Renowned Surgeon Takes Team to Reconstruction’s Leading Edge

Among the “before” and “after” photos on Dr. Peter Neligan’s computer, one tells a story of surgical success and patient gratitude. In the 2006 photo, Neligan stands with a smiling couple on their wedding day. The husband, Curtis Weber, had suffered horrific burns and injuries in a 1999 granary accident, resulting in partial amputation of his right arm and his left leg. Later, Neligan, then a plastic surgeon in Toronto, performed more than a dozen other procedures on Weber.

He described some of the procedures: A flap to recreate Weber’s lower lip and chin, another to create his upper lip. A section of upper ear was made into a nostril. A flap of tissue from Weber’s thigh was shaped into a new penis, with skin from the back of a foot as a urethra. Another surgery repaired the arm stump.

The procedures demonstrate Neligan’s prowess and why he was brought to Seattle to lead the University of Washington Medical Center’s Reconstructive Surgery Clinic. He will work most closely with Drs. David Mathes and Hakan Said, and collaborate with Drs. Neil Futran, Kris Moe and Eddie Mendez, surgeons in Otolaryngology – Head and Neck Surgery.

“We’re building a multidisciplinary program that complements the oncology services,” Neligan said. “So a physician who has cancer patients will refer them because he knows UWMC doctors can take care of their cancer, and can put their patients back together again when the cancer is dealt with.”

Currently 80 percent of the Reconstructive Surgery group’s care goes to cancer patients. “The high volume of breast cancer patients translates to repetition and expertise. We rebuild breasts on almost a daily basis,” Said explained.

He described a new protocol that he’s performed successfully: For a breast-cancer patient scheduled for post-surgery radiation, he inserts an implant at time of mastectomy to stretch the patient’s breast skin – which will shrink slightly with radiation. When radiation treatment is complete, he removes the implant and uses the patient’s own tissue to

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shape a breast that is more symmetrical to the other breast.

The benefit: It’s patients’ best chance to have a breast similar to its pre-surgery appearance, and they don’t have to be without a breast.

UWMC surgeons have mastered the DIEP (Deep Inferior Epigastric Perforator) flap procedure for breast reconstruction, in which abdominal skin and fat are transferred but the patient’s rectus muscle is left in place. “Patients don’t lose the integrity of their abdominal wall. People come to us specifically for this procedure,” Said added.

Neligan strongly advocates the perforator-flap approach for nearly all reconstructions because it enables them to use tissue from more parts of the body. “Knowing the anatomy of the blood vessels allows me to take tissue that maybe nobody’s ever used in reconstruction before because I know that the blood supply will be there. It’s allowed our reconstructions to be much more sophisticated.”

With Neligan, UWMC becomes one of a few U.S. hospitals to offer reanimation surgeries to patients with facial paralysis. In most of these cases, the facial nerve on one side of the patient’s head has lost function – commonly due to Bell’s palsy but also as a complication of surgery to remove an acoustic neuroma or intracranial tumor.

Reanimation procedures commonly include a unilateral brow lift, an upper eyelid gold-weight insertion, a lower eyelid tendon sling, and a functioning muscle transfer of the gracilis – in which the thigh muscle’s accompanying blood and nerve supply also are transplanted under the cheek to enable the patient to smile. The gracilis nerve can be connected to the facial nerve on the opposite side of the face, if it is viable, or to the masseter nerve on the same side as the injury.

UWMC’s specialists are adept at reconstructing areas where large, cancerous masses are removed, as with some melanomas and carcinomas. Neligan recently assisted with a cancer patient who’d had an arm amputated at the shoulder and who needed more cancerous tissue removed from the shoulder girdle. Three perforator flaps, from the patient’s abdomen, back and thigh, were used to replace the removed tissue.

“Often in those types of situations, you face something you’ve never faced before,” Neligan says. “A lot of those decisions are made on the fly – it’s problem-solving, and that’s where our expertise comes in."

