Neurotransmitter

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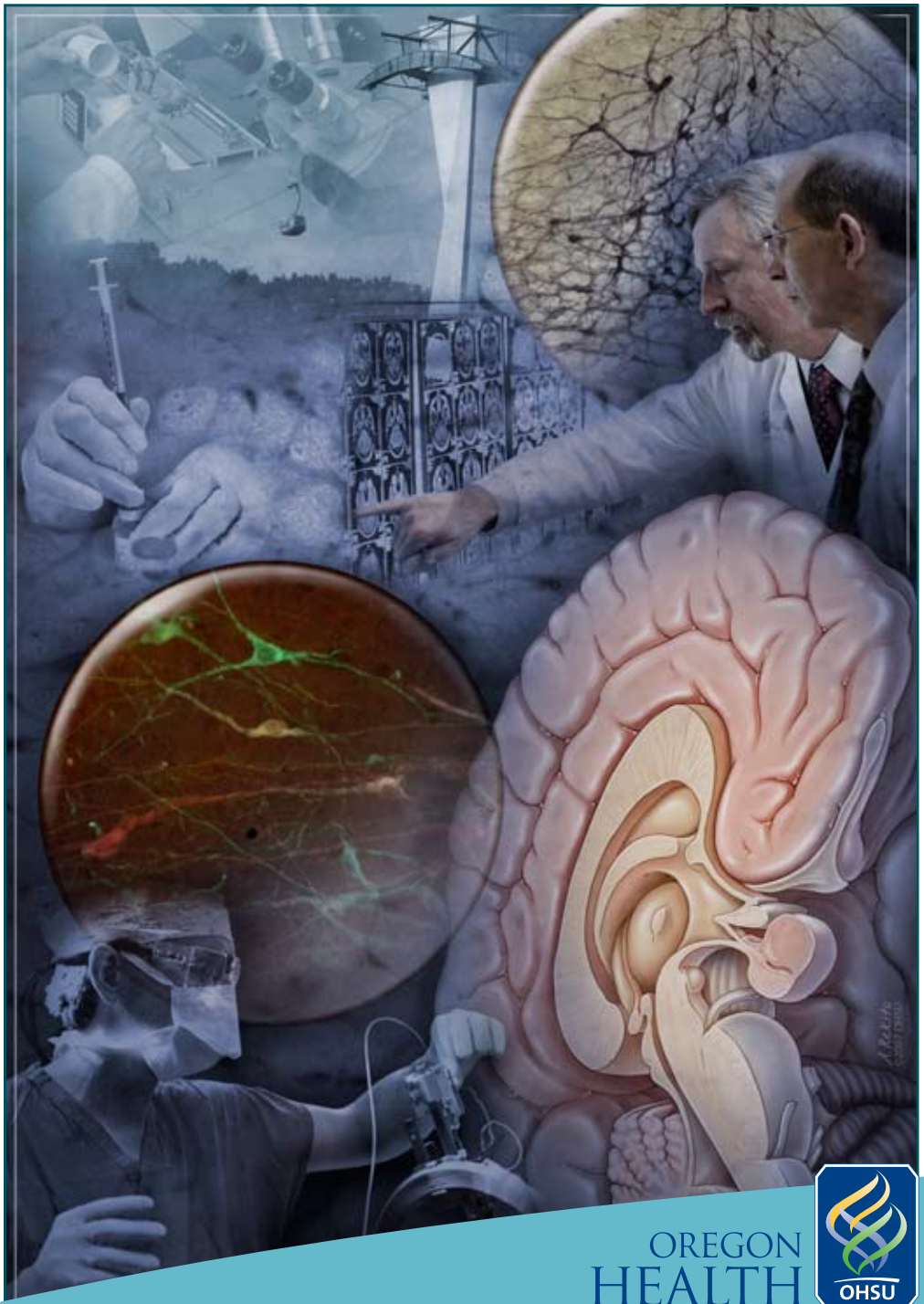
Introduction

Philanthropic Feature

Department News



OHSU *Neurotransmitter* is published by the Department of Neurological Surgery, Oregon Health & Science University, School of Medicine, for colleagues, alumni and friends of the department.

