Message From the Chairman

I am fortunate to be surrounded by an extraordinary group of talented individuals. When we look at what neurological surgery has accomplished during the past year, I am again impressed with how productive and creative we can be in our academic and clinical activities. We have built a team that powers a clinical dynamo. For example, we perform the majority of neurosurgical procedures in the tri-county metro area. We have renowned programs in several disciplines of neurosurgery. At the same time, we have built a basic research program in the area of pain physiology, which rivals the best in the world.

Things are changing in the department. Malcolm Gladwell, in his book The Tipping Point, makes a case for the epidemiology of change. Gladwell asserts that change is a sociological phenomenon, dependent on the concurrence of the right people in the right place at the right time. The system has to be in a critical point of balance, where modest effort can lead to great change. The process requires many different players, from “mavens” to “connectors” to “salesman,” all of whom help to spread the epidemic of change. I believe that our department has now reached its own “tipping point” of sorts, in that we are ready to expand our capabilities and become a major player in the field of neurosurgery research. We are at this juncture because much of the infrastructure is now in place, both inside the department and at OHSU, to support this change. This expansion is also in harmony with the general direction of OHSU and the “Oregon Opportunity,” put in place by our president, Peter Kohler, M.D. In short, OHSU wants to be, and is becoming, one of the major biomedical research institutions in the country. I want neurological surgery to be part of this wave of change.

Mavens are persons with extraordinary, in-depth knowledge in a particular area, and the desire, even compulsion, to share that knowledge. We have many mavens at OHSU, some in our own department. OHSU neuroscience is particularly well endowed with mavens. Connectors bring people together. Valerie Anderson, Ph.D., director of neurological surgery clinical research, and Mary Heinricher, Ph.D., newly appointed neurological surgery basic science director, are both connectors of the first order. New additions to the OHSU faculty, most notably, Richard Traysman and Patricia Hurn, M.D., both recently recruited from Johns Hopkins University, will be the mentors of future translational investigators. Our salesman at OHSU include a spectrum of individuals from Daniel Dorsa, Ph.D., vice president of research, to Randy Petty in the alumni and development office. The development of a world-class research operation in our busy department will take time and resources. It will also require a shift in the way we recruit new faculty and staff. Ultimately, my goal is to build the research enterprise, while maintaining steady growth in the clinical operation. Part of this effort will be to recruit and hire a new administrator in charge of research and development. The person who fills this position reports to Bryce Helgerson, M.H.A., and will coordinate existing and new grants and contracts; actively seek new Requests for Applications (RFAs) for research growth and support; coordinate an application for a research-training grant; and, in conjunction with the alumni and development office, will look for new opportunities to endow the research effort in the department.

2003 will be a banner year for OHSU, and for the Department of Neurological Surgery. I wish you every happiness and success in the coming New Year!

Kim J. Burchiel, M.D., F.A.C.S.
Most people think of neurosurgery as brain surgery — but it is much more!

It is the medical specialty concerned with the diagnosis and treatment of disorders of the brain, spinal cord and spinal column, and peripheral nerves within all parts of the body.

Disorders of the brain, spine and nerves commonly treated by neurosurgeons include:

- Aneurysms
- Carotid artery disease
- Carpal Tunnel syndrome
- Cerebral palsy
- Cervical spine disorders
- Chronic pain
- Craniosynostosis
- Epilepsy/Seizure/Convulsion
- Head injury
- Herniated disc
- Hydrocephalus
- Low back pain
- Lumbar spinal stenosis
- Parkinson’s disease
- Pituitary tumors
- Sciatica
- Spina bifida
- Spinal cord injuries
- Stroke
- Surgery for chronic pain
- Trigeminal neuralgia
- Tumors of the brain and spinal cord.

The School of Medicine’s Department of Neurological Surgery presently has seven faculty neurosurgeons, four faculty research scientists and 10 residents in training, with two appointed in years 1 and 2, and one appointed every other year. At any given time, six residents are assigned to clinical neurosurgery, one is in a basic clinical neuroscience rotation and one is in a research year. Also assigned to the clinical service are two surgical interns, two clinical neuropsychologists, a nurse practitioner, two nurse clinical specialists, and several research nurses, assistants and associates.