Mathes discussed research he’s undertaking with burn-unit patients at Harborview Medical Center. He hopes to learn how patients with facial burns would value better-appearing transplants – a lip, for example – harvested from another individual vs. a graft of their own transplanted tissue, which likely would not look as good. Patients whose burns impair function might feel differently than those whose burns cause cosmetic defects only.

“The other major consideration is openness to a lifelong regimen of immunosuppressants,” Mathes said. “We want to assess the degree of risk that transplant patients are willing to take for potential benefits.”

Mathes also expressed appreciation for Neligan’s arrival. “He brings great expertise and experience. It’s great to have access to somebody you can learn from, and to someone who is providing leadership, as well.”

To learn more about the UWMC Reconstructive Surgery Clinic, call 206-598-2342 or visit uwreconsurgery.org
From Outer Space to In Clinic: Research Informs Balance-Disorder Treatment

What does the UW Medical Center’s Dizziness and Balance Center have in common with the Jet Propulsion Laboratory? Both earned the trust of NASA.

The center is a leader in developing protocols used worldwide to diagnose and treat vestibular and oculomotor disorders in adults and children. Dr. James Phillips, the center’s leader, is in the fourth year of a NASA grant. “We are trying to find out how natural [balance] behaviors occur in unnatural environments – and learn which compensatory techniques work best.”

Zero-gravity affects astronauts’ senses of balance and spatial motion, and those changed senses can challenge astronauts as they operate instruments and land shuttles. Phillips noted, however, that for anyone whose vestibular system changes – and about one in three people will face balance problems in their lifetime – the everyday world becomes just as unnatural an environment as space.

“We’re discovering that training techniques that work in one, specific context can be generalized to allow more people [with balance problems] to quickly resume their normal activities,” he said.

The center has practitioners whose expertise spans otolaryngology, rehabilitation medicine, ophthalmology and neurology. Some are working with Phillips and a team of basic scientists to research the viability of a vestibular prosthesis through a contract from the National Institutes of Health. Akin to a cochlear implant, this device has been modified to stimulate the inner-ear’s balance apparatus and convey correct information to the brain.

“It receives input from accelerometers that tell the velocity of your head movement, and its tiny processor converts the signals that the ear ordinarily sends under those circumstances, and that stimulates the nerves [to the brain] directly,” Phillips explained.

The device, now being tested in animals, likely will be submitted for FDA approval in the next two years and potentially will be ready for human implant in 2011, he said.

“The UW is great that way. We have a nucleus of scientists and clinicians in the same environment, which is unique. You can take technology and write a grant to move your discovery into the clinic. [The process] works for testing and for diagnosis and potentially, hopefully, for treatment with this implantable device,” Phillips said. “From my perspective, it’s a cool success story.”

To refer a patient, or for more information about UW Medical Center’s Dizziness and Balance Center, call 206-598-7512 or visit http://www.uwENT-headneck.org

Physician Liaison Program
Do you have questions, comments or concerns about UW Medical Center? Contact our Physician Liaison Program.
Email: stevejj@uw.washington.edu
Phone: 206-598-5693
Fax: 206-598-4624

U-Link
When you refer your patients to UW Medical Center, you can access their medical records via the Internet.
Call 206-598-5693 or visit the “Info for Healthcare Professionals” section of uwmedicine.org for information about U-Link.

MEDCON
MEDCON is a consultation and referral service of the UW School of Medicine and its primary academic medical centers. The MEDCON line is open 24 hours a day, seven days a week.
Call 1-800-326-5300 or email medcon@washington.edu
Managing Kidney Disease is Part of Diabetes Care

Diabetes is the leading cause of chronic kidney disease and end-stage renal disease (ESRD). About 30 percent of diabetics develop kidney disease. Diabetes induces a myriad of pathogenic mechanisms that, in turn, affect many cell types in the kidneys. Injury to these cells leads to the clinical signature of this disease, namely increased levels of albuminuria and proteinuria. The kidneys gradually lose function until ESRD ensues, at which point the patient needs dialysis or transplantation. Moreover, albuminuria, proteinuria and chronic kidney disease are independent cardiovascular risk factors – maybe more significant than smoking or elevated LDL cholesterol.