For inquiries, submissions or suggestions, please contact Shirley McCartney, Ph.D., at 503 494 -7469 or *mccartns@ohsu.edu*
Learn more about us on our website:
www.ohsu.edu/neurosurgery

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Chairman's Update

E pluribus Unum was, for most of its history, the motto of the United States government. It was adopted to appear on the Great Seal of the United States in 1782, and remains on our national emblem today as a memento of the earliest years of our country. I was interested to discover that according to historians, *E pluribus Unum* was "found" by Benjamin Franklin in a salad recipe! The expression, in capital letter spelling, is included on most U.S. currency, and is also stamped on the edge of the new one-dollar coin.

Translated from Latin, it most closely means "Out of many, (is) One." It originally referred to the unity of the federation of the United States as well as the notion, in later years, that the nation is a melting pot of peoples.

This edition of the *Neurotransmitter* allows me to reflect on the importance of connections in our professional lives. It is my strong conviction that when OHSU is at its best, we are unified. In this instance, I mean the potential synergism of research and clinical medicine, and integration of clinical care, be it surgical or medical, to accomplish a common goal. By no means are we there yet, but we are getting there.

The OHSU Brain Institute is a prime example of our potential for connection building. In this one entity, we have both world-class neuroscience research and clinical neuroscience divisions. Our challenges are to not only build the connections between these two neuroscience worlds, but to interconnect basic neuroscientists in myriad research disciplines, as well as clinical neuroscientists in disparate departments and specialties. Shared research and clinical challenges range from epilepsy, pain, stroke, and nervous system tumors, to genetic diseases, degenerative disorders, and central nervous system injury. The complexity is somewhat overwhelming, but the potential is enormous.

Linkages need to be fostered within departments, as well. I think I can speak for the entire neurological surgery faculty when I say that our combined missions of healing, teaching, and discovery make every day a fascinating and rewarding endeavor. We do our best work when this tripartite mission is linked, and points toward a common goal. The key to the discovery, and application, of new knowledge to improve the lives of our patients, in an environment that is energized by the educational continuum, lies in the connections and synergism between these three objectives.

President Robertson has articulated this in his 2020 Vision for OHSU. Enhanced clinical integration, and maximizing the complementarities of basic research and clinical medicine, are the hallmarks of our strategic planning. Connections are what it is all about, including connections with people in our community, and it is what will transform us from an outstanding institution to a truly great one.

I hope you find this edition of the *Neurotransmitter* to be interesting, and I would like to wish you a delightful fall and winter holiday season.

Kim J. Burchiel, M.D. , F.A.C.S.
John Raaf Professor and Chairman
OHSU Neurological Surgery

Academic Appointments

Mary Heinricher, Ph.D., has accepted an appointment as a member of the surgery, anesthesiology and trauma study section (National Institutes of Health), Center for Scientific Review, July 2007-June 2011.

Nathan R. Selden, M.D., Ph.D., has been appointed scientific program chairman for the 2008 Annual Meeting of the Congress of Neurological Surgeons, which will be held in Orlando, Fla.

Philanthropic support for OHSU reaches all-time high

I'm pleased to report that the ongoing efforts of OHSU's dedicated volunteers and staff have resulted in the institution's most successful fund-raising year ever. During the fiscal year just ended, we received a remarkable total of more than $113 million in gift commitments, including $80 million to the OHSU Foundation; $18 million to the Doernbecher Children's Hospital Foundation; and $15 million to OHSU. This total represents the first time in its history that OHSU has surpassed the $100 million threshold – a wonderful achievement of which we can all be proud.

By any measure, this has been an unprecedented year in giving to OHSU. Thank you for all that you do to advance OHSU's missions to heal, teach, discover and serve.

Joseph E. Robertson, Jr., M.D., M.B.A.
OHSU President

How you have helped OHSU Neurological Surgery

The Department of Neurological Surgey thanks all contributors and individuals for their kind contributions. These have helped neuroscientists at OHSU neurological surgery and OHSU Doernbecher Children's Hospital in their mission to find cures and better treatments for neurological disorders, and to meet OHSU's core missions of healing, teaching and discovery. New discoveries and treatments at OHSU are creating hope for millions of people who cope with neurological problems that affect how they interact with the world. Detailed below you will find how unique individuals have contributed in their own unique ways to help OHSU neurological surgery and OHSU neurosciences.