The Department of Neurological Surgery comprises six divisions and performs approximately 3,000 neurosurgical procedures each year, offering specialized surgical services for many common neurological disorders.

Neurosurgical specialties include:

- Neuro-oncology and skull base surgery
- Neurovascular surgery
- Spine surgery
- Neurotrauma care
- Epilepsy surgery
- Interventional neuroradiology
- Stereotactic computer-assisted neurosurgery
- Movement disorder surgery
- Pain surgery
- Peripheral nerve reconstructive surgery
- Pediatric neurosurgery

Neuroscience research includes:

- Study of pain perception and regulation (laboratory and patient)
- Surgical treatments for epilepsy
- Effects of deep brain stimulation on the tremors associated with Parkinson’s disease and other movement disorders (adults and children)
- New treatments for brain tumors
- New treatments for disc disease
- Use of new intraoperative MRI technology
- Neurotrauma research group — innovative approaches to treatment and rehabilitation for survivors of traumatic brain injury
- Interventional neuroradiology — a minimally invasive approach to the treatment of diseases of the brain and spine

Neurosurgeons and neuroscience researchers in the Department of Neurological Surgery are committed to expanding the neurosurgical and neuroscientific options available to OHSU’s patients and to improving patient outcome.

You can help the Department of Neurological Surgery meet its mission and commitment. Please see how on the back page of this issue.
Visiting Professor Lecture Series

The Visiting Professor Lecture Series features some of the most outstanding medical professionals in the field of neurological surgery. Guests are invited to present cases of interest for discussion. The Department of Neurological Surgery and its faculty were pleased to invite the following visiting professor.

Iain H. Kalfas, M.D. is a neurosurgeon specializing in spinal surgery. He is experienced in the management of a variety of complex spinal disorders including tumors, fractures and deformities. He is involved in the development of numerous spinal implants as well as image-guided navigational technology, which he routinely uses for complex spinal reconstructive surgeries.

Kalfas is currently head of the section of spinal surgery in the Department of Neurosurgery at the Cleveland Clinic Foundation. He graduated from Youngstown State University in 1980 and attended the Northeastern Ohio Universities College of Medicine in association with his undergraduate studies, receiving his medical degree in 1982.

Kalfas completed his neurosurgical residency at the Cleveland Clinic Foundation in 1988, and then completed a fellowship in spinal surgery at the Barrow Neurological Institute, Phoenix, Ariz. He joined the staff of the neurosurgery department of the Cleveland Clinic Foundation in 1989.

Kalfas has published extensively in numerous neurosurgery and spinal surgery journals and textbooks. He holds editorial positions with several professional journals as well as two spine-related Web sites. He actively participates in the training of neurosurgical residents and is co-director of the Cleveland Clinic Spine Fellowship. Kalfas is also recognized for his contributions to the education of other practicing surgeons through his participation in domestic and international spinal surgery courses and workshops. Kalfas discussed Image-Guided Spinal Navigation: Principles and Clinical Applications when he visited OHSU on Saturday, Aug. 17, 2002.

Community Outreach

The Department of Neurological Surgery will have a display at Brain Awareness Week 2003: The Healthy Brain, and Kim Burchiel, M.D., will present the Marquam Hill Society Brain Awareness Week Lecture on March 12, 2003, at OMSI and discuss Parkinson’s disease and Deep Brain Stimulation.

Brain Awareness Week is the creation of the Dana Alliance for Brain Initiatives and the Society for Neuroscience, national organizations dedicated to finding the cause and cure for neurological diseases and disorders. A chapter of the Society for Neuroscience has recently been formed in Oregon at OHSU. In 2003 the many activities associated with Brain Awareness Week will build on the theme of the healthy brain, with a variety of opportunities for different groups/ages to interact with brain science, brain scientists and brain science educators.

The event will kick off with a National Public Radio “Talk of the Nation Science Friday” broadcast hosted by Ira Flatow.