Given this – and the fact that some 30 percent of diabetics are discovered to have an additional pathologic diagnosis beyond diabetic glomerulopathy – diabetic patients with albuminuria or chronic kidney disease require careful clinical evaluation, and often a kidney biopsy.

“We take great pride identifying risk factors for kidney disease and very early on modify these aggressively,” said Dr. Raimund Pichler, director of the Diabetic Kidney Disease Clinic at the UW Medical Center. He and clinic colleagues focus on modifying the patient’s disease processes from multiple angles: aggressive blood-pressure control (using ACE-I, ARBs, aldosterone and perhaps renin antagonists); albuminuria/proteinuria reduction, use of statins, anemia treatment, correction of hyperphosphatemia, obesity, and optimizing glycemic control.

Pichler noted albuminuria and proteinuria as cardiovascular risk factors, and cited the emerging evidence that significant (> 50 percent) reduction of albuminuria/proteinuria levels not only slows renal disease progression, but also may translate into less patient morbidity and mortality from cardiovascular problems.

“Experts at UWMC’s Diabetes Care Center are part of our comprehensive therapeutic approach,” Pichler added. “Patients are worked up for secondary causes of hypertension, such as renal artery stenosis, hyperaldosteronism or sleep apnea. We aim to have diabetic patients seen concurrently by the nephrologist and endocrinologist at same visit. Ideally, both providers are present in the room at the same time.”

Patients with Type 2 diabetes must be screened for kidney disease at the time diabetes is diagnosed and every year thereafter; patients with Type 1 diabetes must be screened within five years of diagnosis. Screening includes measuring albuminuria and serum creatinine, and estimating kidney function by the Modification of Diet in Renal Disease equation.

Patients with diabetes and kidney disease usually undergo a comprehensive treatment plan at UWMC:
1) Aggressive management of blood pressure to keep it below 130/80 mm Hg;
2) Aggressive therapy to reduce albuminuria or proteinuria with angiotensin-converting enzyme inhibitors, angiotensin receptor blockers, aldosterone inhibitors, and perhaps renin inhibitors;
3) Cholesterol-lowering therapy – typically statins – to protect the kidneys and the cardiovascular system;
4) Assessment of vitamin D status and parathyroid hormone levels, followed if needed by vitamin D therapy and treatment of hyperparathyroidism with vitamin D analogues;
5) Therapy for anemia, which can contribute to kidney disease and cardiovascular risk;
6) A Dietitian’s assessment of the patient’s protein intake and discussion of phosphorus and potassium restriction. A pharmacist optimizes the patient’s medication regimen.

UWMC nephrologists work closely with specialists from UWMC’s Diabetes Care Center. The center offers insulin sensors and lets patients upload meter readings for clinicians to analyze. Other disciplines involved in patients’ care might include pharmacologists, lipid experts, retinal disease experts, cardiologists and podiatrists.

Nephrologists manage early- and late-stage diabetic kidney disease, and related complications. “We also provide dialysis treatment,” Pichler said. “In an ideal world, we would prefer that our patients undergo a kidney transplant before they need dialysis.” Patients who receive pre-emptive transplants have much lower cardiovascular mortality and an increased lifespan and quality of life, he said.

To refer a patient, or for more information about UW Medical Center physicians’ management of diabetic kidney disease, please call 206-598-6700.
New Physician Profile

Orthopaedic Surgeon
Michael Lee Joins UWMC

Meet Dr. Michael Lee, a diehard Cincinnati sports fan and a spine specialist who recently came west to join UW Medicine Orthopaedics and Sports Medicine. In doing so he adds his expertise to the UW Medical Center’s orthopaedics care, ranked 15th in the nation in 2007 by U.S. News & World Report.

Lee specializes in degenerative conditions of the spine. He has a particular interest in newer surgical technologies, including minimally invasive approaches and disc-replacement surgeries.

“The advent of disc replacement in the U.S. is exciting. It still remains to be seen whether it will be as efficacious as traditional treatments in the long run, but the potential for these new treatments is compelling,” he said.