Campagna Scholar in Neurological Surgery

Thanks to the kind philanthropic gesture of Mario Campagna, M.D., and his wife, Edith, of Medford, Ore., the Department of Neurological Surgery hosted the first Campagna Scholar in Neurological Surgery in 2007. This unique scholarship supports a 10-week summer semester of research under the supervision of a neurosurgical mentor at OHSU and residence expenses in Portland. Students in the first or second year of study at an accredited U.S. medical school are eligible to apply. This scholarship is awarded each summer from an endowment established by Dr. Mario and Edith Campagna through the Doernbecher Foundation. Accrued income from the endowment covers the scholarship each year.

Christopher Urban, a first-year medical student at the University of Pennsylvania, was the scholar for 2007. Urban was selected from a highly qualified and interested group of applicants. He worked with Kim Burchiel, M.D., on a clinical research project related to trigeminal neuralgia.

"Through shadowing in the clinics, observing in the operating room, and conducting clinical research, the Campagna Scholarship has been a unique and valuable opportunity for exposure to the fascinating field of neurosurgery. The faculty and residents' approachability and dedication to teaching has made this an incredible learning experience and an excellent way to spend a summer," said Urban.

Cameron Foundation Gives Back

Four years ago, during the birth of Colin Cameron, his parents Paul and Meagan, were told their son had experienced a brain hemorrhage and may need brain surgery. The Camerons asked "Who is the best brain guy for children?" The answer was Nathan Selden, M.D., Ph.D., Doernbecher Children's Hospital talented pediatric neurosurgeon. The Camerons wanted to know their options and brought Colin to Doernbecher Children's Hospital. Dr. Selden advised them to wait rather than immediately have surgery performed. He felt Colin's brain could repair itself. "Dr. Selden was the first ray of hope we had since Colin's birth, and we soon realized he was the best physician to look at this problem. He went out of his way to take care of us," said the Camerons. So he could be sure Colin was developing normally, Dr. Selden had regular visits with Colin in the first eight months. Dr. Selden noted, "Diagnosis of a difficult problem and careful decision making is just as important as the operation itself. An important part of my job is to talk with the parents so they have as much knowledge about the future of their child as I do." Today, Colin is a happy, active child and has a little brother, Luke. The Cameron Family generously supported the research in Dr. Selden's laboratory with a gift that funds the investigation of ways a child's brain can decrease the impact of pain from trauma or surgery. Like many physician-researchers at Doernbecher Children's Hospital, Dr. Selden brings new therapies and treatments to children to improve the quality of their lives.

Originally published in Doernbecher Hero News Summer 2007.

The Mario and Edith Campagna Professorship in Pediatric Neurological Surgery

Nathan Selden, M.D., Ph.D., head of the Division of Pediatric Neurological Surgery at Doernbecher Children's Hospital is OHSU's first Campagna Professor. Funded in 2005, this endowed professorship has been made possible through a generous $1 million gift to the Doernbecher Foundation by Mario Campagna, M.D., and his wife, Edith, of Medford, Ore. Campagna has been a leader in Oregon neurosurgery for more than 40 years, having founded the largest neurosurgical practice between Portland and San Francisco. He and his wife have long been recognized as civic leaders in the Rogue Valley and throughout the state.

"This professorship represents the first endowed position in pediatric neurosurgery in the state of Oregon," said Joseph E. Robertson, Jr., M.D., M.B.A., OHSU president. "We are grateful to the Campagnas for their exceptional commitment. This gift will advance patient care, research and education in pediatric neurosurgery into perpetuity." The professorship represents a "significant programmatic development" at the area's premier children's hospital, Robertson said.

Dedication, Cougar Crest Winery, Walla Walla, Washington

Debbie and Dave Hansen, owners of Cougar Crest Winery, have named "Dedication" for the dedication and sacrifice shown by the neurosurgery, trauma, and intensive care unit doctors and nurses of Doernbecher Children's Hospital who gave their daughter's life back to her. "With deep gratitude and respect, we are dedicating this wine and a portion of the proceeds to Doernbecher Children's Hospital at Oregon Health & Science University. We want our dedication to grape growing and winemaking to help them continue their incredible, livesaving work."

Dedication is a red wine blend with complexity and finesse, suitable for family meals and for special occasions. Dedication is also an award-winning wine: Double Gold! 2007 West Coast Wine Competition, 2007 Silver Medal Grand Harvest Awards California, and 2007 Silver Medal Washington Wine Competition.
http://www.cougarcrestwinery.com

Coincidently, the Hansens' daughter recently completed a one-week summer clerkship at OHSU with Doernbecher surgeon Andrew Zigman, M.D. She intends to purse a career in medicine.