Brain Awareness Season is an outreach effort of the Science Outreach and Resources (SOAR) Committee, which was formed to expand the scope of OHSU’s science education programs, including Brain Awareness Week. SOAR brings scientists from different departments together to engage in educating the public. The committee is unique in its composition representing all parts of the healing, research, teaching and service mission of OHSU. Shirley McCartney, Ph.D., represents neurological surgery on the committee.

Alyn Charity Bike Ride Jerusalem to Eilat

Neurological surgery was pleased to sponsor Zvi Israel, M.B.B.S., as he took part in the 2002 “Alyn Hospital Wheels of Love Bike Ride” from Jerusalem to Eilat. The ride covered more than 400km in five days, regardless of religion or ethnic origin and is the only facility of its kind in Israel.

Israel, originally from London spent one year as an instructor in neurological surgery at OHSU. He is married to Juliette, and they have five children: Tzofia, Moriah, Yehoshua, Ella and Naomi. Naomi, 2, is currently being treated at Alyn for cerebral palsy. Israel is presently a neurosurgeon at Hadassah University Hospital, Jerusalem, Israel.

Johnny B. Delashaw Jr., M.D.
Research News

Less Invasive Brain Aneurysm Treatment Offered at OHSU Proved Superior to More Invasive Surgery

OHSU is one of a handful of institutions across the country that offer aneurysm treatment using endovascular coils. During the past decade, approximately 350 OHSU Hospital patients have had coils implanted for the treatment of their aneurysms.

“Currently, the standard of treatment for a burst aneurysm is neurosurgical clipping. While this procedure is effective, it involves a craniotomy, or temporary removal of a section of the skull, which often results in longer recuperation periods,” said Stanley L. Barnwell, M.D., Ph.D., associate professor of neurological surgery, and diagnostic and interventional radiology in the OHSU School of Medicine. “By comparison, coils are less invasive, hospital stays are typically reduced, and as these new study results show patient outcomes are significantly better.”

For more information, go to www.ohsu.edu/news/102502brain.html.

Artificial disc development

A device — called the SpineCore Disc — is being developed by a group of OHSU physicians, including Randall Chesnut, M.D., director of neurotrauma and neurosurgical critical care and Robert Hart, M.D., assistant professor, orthopaedics/rehabilitation.

The SpineCore Disc device incorporates a springy mechanism, which provides for the similar up-and-down movements made possible by a healthy disc, and, thus, spares pressure on the adjacent disc segments.

The device will eventually be offered as an alternative to spinal fusion; however, both Hart and Chesnut caution “further research studies are required to develop an accurate picture of the advantages and disadvantages of the use of artificial discs.”

Brain Aneurysm

An aneurysm is a small bubble that forms on the wall of an artery, a blood vessel that carries blood to the brain. The aneurysm has a thin wall, compared to the thicker wall of a normal brain artery. This thin walled bubble is prone to rupturing.

Causes: An aneurysm is the result of a weakness in the wall of a blood vessel. High blood pressure and smoking are two factors that may cause weakness in the wall of an artery, leading to aneurysms. Some brain aneurysms seem to occur in families, and there may be a genetic cause. Most aneurysms occur without any known cause. Other than controlling high blood pressure and stopping smoking, there is little a patient can do to help stop the growth and formation of aneurysms.

Signs and symptoms: Unless you have had imaging studies of your brain showing the growth of an aneurysm, physicians cannot tell how long an aneurysm has been present. It may have been there for years, or as short a several months. No one really knows. When an aneurysm enlarges it usually occurs over a fairly long period of time, weeks or months, sometimes years. The signs and symptoms of an enlarging aneurysm may be slow to develop. If the nerves to your eye are affected, you may notice decreased vision in one eye, or occasionally both. Double vision is fairly common. Some patients complain of unusual headaches. Often these headaches occur behind one of their eyes. Typically these headaches are not as severe as when an aneurysm bleeds, but still painful. Depending on the location of an aneurysm, weakness in the arms, legs and hands or on one side of the body may occur.