Lee graduated from Northwestern University Medical School in Chicago in 2000, then completed residency in orthopaedic surgery at Case Western Reserve University and a fellowship in spine surgery at Rush University Medical Center. He joined the UW faculty in September 2007.

The spine’s challenges drew his focus early in medical school. “It’s a real puzzle-solving field. Diagnostically it can be difficult to establish where pain is coming from, and many of the surgeries can be technically challenging.”

Lee referred to a recent patient for whom he removed a tumor from the thoracic spine.

“That was a challenging case that really reaffirmed my devotion to spine surgery. In that particular case, the diagnosis was obvious, but the actual surgery was quite extensive. Of course, the most important aspect of the case is that the patient did well afterwards.”

He has a strong research interest in back pain physiology.

“As spine surgeons, we have a good understanding of some of the causes of back pain, but we don’t have a complete understanding of all the causes,” Lee continued. “Back pain can occasionally be difficult to diagnose accurately and treat successfully. My research focus is to further understand the cause and physiology of this pain.”

Contact Dr. Lee at UW Medicine Bone and Joint Surgery Center, at 206-598-4288.

New UW Referral Directory

The new UW Medicine Clinical Referral Directory was mailed in December to 26,500 physicians and allied healthcare providers throughout the Washington, Wyoming, Alaska, Montana and Idaho (WWAMI) region.

The directory comprehensively lists UW Medicine clinicians by department, specialty and subspecialty. Physicians’ phone numbers and email addresses are included.

If you did not receive a directory and would like one, please contact Steve Jennings (info below). The directory also can be downloaded from www.uwmedicine.org (click the “Info for Healthcare Professionals” button in the left column).

SAVE THE DATE:
Free Symposium

Physicians, nurse practitioners, physician assistants and allied healthcare professionals are invited to a free educational symposium titled “Disease and Musculoskeletal Conditions: Innovations in Treatment.”

UW physicians will host morning and afternoon sessions March 27 at the UW Medical Center in Seattle. Attendees are welcome at either or both sessions. Register online at: http://tinyurl.com/374osy

For more information, please contact Steve Jennings at the Physician Liaison Program: Call 206-598-5693 or email stevejjj@u.washington.edu

The spine’s challenges drew Lee’s interest in med school.
New Leaders Focus on Meeting Referring Providers’ Needs

UW Medicine and the UW Medical Center welcomed two leaders in 2007 to guide development of those organizations. Among the tasks ahead, they said, is to understand how UWMC can better meet the needs of referring physicians, and to put steps in place to improve the referral experience.

In July, Johnese Spisso was named clinical operations officer for UW Medicine and vice president for medical affairs for the University of Washington. She assumed the role after seven years as chief operating officer at Harborview Medical Center in Seattle.

In September, Stephen Zieniewicz was named executive director of UWMC. He had been chief operating officer at Saint Louis University Hospital and Tenet Healthcare Corp. since 2004.

“New leadership is in place,” Spisso said. “In the coming year, we’ll aim to learn more about what’s working well for referring physicians, and where we can improve their experience. We have an opportunity to make real systemic change.”

Zieniewicz concurred. “UW Medical Center is a model for applying research to improve diagnosis and patient treatment. We need to work to meet the expectations of referring physicians, too.”

Spisso manages operations, growth, and development of the clinical components of UW Medicine – which comprises the UW School of Medicine, UWMC, Harborview Medical Center, and the Neighborhood Clinics and Physicians.

She joined Harborview in January 1994 as the assistant administrator for patient care services, overseeing critical care, burns, emergency medicine, operating rooms, post-anesthesia care and ambulatory surgery. Spisso previously had worked for 12 years at the University of California Davis Medical Center in Sacramento. She earned a master’s degree in health administration/public health from the University of San Francisco.

Zieniewicz, who has more than 25 years of experience in health care, will provide executive leadership for UWMC. He holds a master’s degree in public health from Columbia University’s School of Public Health, and is a fellow of the American College of Healthcare Executives.