Credit Unions for Kids of Oregon and SW Washington

This program has pledged $1 million to the Doernbecher Foundation to help fund a new or upgraded pediatric neurosurgery operating suite for Drs. Nathan Selden and Dan Guillaume over the next three years. This program will also fund a $1 million professorship for Tom Koch, M.D., head of pediatric neurology.

How you have helped OHSU Neurological Surgery continued...

Helen Tracy Estate

This estate is providing $100,000 through the Doernbecher Foundation for specialized pediatric neuroendoscopy equipment for Dan Guillaume, M.D., in 2007.

The neuroendoscope has revolutionalized the treatment of patients with hydrocephalus, brain tumors, aneurysms, pituitary tumors and any intraventricular pathology. The use of the neuroendoscope has allowed neurosurgeons to clearly see inside the skull, brain and spine, often with better operating visualization and the ability to "see around corners," and without the need for a large incision. The main advantage is much shorter hospital stay and quicker return to normal activities for patients.

A generous gift that will help more than the donor: Lokomat

Alan Amerson is going for a stroll. The 56-year-old is at Oregon Health & Science University's Center for Health & Healing, on a terrace overlooking the March Wellness fitness center's basketball court. He appears relaxed but determined as his upper body bobs slightly up and down, his legs moving at a leisurely pace of just over 1 mile per hour.

"Right now, I'm just kind of along for the walk," Amerson says.

That's because Amerson isn't exactly doing all the walking. In a scene right out of the movie "RoboCop", high-tech mechanical legs to which Amerson's own legs are strapped quietly whir and buzz as they move back and forth in rhythmic cadence over a slow-moving treadmill, forcing his legs to move along with them. A rope attached to a vest-like harness Amerson is wearing keeps his upper torso above his legs, automatically lifting and dropping him just enough to simulate a natural stride.

"It's just like I'd walk," Amerson observes.

Amerson is using a Lokomat, an automated intensive locomotion therapy machine manufactured by Hocoma AG of Volketswil, Switzerland, that combines treadmill training with robotics to create a unique gait orthosis. Its purpose is to improve mobility that's been lost or reduced due to stroke, spinal cord injury, traumatic brain injury, multiple sclerosis, and other neurological diseases and injuries.

"The idea behind the Lokomat is to allow retraining – in effect, repatterning – of neurological function, after nervous system injury," said Kim Burchiel, M.D., professor and chairman of neurological surgery, OHSU School of Medicine. "If a patient has spinal cord or brain damage – in Alan's case, damage caused by a tumor – it may allow the nervous system to practice using other circuits to permit and perform movement in a way that passive physical therapy cannot."

Amerson, president of Amerson Precision Sheet Metal Inc. in McMinnville, was so enthralled by Lokomat's potential as a therapeutic tool that he donated the nearly $300,000 it would take OHSU to purchase the machine for its neurological rehabilitation program.

"It doesn't make any sense for me to have one of these things in my home," Amerson says. "This is something that I'd like to see anybody who can benefit from it, use it. It makes me feel good that people in my condition are able to use it."

In January 2005, Burchiel removed a tennis ball-size tumor from Amerson's brain during a 10-hour operation. The slow-growing meningioma was not cancerous, but it had grown down between the two hemispheres of Amerson's brain, pushing one of the halves off to one side. He was in the hospital for three weeks, including two weeks in intensive care.

"Following surgery, not only did I not have use of my legs, but I couldn't move my hands, I couldn't move anything," Amerson recalls.

Over the following seven weeks, Amerson regained some use of his hands and was able to eat on his own, but he still couldn't walk. So Amerson, with help from his physical therapists in McMinnville and at OHSU, went on a hunt for a device that would help him learn to walk again.

"I called clinics that had different pieces of equipment," recalls Marvin Smith, D.P.T., a lead OHSU neurological therapist who works with Amerson. The Lokomat "seemed to be the most user-friendly, the most ergonomically designed for our patients and it was also the nicest looking."

After seeing a demonstration of the machine by Hocoma representatives, Amerson donated the money for the machine – about $292,000 – to OHSU, which then purchased Hocoma's high-end model, the Lokomat Pro, in February.