Care: The treatment of aneurysms using coils was first described around 1990. Before that time small balloons were placed in aneurysms and then inflated, leading to closure of the aneurysm. This technology was commonly used in the Soviet Union, where surgery for aneurysm was not particularly successful. That technology has been replaced by the currently available coils. The neurointerventional service at OHSU, under the directions of Stanley Barnwell, M.D., Ph.D., and Gary Nesbit, M.D., was one of 10 centers in the United States involved in the initial trial determining the safety and effectiveness of treating aneurysms with coils. This trial began at OHSU in 1992 and approval by the FDA for this therapy was given in September 1995. At OHSU, as of November 2002, more than 350 embolizations of aneurysms using coils have been performed. Experience with this technique is the most critical factor leading to a successful treatment.

Research: There are many medical device companies working on new therapies for aneurysms. Some of these therapies utilize stents, glues and new types of coils. The Dotter Interventional Institute at OHSU is actively involved in researching aneurysm and stroke therapy.
John Raaf Day 2002

The Department of Neurological Surgery is proud to recognize the accomplishments of John Raaf, M.D., (1905 - 2000), widely regarded as the father of neurosurgery in the state of Oregon. Raaf advanced the profession during his years as chairman of neurosurgery at Good Samaritan Hospital by creating an outstanding resource for the neurosciences community in the Pacific Northwest.

The 12th John Raaf Lecturer

Charles B. Wilson, M.D., is professor emeritus of neurological surgery at the University of California, San Francisco. Wilson began his medical training at Tulane University School of Medicine. Wilson also completed his neurosurgery residency at Tulane and joined the university faculty there with joint appointments in pathology and neurosurgery. Wilson’s work then took him to Louisiana State University School of Medicine and University of Kentucky School of Medicine, where he pursued a research interest in malignant gliomas. In 1968 Wilson joined the faculty of UCSF as professor and chairman of neurological surgery. In 1971 he was involved in establishing a laboratory for the study of brain tumors, the Brain Tumor Research Center (BTRC), which the NIH has funded since 1971. The center treats more than 500 patients annually, and contributes immeasurably to basic and applied research in neuro-oncology. Wilson has a special interest in pituitary tumors and has performed more than 3,300 trans-sphenoidal procedures.

In 1997 Wilson became a director at the Institute for the Future, where he specializes in the future of emerging medical technologies, and the impact of genetics and genomics on health and health care. The New Yorker Magazine summed it up best perhaps, “Charlie is a rare superstar … with talents the likes of Wayne Gretzky and Yo-Yo Ma.”

Neurological surgery was pleased to welcome him as the 2002 Raaf Lecturer.

The New Yorker Magazine summed it up best perhaps, “Charlie is a rare superstar … with talents the likes of Wayne Gretzky and Yo-Yo Ma.”

Past John Raaf Lecturers:
- Lawrence F. Marshall, M.D. 1991
- John A. Jane, M.D., Ph.D. 1992
- Julian T. Hoff, M.D. 1993
- Albert L. Rhoton Jr., M.D. 1994
- Martin H. Weiss, M.D. 1995
- Robert H. Wilkins, M.D. 1996
- Donlin M. Long, M.D., Ph.D. 1998
- Robert Grossman, M.D. 1999
- William A. Buchheit, M.D. 2000
- Russel Hugo Patterson Jr., M.D. 2001

Wilson toured OHSU and Doernbecher Children’s Hospital on Friday, Oct. 25 and met with faculty and residents. On Saturday, Oct. 26 Wilson presented the Raaf Lecture, “A 10-Year Forecast of Health and Health Care.” This was followed by a resident and faculty research presentation. ♦
In order to maintain the broadest availability of specialty pediatric neurosurgical care for all patients, Susan Durham, M.D., and Nathan R. Selden, M.D., Ph.D., have elected to share a single neurosurgical practice.

