Welcome to the Spring Update for the Department of Neurological Surgery at the University of Wisconsin School of Medicine and Public Health. This has been an extremely productive time for the department in every way—clinically, and in research and teaching. The purpose of this new communication is to inform—and thank you for your support and contributions to the department over the years.

In these pages, you will read: summaries of our research labs and studies; the successful recruitment of Dr. Wendell Lake, who will be heading our functional program and expanding our epilepsy care program; a profile of one of our bright residents, explaining how research and global health have helped shape her career and improve her development as a neurosurgeon; and more.

Our departmental goals are many but our priorities can be summarized in two simple statements:

1. We dedicate ourselves completely to the needs of the people who come to us with neurosurgical problems.
2. We provide the best care in the world and constantly strive to improve.

This is the basis of our research and our teaching both here and worldwide. We are grateful for your involvement and will continue to keep you informed of our good work.

Robert J. Dempsey, MD, FACS
Chairman and Manucher J. Javid Professor of Neurological Surgery
Department of Neurological Surgery, University of Wisconsin
Chairman, Foundation for International Education in Neurological Surgery
Chair, Coordinating Committee for International Initiatives of the WFNS
Past President, Society of Neurological Surgeons

NOTES FROM OUR CHAIRMAN

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EVENTS AND ACTIVITIES

Fresh Start: Living Well with Brain Injury, Stroke and Aneurysm
This group meets every two months to support patients and families with discussions, a sharing of ideas and guest speakers. Meetings are held at the Fitchburg Library, 6:30–8 pm. Our 2015 dates are: June 18, August 20 and October 15.
Call (608) 264-4698 for more information.

Adult Brain Tumor Support Group
This support group meets on the third Tuesday of every month (times vary). Contact Lori Hayes at (608) 265-1192 for details.

This full-day series of professional lectures hosted by Dr. Amgad Hanna establishes UW’s leadership in neurosurgical techniques for brachial plexus injuries and other nerve-related conditions.

WELCOME OUR NEW STAFF

Wendell B. Lake, MD, has joined our faculty as an assistant professor of neurological surgery and director of adult functional and stereotactic neurological surgery. He comes to us after completing his fellowship in functional neurosurgery at Vanderbilt University Medical Center in Nashville, TN. His neurological residency was at the University of Wisconsin Hospital and Clinics.

Dr. Lake specializes in the diagnosis and treatment of disorders of brain function, including Parkinson’s disease, movement disorders and deep brain stimulation (DBS). In addition, he will treat a broad range of general neurological disorders. Dr. Lake will see patients at the UW Health Neurological Surgery Clinic and will perform surgery at UW Hospital and Clinics and Meriter Hospital beginning this summer.

Sara DeTienne has been named director of development for the Department of Neurological Surgery at the UW School of Medicine and Public Health. Sara is an accomplished development professional who understands the importance of philanthropy in supporting research, education and patient care. Because federal grants for basic research are decreasing, and departmental funds are not enough to support basic and translational research, philanthropic support is essential to maintain and enhance excellence to improve the quality of life for people with neuroscience disorders. Sara’s primary responsibilities are to build relationships with individuals, foundations and corporations in supporting the Department of Neurological Surgery.

To learn more about funds or to donate online, visit neurosurgery.wisc.edu/make-a-gift or contact Sara at Sara.DeTienne@supportuw.org or (608) 890-1519.

Your privacy is our top priority. If you do not wish to receive communications from us, please send an email with your name and address to uwhealthoptout@uwhealth.org or call us at (844) 300-2002. If you are a patient at UW Health, you will continue to receive information related to your care. Thank you.
RESEARCH EXCELLENCE

The productivity of our faculty in basic and clinical research is exceptional and ranks among the best in the country in the field of neurosurgery. Collectively, we have nine research labs working on a host of projects to improve treatment for patients with brain, spine and peripheral nerve disorders, including malignant tumors, stroke and spinal cord injury. As a group, we published numerous papers in 2014 (two of which made the cover of Neurosurgery).

Drs. Medow and Brooks are working to develop cutting-edge medical devices to ultimately improve patients’ quality of life. Dr. Justin Williams is a leader in the field of brain-computer interaction through his work in the Neural Interface Technology Research and Optimization (NITRO) Laboratory. A part of the Department of Biomedical Engineering, Dr. Kuo continues his award-winning work in basic tumor biology and Dr. Dempsey leads a nationally recognized laboratory in stroke research. Dr. Iskandar is recognized as a leader in the field of epigenetics, being among the first to recognize the effects of metabolic changes being passed on from mother to child. I have been fortunate to participate in the development of a national spine registry that will provide information for guiding spine care across the spectrum of available treatments.

We are grateful to be funded through competitive grants and private donations. Despite our success, however, we continue to face gaps in funding for both junior faculty and for senior faculty between projects. We greatly appreciate your support in allowing our scientists and doctors to work continuously to address patients’ needs. Thank you for helping to carry the Clinical Research Program coordinates the research which involves direct contact with patients to improve our standards of care. It is a branch of health care science that determines the safety and effectiveness of medications, devices, diagnostics products and treatment regimens.