According to Hocoma's Web site, the Lokomat Pro can measure a patient's activity through "force transducers" fitted directly to the machine's drives that allow the level of gait assistance to be adjusted for each leg. It also has a system that monitors the patient's gait and provides real-time visual performance feedback to motivate the patient, and it can measure hip and knee stiffness, the isometric force generated by the patient, and range of motion in the hip and knee.

For Smith, the Lokomat minimizes the need for multiple physical therapists assisting one patient.

"Obviously, there's less strain on the person assisting the patient, which would be me. That is a huge advantage for the therapists because we can actually assess the person from the whole picture, including stepping back and seeing how it's helping them, and determining what areas of the machine we need to tweak to make it a more natural-looking walk and, ultimately, beneficial to the patient once off the machine," he says. "With a traditional, non-robotic machine, we're moving one leg at time, with one therapist on each leg. It's a big workout doing that."

Amerson took one of the inaugural walks on the Lokomat in early March. "I think I'm their guinea pig on this thing, which is fine," he says. "If they can gain some use out of this, and I can learn to walk again, then everybody is going to be happy."

Burchiel considers such technology the future of neurological rehabilitation therapy. "Our center has a concentrated effort in rehabilitative, medical and surgical treatment of the worst nervous system disorders and injuries. As such, we need the best and most advanced therapies for rehabilitation, which is exactly what the Lokomat represents," he says. "Very few centers in the U.S. have such advanced tools."

by Jonathan Modie

How you can help OHSU Neurological Surgery

OHSU's comprehensive research, education and clinical programs in the neurosciences are nationally renowned and regionally treasured. OHSU is a leader in neurosciences today in part because caring people support these programs with charitable gifts. Many supporters give in memory of a loved one who received exceptional care here, or who believed in the value of our cutting-edge research. Your gift in honor or memory of a special person is a meaningful investment in the brain health of future generations. Whether you wish to make a gift or pledge today, or prefer to give to OHSU neurological surgery through your estate or other form of deferred giving, our development staff can help you create a gift that achieves your philanthropic and personal goals.

For information about investing in the future of OHSU neurological surgery, please contact:

- Lori Sweeney at 503 494-7455, *sweeneyl@ohsu.edu*
- Sadie Romano at 503 494-7504, *romanos@ohsu.edu*
- Visit the Web site at www.ohsufoundation.org.

Popular Planned Giving Options

- Gifts by will or revocable living trust, which may be for a specific dollar amount, a percentage of your total estate or a residual amount remaining after all specific expenses and bequests have been paid.
- Naming the OHSU Foundation as beneficiary of retirement plans, life insurance policies, transfer-on-death accounts and commercial annuities, which allows you control of the funds during your life and provides a probate-free transfer of assets.
- Life income gifts that enables you to make a significant contribution while providing income for life or a term of years, an immediate income tax deduction and the potential for reduced estate taxes.
- IRA charitable rollovers for donors older than 70 ½. This provision allows tax-free transfers of up to $100,000 from an IRA to OHSU by Dec. 31, 2007. These transfers count toward your required minimum distribution but do not increase your taxable income.

Contact the OHSU Foundation's gift-planning department at 503 228-1730 for more information.

Neurological Surgery Grateful Patient Giving

OHSU neurological surgery staff and physicians care about the people in our community and show it by giving you the best medical attention possible.

If you or a loved one have experienced exemplary care and wish to show your appreciation, please consider making a gift to the department. Your OHSU neurological surgery physician or the neurological surgery administrator Sally Rodgers would be happy to speak with you to determine what you have in mind, discuss areas of greatest need and benefit, and put you in touch with an OHSU or Doernbecher Foundation staff member.

The gift you make today will benefit our community for years to come.

Contact: Sally Rodgers, 503 494-6428, *rodgersa@ohsu.edu*

In addition to the unique philanthropic support outlined in the previous pages, the Department of Neurological Surgery has a variety of programs that support research and resident/instructor education. Listed below are brief descriptions of the different activities supported by gifts to neurological surgery.

Raaf Chair

This endowed chair supports research in neurological surgery and neurosciences. Kim J. Burchiel, M.D., F.A.C.S., is the John Raaf Professor and Chairman.