The arrival of Durham allows the continued expansion of neurological surgery’s interdisciplinary care model within pediatric neurosurgery. Durham has a special interest in pediatric craniofacial disorders, including cranial synostosis. Together with Wayne Ozaki, M.D., of pediatric plastic and reconstructive surgery, and in conjunction with the Child Development and Rehabilitation Center (CDRC), Durham directs neurological surgery’s craniofacial disorders clinic. Durham also maintains both research and clinical expertise in pediatric head injury.

Skull deformities are the single most common reason for referral of new patients to the pediatric neurosurgeon. The great majority of deformities are managed non-surgically. A basic understanding of the causes and treatments of infantile skull deformities enables the primary physician to not only make an appropriate referral in a timely fashion, but also to shape parental expectations appropriately.

An interdisciplinary team from pediatric neurosurgery and craniofacial plastic surgery at OHSU treats cranial synostosis and other craniofacial disorders, including Crouzon’s and Apert’s syndrome. Support is also available from the many specialists participating in the Craniofacial Disorders Clinic, CDRC, Doernbecher Children’s Hospital.

The team comprises:
- Nathan R. Selden, M.D., Ph.D., head, Division of Pediatric Neurosurgery
- Susan Durham, M.D., director, Pediatric Neurotrauma
- Wayne Ozaki, M.D., D.M.D., head, Division of Craniofacial Plastic Surgery
- David T. Wheeler, M.D., assistant professor, Pediatric Ophthalmology
- Henry Milczuk, M.D., head, Division of Pediatric Otolaryngology
- Sarah Layman, A.R.N.P., nurse practitioner, Pediatric Neurosurgery
- Johnny B. Delashaw, M.D., professor, Pediatric Otolaryngology

For more information contact the Craniofacial Disorders Clinic, CDRC, Doernbecher Children’s Hospital at 503 494-8088.

Neurological Surgery Research Studies

A prospective multicenter investigation of the safety and efficacy of the ray-threaded fusion cage cervical device in anterior cervical interbody fusions. Principal investigator: Edmund H. Frank, M.D.

Open-label, multicenter, clinical trial of Glaidel as a component of combination therapy (tumor resection with Glaidel implant fractionated radiation therapy and stereotactic radiosurgery) in patients with newly diagnosed malignant glioma. Principal investigator: Johnny B. Delashaw, M.D.

Randomized, third-party blinded, multicenter clinical trial to determine the safety and effectiveness of OxiPlex™/SP Gel for the reduction of pain and symptoms following lumbar disc surgery. Principal investigator: Edmund H. Frank, M.D. Co-investigator: Johnny B. Delashaw, M.D.


Open-label, dose escalation, feasibility study to investigate the safety and efficacy of Lioresal® Intrathecal (baclofen injection) in the treatment of chronic, severe tinnitus: Principal investigator: Kim Burchiel, M.D. Co-investigators: Valerie C. Anderson, Ph.D., William Martin, Ph.D., and Baker Shi, M.D., Otolaryngology, Head and Neck Surgery.

A pilot study of the safety and effectiveness of intrathecal hydromorphone versus morphine for the management of chronic nonmalignant pain. Principal Investigators: Kim Burchiel, M.D. and Valerie C. Anderson, Ph.D.

A pilot study of intrathecal opioids for the management of chronic neuropathic pain. Principal investigators: Valerie C. Anderson, Ph.D. and Kim J. Burchiel, M.D.

Subthalamic versus pallidal stimulation in Parkinson’s disease: A prospective randomized study. Principal investigator: Kim J. Burchiel, M.D.

Digital motor control in essential tremor. Principal investigator: Valerie C. Anderson, Ph.D. Co-investigator: Kim J. Burchiel, M.D.

For more information contact the neurological surgery clinical trials coordinator at 503 494-9546 or nsg@ohsu.edu.
the National Institutes of Health. Selden receives an award of $25,000, which supplements his NIH K08A award.

Resident Award
Raymond Tien, M.D., Ph.D., received the Western Neurosurgical Society Resident Award at The Western Neurosurgical Society 48th Annual Meeting, Oct. 11 to 15, 2002, for his presentation on Intracranial Stenting: OHSU Experience.

