totaling \$4.3 million. She is a recipient of the Excellence in Research Award from the American Society of Laboratory Animal Practitioners.

Research areas: Neural-immune interactions, particularly with respect to the genetic modulation of sleep, and the roles of the neuroendocrine system and the immune response in the regulation of sleep

Current focus: Identifying genetic and physiologic causes of poor sleep and fatigue during chronic infectious and metabolic disease

Key concept: Sleep, the immune system and energy balance are intimately interrelated and the same internal substances impact all three systems. Thus, poor sleep can precipitate or exacerbate other health problems.

Experimental innovation: Identification of novel genes that influence patterns of sleep during influenza infection in mice and that are also likely to influence sleep under other conditions

In search of: New ways to improve sleep quality or alleviate fatigue in humans with chronic disease and thereby improve their total health

Gayle Woodson, M.D.

Southern Illinois University School of Medicine, Department of Surgery

Woodson is professor and chair of SIU's otolaryngology head and neck surgery division. A neurotaryngologist specializing in voice and swallowing disorders, she also is director of SIU's Voice Center at St. John's Hospital. Woodson is president of the American Laryngological Association, the oldest medical specialty society in North America.

Research areas: Laryngeal physiology

Current focus: Treatment of laryngeal (vocal cord) paralysis, restoring motion so patients can talk and breathe without a tracheotomy (hole in the neck)

Key concept: The voice box must open for breathing and close to produce speech with very precise movement, but neurological disorders can impair speech, breathing and swallowing.

Newest idea: Surgery to move a paralyzed vocal cord to open the airway, yet still allowing it to close to permit speech

Experimental innovation: Woodson was the first to use Botox injection of the larynx for a rare voice disorder known as spasmodic dysphonia. She currently treats patients from around the U.S. and even Europe. She is conducting research studies showing that vocal chords, which are paralyzed, may still have some nerve supply that can be utilized.

In search of: Treatment to completely restore normal motion to the voice box and to prevent or cure spasmodic dysphonia



Illinois Medical District at Springfield

P.O. Box 19680 • Springfield, Illinois 62794-9680 • 217-527-3908

www.springfieldmedicaldistrict.org

About the District...

The Basics

The Illinois Medical District at Springfield was created to foster development and expansion of high-quality patient care and treatments and medical research opportunities for Central Illinois and beyond.

- Established: Jan. 3, 2003, by the Illinois General Assembly
- Size: Approximately one square mile
- People employed in the District: 10,000
- Physicians: 650
- Leadership: Publicly appointed nine-member commission
- Boundaries: 11th Street on the east, Madison Street on the south, Walnut Street on the west and North Grand Avenue on the north

A Catalyst for Development

The District acts as a mechanism for development to expand patient care and integrate the discoveries of local researchers into the marketplace.

The Board of Commissioners:

- Articulates the vision of economic growth and the development of health care and medically related industries within the District
- Leads the development of a city-approved Master Plan outlining land use and development
- Seeks and accepts grants and appropriations
- Issues revenue bonds
- Collects fees from tenants for common projects

A Foundation for New Discoveries

The District's anchor institutions support a number of nationally acclaimed research activities.

- More than 750 open reviews for clinical studies
- More than \$25 million in active research funding at Southern Illinois University (SIU) School of Medicine alone
- Two institutional review boards: Springfield Committee for Research Involving Human Subjects and Fox Commercial Institutional Review Board, Ltd.
- Proven qualified subject pool

The Power of Collaboration

Existing core medical institutions and diverse health care offerings provide opportunities for collaborative partnerships and comprehensive patient care.