Harold D. Paxton, M.D. International Professorship

This endowed professorship was created by the OHSU Department of Neurological Surgery to honor Dr. Harold D. Paxton's dedication to international neurosurgical education. This endowed professorship supports the implementation, development and advancement of the academic training program of the OHSU Department of Neurological Surgery.

On a yearly basis, an academic neurological surgeon with an international reputation for education, innovation and use of state-of-the art approaches to neurosurgical teaching techniques is invited to fill this unique professorship.

left to right: Dr. Yucel Kanpolat, the 2006 Paxton International Professor, with Dr. Kim Burchiel and Dr. Harold Paxton.

Dr. Neville Knuckey, the 2007 Paxton International Professor, during an anatomy lab training session.

Neurosurgical Educational Gifts

These gifts provide support for numerous endeavors, 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.

Gallo Professorship

The Gallo Lecture was created by the OHSU Department of Neurological Surgery to honor the legacy and dedication to teaching and medical ethics of Anthony J. Gallo, Jr., M.D. A medical school graduate of Harvard University, Dr. Gallo was a highly respected pediatric neurosurgeon and throughout his career was devoted to the care of disabled children. He was a professor of neurosurgery at OHSU from 1968 to 1989.

Research News

OHSU First in Oregon to Offer New Artificial Disk for Neck

Oregon Health & Science University is the state's only medical center implanting a new artificial disc just approved by the Food and Drug Administration for treating degenerative cervical disc disease.

Johnny Delashaw, M.D., professor of neurological surgery, and otolaryngology/head and neck surgery, OHSU School of Medicine, was among the first physicians in the country, and the first in Oregon, to implant the Prestige Cervical Disc during an early study. He is the only Oregon surgeon now implanting the disc and will train other surgeons on the procedure.

The Prestige disc, the first and only artificial disc approved by the FDA for the cervical spine, became available as a treatment beginning August 2007.

The surgically implanted, stainless steel disc, manufactured by Minneapolis-based Medtronic Inc., is intended to relieve neck pain and stiffness, and the occasional weakness or numbness in the arms, due to a pinched nerve. This can be caused by a herniated disc between cervical vertebrae or a bone spur on a vertebra, both of which can push on the nerve root.

The Prestige disc mimics the natural motion of the neck through a "ball-and-trough" design that allows for a variable center of rotation. It is inserted through a 1½-inch incision in the front of the neck.

"It's really simple," Delashaw, who specializes in skull base surgery, said of the hour-long procedure. "You just slide it in and put the screws in. People go home the same day. It's a mild modification of a procedure that's done routinely."

That routine procedure – spinal fusion – has, until now, been one of only two options available for the estimated 200,000 Americans per year who seek surgical treatment for degenerative cervical disc disease. Fusion involves removing a troubled disc and bolting the vertebrae together with steel plates to restrict motion.

"The problem is when you fuse a segment, (vertebrae) above and below have to work harder when you bend your neck, and that increases the chance for other segments having stress," said Delashaw, who underwent cervical spinal fusion eight years ago. "That's why people prone to spine surgery are prone to have more spine surgery."

The other available procedure, foramenotomy, involves enlarging the passageway where the nerve root exits the spinal canal so the nerve can more easily get around the spur.

In foramenotomy, "we don't alter movement in the neck, but theoretically it may not be the best thing," Delashaw said. And surgery "hurts a lot because you go through a lot of muscle. But it doesn't alter motion like fusion."

In a two-year clinical trial ending in August 2004, patients receiving the Prestige disc experienced "statistically significant outcomes" 24 months after surgery in an index that measures how much a patient's neck pain affects the ability to manage everyday activities, according to Medtronic. Prestige patients also returned to work an average of 26 percent faster than those receiving spinal fusion. The trial involved 541 patients enrolled at 32 sites across the country.

"This study compared Prestige to the gold standard, and it's better than the gold standard," Delashaw said. The Prestige disc also costs the same as spinal fusion, "so it's kind of a win-win."

And if the disc ever fails, it can be easily removed, Delashaw noted. "If you have to take it out, it's really easy because the access point is easy. If it doesn't work five, 10 years later, you can always do fusion."

Todd Welch, district sales manager at Medtronic, said OHSU has always been progressive in its efforts to use new technologies like the Prestige disc to treat spinal disorders, as well as back and neck pain.