Tien also presented this research work at the 2002 Annual Raaf Day.

Spring Brain Conference
The Spring Brain Conference was founded in the fall of 1989 to foster interdisciplinary communication among scientists studying different aspects of brain function. Mary Heinricher, Ph.D., will present the Plenary Session “How Morphine Kills Pain: The View from the Brainstem” at the Fourteenth Annual Spring Brain Conference, March 12-15, 2003, Sedona, Ariz.

www.springbrain.org

Pediatric Head Injury Guidelines
Currently, Lippincott Williams & Wilkins (LWW) is working with the neurotrauma research group at OHSU and other contributing authors to publish the Guidelines for the Acute Medical Management of Severe Brain Injury in Children and Adolescents concurrently in three journals.

Congratulations
The Department of Neurological Surgery would like to extend its congratulations to the following employees:

Aclan Dogan, M.D., and his wife, on the birth of their son, Alp Emre in September 2002.

Matthew Hunt, M.D., and his wife, Heather, on their marriage in November 2002.

Neurosurgery residents and faculty on consistently exceeding the threshold in one or more physician indicators, consistently over a 3 week period during a recent 6 week OHSU quality management inpatient focus study.

Steven Toms, M.D., M.P.H., on his appointment to the Cleveland Clinic Foundation, Ohio. Toms departed OHSU Dec. 13 2002.

Patricia Miller, neurological surgery employee of the year!

New Employees
The Department of Neurological Surgery would like to welcome the following employees:

Monique Sebunia-Lahti joins neurological surgery from diagnostic imaging services primarily as a patient care coordinator for pediatric neurosurgery. Sebunia-Lahti supports the division and lends input and experience to improve patient access within a shared, multi-disciplinary clinic environment.

Sharon Kinser joins neurological surgery from the university medical group where she worked for 4 1/2 years as the provider relations representative for all the OHSU surgery departments. In her new position Kinser will work on all issues relating to enhancing reimbursement.

Virginia Caudill joins neurological surgery from liver transplant and presently has the arduous task of archiving all 1999 and 2000 neurosurgery charts! Caudill desires permanent, part-time work when this task is completed.

Submit your information news, articles and ideas for the June 2003 issue of OHSU Neurotransmitter to Shirley McCartney, Ph.D., at mccartns@ohsu.edu.

ALUMNI
Neurological surgery would like to hear from YOU!

NOT Just Work — 2002 Holiday Party!

Neurological Surgery Santas... Kim Burchiel, Jonathon Carlson, Raymond Tien, Michael Sandquis, Aclan Dogan, Matthew Hunt and Justin Cetas

Susan Durham and Bryce Helgerson
You Can Help the Department of Neurological Surgery Meet Its Mission

The Department of Neurological Surgery has a variety of programs that support research and resident/fellow education. Listed below are brief descriptions of the different activities supported by these funds:

- **Raaf Chair:** This endowed chair supports research in neurological surgery and neurosciences.

- **Paxton Fellowship:** This endowed professorship will support the development and implementation of the most advanced and innovative methods in neurological surgery education. This special professorship will be filled by an academic neurological surgeon with a national reputation for education, innovation and state-of-the-art approaches to neurosurgical teaching techniques.

- **Neurosurgical Educational Gifts:** These gifts provide support for numerous endeavours, in keeping with the Department of Neurological Surgery's mission statement: emphasizing innovation and the dissemination of new knowledge; development of curricula and an environment that stimulates the spirit of inquiry; and research into the prevention and cure of neurological disease and disability.

- **Campagna Professorship:** This professorship provides support for a pediatric neurosurgical professorship and promotion of research in pediatric neurosurgery, and maintenance of the highest level of care for children with neurosurgical problems.

If you would like to make a tax-deductible contribution to any of these funds, please make your check payable to “OHSU-Dept. of Neurological Surgery” and submit it to Bryce Helgerson at the address above, along with a copy of this page and the fund(s) you wish to contribute to checked off. You will receive a letter stating that you have made a tax-deductible donation as proof of your charitable giving.