Clinical research in neurosurgery looks at each aspect concerned with the prevention, diagnosis, treatment and rehabilitation of disorders of the central and peripheral nervous system and extra-cranial cerebrovascular system.

In Fall 2013, our department became one of 25 Regional Coordinating Centers for Stroke Research through Wisconsin Stroke Net (WSN), which is part of the National Institutes of Health (NIH). Stroke is the fourth-leading cause of death and the leading cause of adult disability in the United States. Our goal is to improve the lives of our patients through collaborative research across the stroke spectrum. There are currently several studies that look at the pathophysiology of a recurrent stroke.

The Department of Neurological Surgery is very active not only in stroke research but also in head trauma, spinal cord injury, brain tumor, nerve regeneration and functional recovery in patients affected by spinal cord injuries.

A LOOK AT OUR LABS

Mustafa K. Baskaya, MD
Neuroanatomical and skull base lab: Surgeons increase their skills, techniques and confidence enabling them to better employ safer, more innovative approaches to access the skull base anatomy during difficult cerebrovascular and tumor removal surgeries.

Cerebrovascular lab: The focus is to understand the cellular and molecular mechanisms of stroke-related injury and stem cell-mediated repair with the goal of developing effective therapeutic approaches to reduce damage and enhance recovery.

Amgad S. Hanna, MD
This lab explores innovative ways to locally deliver drugs to enhance peripheral nerve regeneration and functional recovery in patients affected by spinal cord injuries.

John S. Kuo, MD, PhD
These research labs study the cancer stem cell (CSC) sub-population of brain tumors working toward developing new therapies specifically targeting and eradicating CSCs to significantly improve patient survival and quality of life.

Joshua E. Medow, MD
The focus in this lab is on biomedical engineering and mathematical approaches to solving major medical issues, especially with critically ill patients.

Understanding the biology of neural stem cells may help us to increase the production of new neurons in the patient brain, and support the formation of new connections to recover neurological functions after stroke.

Robert J. Dempsey, MD, FACS
This cerebrovascular lab examines the molecular mechanisms of stroke and arteriooclerosis to better clarify the process of brain injury repair and recovery and develop more effective treatment strategies, especially for “silent strokes.”

Regenerative neurosurgery lab: This lab develops new ways to understand and modify the genetic and chemical factors which influence repair of the brain injured by stroke, trauma or degenerative disorder.

Bermans J. Iskandar, MD
Research in this lab is conducted to improve the diagnosis and prognosis of pediatric congenital brain and spinal cord anomalies, especially involving the growth and regeneration of nerves in the developing brain, lowering risk and improving healing injuries.

Daniel K. Resnick, MD
The goals of this lab are understanding the pathology associated with spinal cord injury and developing novel treatments to promote functional recovery and alleviate neuropathic pain.

Justin Williams, PhD
The goals of this lab are developing durable and safe new devices for recording from, and stimulating, neural tissue. A brain-computer interface or other neural prosthetic communication device may benefit patients with motor disabilities.

Daniel K. Resnick, MD
Professor and Vice Chairman for Academic Affairs, Residency Program Director, Department of Neurological Surgery, Professor, Department of Orthopedics and Rehabilitation Medicine, Co-Director, Spine Surgery Program

The focus in this lab is on biomedical engineering and mathematical approaches to solving major medical issues, especially with critically ill patients.

Understanding the biology of neural stem cells may help us to increase the production of new neurons in the patient brain, and support the formation of new connections to recover neurological functions after stroke.
☐ I/We wish to make an investment in the work of the Department of Neurological Surgery.

GIFT DESIGNATION
☐ Neurological Surgery General Fund (#112588200)
☐ Neurosurgery Research and Education: Cerebrovascular, Stroke, Aneurysm, Skull Base Fund (#112582512)
☐ Neurosurgery Tumor Research and Education Fund (#112583458)
☐ Pediatric Neurosurgery Research and Education Fund (#112584868)
☐ Neurosurgery Spine and Spinal Cord Research and Education Fund (#112582060)
☐ Functional and Epilepsy Research and Education Fund (#112583459)
☐ Neurosurgery Resident Education and Research Fund (#112587886)

PAYMENT OPTIONS
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   You will receive a receipt for your gift.

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☐ I/We pledge $ ________________ per year to be paid over ______ years for a total of $ _______________, beginning in _______________ (MONTH/YEAR) and ending in _______________ (MONTH/YEAR). Please send me an annual pledge reminder in _______________ (MONTH).

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   ☐ I have enclosed my matching gift form.
   ☐ I will initiate the matching gift process on my company’s website.

ONLINE OPTION
Visit neurosurgery.wisc.edu/make-a-gift to donate online.
Thank you for supporting the mission of the Department of Neurological Surgery.