"In addition to providing the latest technologies available, the surgeons at OHSU have invested the time necessary to learn new techniques like the Prestige Artificial Disc," he said.

by Jonathan Modie

New Fellows

Andrew Zacest, M.B.B.S., M.S., joined neurological surgery as an instuctor in functional and stereotactic neurosurgery in July 2007. He obtained a bachelor's degree in medicine and surgery (M.B.B.S.) from the University of Adelaide, Adelaide, Australia in 1995. In 2001, following general surgical training he commenced neurosurgical residency training at the Royal Adelaide Hospital, Adelaide and Westmead Hospitals in Sydney, Australia. Dr. Zacest was appointed a Fellow of the Royal Australasian College of Surgeons in 2007. As part of his training he completed a Masters of Surgery (M.S.), his thesis was titled *Substance P in Traumatic Brain Injury,* and was the second neurosurgical resident in Australia to be awarded by examination a Fellowship of the Faculty of Pain Medicine of the Australian and New Zealand College of Anaesthetists. His neurosurgical interests include pain, functional disorders, epilepsy and neurooncology.

Kristine Dziurzynski, M.D., M.S.P.H., joined neurological surgery as an instuctor in skull base surgery in July 2007. She obtained a bachelor's degree in physics from Auburn University, Ala, a master's in public health from the University of Alabama at Birmingham, and a medical degree from the University of South Alabama. In 2007, following a year of general surgical training the University of South Alabama, she completed neurosurgical residency training at the University of Wisconsin Hospitals and Clinics. Her neurosurgical interests include neurooncology. More specifically, Dr. Dziurzynski is interested in the best treatment strategy, molecular and immunological profiles, and characteristics of: low-grade astrocytomas, anaplastic oligodendrogliomas, human central nervous system tumors and microglia.

Events & Announcements

September 2007

Endoscopic and minimally invasive approaches to the brain and cranial base: continuing medical education workshop for neurosurgeons held at OHSU — September 22 & 23, 2007

Neurologists in the 21st Century: What's New in 2008?
www.ohsu.edu/som/cme/index.cfm — September 28, 2007

The 17th Annual John Raaf Day — Volker K. H. Sonntag, M.D.
Volker K. H. Sonntag, M.D., is a professor of clinical surgery at the University of Arizona and the vice chairman of the Department of Neurosurgery at the Barrow Neurological Institute. At the institute, he is also chairman of the spine section and director of the residency program. He specializes in spinal disorders. His subspecialties include degenerative spine disease, spine tumors and fractures. — September 29, 2007

October 2007

5th Annual Pacific Northwest Brain Injury Conference 2007
Living with Brain Injury: Building Bridges
www.biaoregon.org — October 5 & 6, 2007

OHSU Pituitary Conference for Patients: Pituitary Day
This free course is designed for patients, their families and care givers of individuals with pituitary diseases. It is presented by members of the Northwest Pituitary Center, a multidisciplinary team at Oregon Health & Science University dedicated to the health and well being of patients with pituitary diseases. The program is underwritten partially by pharmaceutical industry support. http://ohsupituitary.ohsu.edu — October 21, 2007

March 2008

The 2nd Anthony Gallo, Jr. Lecturer 2008 — Arnold Menezes, M.D.
Arnold Menezes, M.D., is professor of neurological surgery and vice chairman of the Department of Neurosurgery, University of Iowa College of Medicine. Dr. Meneze's research interests include: the craniovertebral junction, spinal dysraphic states, hydrocephalus, spinal bony compression lesions in children, and cranial base surgery. His clinical expertise includes: neurosurgery, pediatric neurosurgery, skull base surgery, and cervical spine pathology. — March 15, 2008

Brain Injury Awareness Month in Oregon — www.biaoregon.org

Brain Awareness Week — www.dana.org — www.oregonbrains.org

April 2008

The Harold D. Paxton International Professorship 2008
Jean Goncalves De Oliveira, M.D.

2008 Paxton Alumni Reunion and Department of Neurological Surgery Distinguished Alumni Award 2008
(to be announced)

August 2008

Neurosurgery Outreach Month — www.aans.org

Resident Awards

2007 NREF/Porex Surgical Research Award

Established by the Neurosurgery Research and Education Foundation (NREF) of the American Association of Neurological Surgeons in 1983, the Research Fellowship provides training for neurosurgeons who are preparing for academic careers as clinician investigators.