- Southern Illinois University School of Medicine - Nationally recognized center for training and research with more than 250 residents and fellows and 288 medical students; renowned for primary and specialty care, including cancer, surgery, memory and aging; established in 1970, it now has more than 1,300 employees and 192 physicians
 - St. John's Hospital - Named one of the nation's top 100 cardiovascular hospitals; home to the largest heart program in Illinois; 2,921 full-time employees; each year provides approximately 22,916 inpatient visits, 303,885 outpatient visits and 60,048 emergency visits; established in 1878
 - Memorial Medical Center - Third largest heart program in Illinois; nationally recognized Plastic & Reconstructive Medicine program; more than 3,000 employees; each year provides approximately 24,300 inpatient visits, 204,300 outpatient visits and 60,000 emergency visits; established in 1897

Illinois Medical District at Springfield (continued)

- Springfield Clinic - Major multi-specialty physician group with a large presence on the Memorial Medical Center campus; 175 physicians and 1,400 employees; each year provides approximately 800,000 patient visits
 - Prairie Cardiovascular Consultants - The largest cardiology specialty group in Illinois with 43 specialists serving 28 clinics throughout central and southern Illinois
 - The Clinical Research Site at Memorial Medical Center - More than 600 clinical trials approved; major categories of research include oncology, cardiac, vascular, orthopedic, infectious disease and neurology
 - Prairie Heart Institute at St. John's Hospital - Nationally recognized research program on cardiovascular medicine and related technology; approximately 70 active research trials; serves central and southern Illinois through a partnership with 28 hospitals and clinics

Commitment from Within

Major institutions are making significant investments within the District.

- The SimmonsCooper Cancer Institute at SIU School of Medicine: \$21.1 million complex for cancer research and care scheduled to open in 2007, creating initially 50 new jobs
- Prairie Diagnostic Center: \$14.6 million outpatient center specializing in cardiac care, fostering a unique partnership between the two major hospitals and Prairie Cardiovascular Consultants' Prairie Vascular Institute and Vein Clinic; construction will be complete in 2006
- Springfield Clinic 1st: Memorial Medical Center's new \$27 million office building; construction was completed in the summer of 2006, housing 70 physicians and 400 employees

Living and working in the Greater Springfield Area

As the Illinois State Capital, Springfield is centrally located to serve a sweeping region of downstate Illinois and portions of neighboring states.

- Illinois State Capital: 17,000 government employees
- Springfield population: 113,586
- Population of eight surrounding counties: 319,000
- Median household income: \$39,388
- Proximity to metropolitan areas: Chicago - 175 miles; Indianapolis - 186 miles; St. Louis - 85 miles
- Transportation: Abraham Lincoln Capital Airport, servicing daily flights to major cities via commercial carriers; adjacent to major interstate routes I-55 and I-72; Greyhound and Amtrak service
- Major attractions: Abraham Lincoln Presidential Library and Museum; Abraham Lincoln Home National Historic Site; Abraham Lincoln Tomb and Monument; Lincoln's New Salem State Historic Site; the Dana Thomas House designed by Frank Lloyd Wright; Old State Capitol; the Lincoln Memorial Gardens; the Illinois State Capitol Building; Executive Mansion; and the Illinois State Fair
- Arts and Entertainment: Hoogland Center for the Arts; The Illinois Symphony Orchestra; the Springfield Ballet Company; the Springfield Muni Opera; Sangamon Auditorium at the University of Illinois at Springfield; Old Capitol Art Fair; Route 66 Fall Festival; New Salem Country Opry; Springfield Theatre Center; Theatre in the Park at New Salem; and Springfield's Summer Serenades
- Recreation: Lake Springfield; Springfield Park District; 12 area golf courses; Panther Creek State Fish & Wildlife Area; Adams Wildlife Sanctuary; Henson Robinson Zoo; Madigan State Park; Sangchris Lake State Park; and the Springfield Jr. Blues Hockey Team
- Higher Education: University of Illinois at Springfield; Benedictine Springfield College in Illinois; Lincoln Land Community College; Southern Illinois University School of Medicine; and Robert Morris College

For more information, please call 217-527-3908
or visit www.springfieldmedicaldistrict.org



Sangamon County Medical Society

230 W. Carpenter St.
Springfield, IL 62702
217.525.0765
217.525.0334 fax
www.scmsdocs.org