2007 — Justin Cetas, M.D., Ph.D.
Central mechanisms of pain in dural inflammation

Western Neurosurgical Society (WNS) Research Resident Award

Presented by the WNS for the abstract that receives the highest rank for basic science when rated independently by evaluators. The resident is invited to present at the annual meeting.

2007 — Kenny Liu, M.D.
Poly (ADP-ribose) polymerase (PARP-1) mediated cell death following cerebral ischemia is androgen dependent

Western Neurosurgical Society (WNS) Clinical Resident Award

Presented by the WNS for the abstract that receives the highest rank for clinical science when rated independently by evaluators. The resident is invited to present at the annual meeting.

2007 — Jonathan Miller, M.D.
Predictors of long-term success after microvascular decompression for trigeminal neuralgia

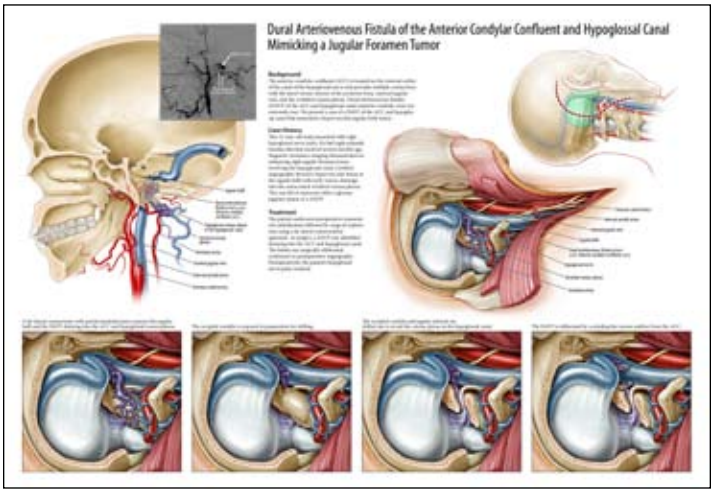
OHSU Department of Emergency Medicine — Outstanding Consultant of the Year

Each year at the OHSU Department of Emergency Medicine graduation ceremony, a select number of nurses and attending physicians are recognised for their outstanding efforts throughout the year.

2007 — Jason Weinstein, M.D.

Medical Illustration Award

Andy Rekito, M.S., was the recipient of the Wil Shepard Award of Excellence in the Instructional Color category at the 62nd annual meeting of the Association of Medical Illustrators, July 2007, in Bozeman, Mont.



For more information, contact OHSU Neurological Surgery:

Web: www.ohsu.edu/neurosurgery *Email: nsg@ohsu.edu*
Phone: 503 494-4314 *Fax: 503 494-7161*

OREGON HEALTH & SCIENCE UNIVERSITY

Change can't happen if we see things just one way. That's why diversity is important to who we are. We are proud to be an equal opportunity employer.

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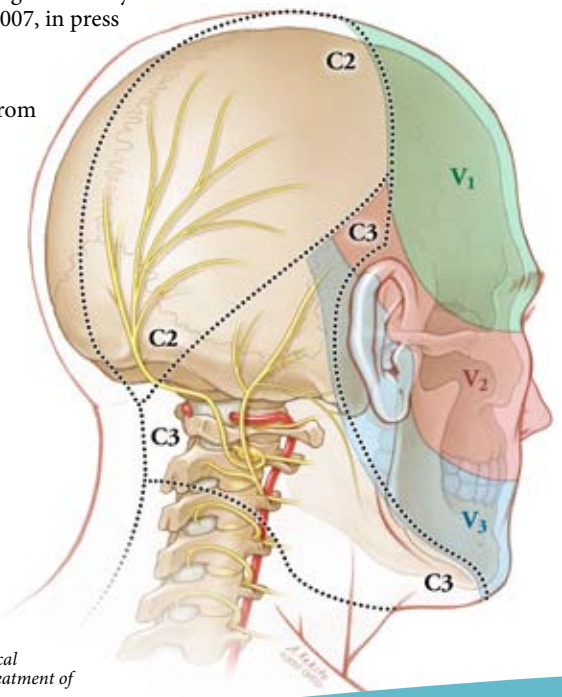

Illustration from *Pain Relief after Cervical Ganglionectomy (C2 and C3) for the Treatment of Intractable Occipital Neuralgia.*