Upcoming CME Courses

Radiology Review
March 31 through April 4, 2008
Hotel Deca, Seattle

Musculoskeletal Medicine
April 12–13, 2008
Kane Hall, UW Campus, Seattle

Physical Medicine and Rehabilitation
April 14-20, 2008
Hotel Deca, Seattle

Advances in Oncology for the Primary Care Clinician
April 25, 2008
Westin Hotel, Seattle

Cardiovascular Update for Primary Care Providers
May 2-3, 2008
Westin Hotel, Seattle

Travel and International Medicine
May 2–4, 2008 – Westin Hotel, Seattle

For more information, online registration, and additional online CME courses visit: http://uwcmee.org
Or contact:
UW Medicine Department of Continuing Medical Education
1325 4th Ave., Suite 2000
Seattle, WA 98101
Phone: 206-543-1050
Fax: 206-221-4525
Email: cme@u.washington.edu
New Protocols Open the Throttle on PET/CT Scanner

Some hospitals that treat cancer patients have a PET/CT scanner. As with any piece of high-tech equipment, the scanner has a spectrum of capabilities – and UW Medical Center radiologists “ran to the edge” of their scanner’s potential after it came online in 2005. In doing so, they have developed two clinical protocols that yield more reliable images of patients’ tumors, said Paul Kinahan, UWMC’s PET/CT physics director.

Scanners that perform both Positron Emission Tomography (PET) and Computerized Tomography (CT) have advantages to their single-purpose counterparts – notably the ability to fuse the resulting images to more accurately depict tumors’ location and appearance, and improve recommendations for treatment.

However, the PET scan can be distorted by patient breathing or movement. “If you are looking for something at the base of the lungs, or at the dome of the liver, it can get blurred or masked by these banana-shaped artifacts you get from respiratory motion,” Kinahan said. “A tumor located in the liver could look like it’s in the lung,” added Missy Wanner, UWMC’s PET supervisor. “If you see a tumor in that area, the artifact can affect measurements of tumor metabolism and our evaluation of tumor-response to treatment.”

Two new protocols, developed at UWMC and made possible by the hospital’s General Electric DSTE scanner, address respiratory-based distortions:

- The “Helical+CINE CT Attenuation Correction” protocol represents two scans – the typical CT scan followed by a very low-dose, averaged CINE CT scan to compensate for the respiratory motion of the area. CINE is not an acronym but rather reflects a cinematic moving picture. “The two scans together allow us to reduce and almost eliminate banana artifacts by using the CT to calibrate the PET image properly” Wanner said.

- The “PET-First” protocol changes the sequence of the PET and the CT, so the PET is done first. It lessens the chance of a mismatch between how the patient is breathing toward the beginning of the scan and the end, Kinahan said. “We receive a lot of requests from referring physicians for this protocol,” which was suggested by Dr. Hubert Vesselle, chief of UWMC’s Division of Nuclear Medicine.

More than 90 percent of the time, the PET/CT scanner is used for cancer patients who need diagnostic imaging of their torsos. At UWMC, these new protocols have been widely adopted for all such patients, and are especially helpful for patients with cancer of the lung or near the diaphragm. Hospitals with separate scanners cannot perform either protocol.

Wanner and colleagues perform PET/CT scans on 30 to 40 patients a week. With 20 years of expertise in combined PET and CT interpretation, and such state-of-the-art technology, UWMC offers cancer diagnostics unmatched by other hospitals in the Pacific Northwest.

To find out more about UWMC’s PET/CT protocols, or to schedule an appointment for your patient, call 206-598-7200 or visit uwradiology.org
As America Overeats, Reflux Cases Rise at Swallowing Center

Swallowing disorders afflict 15 million Americans, and a million more each year. The incidence of one such disorder, esophageal reflux, is on the rise. It can lead to heartburn, aspiration of food and, in severe cases, cancer.

Accordingly, business is steady at the Swallowing Center at the UW Medical Center. The center opened in 1993 – the first clinic with that focus in the Northwest – and today treats patients who have diseases and disorders of the esophagus and stomach.

Its founder, Dr. Carlos Pellegrini, in 1992 was the first surgeon in United States to perform a minimally invasive procedure to treat achalasia. Fifteen years later, the Swallowing Center’s experience, patient-based research, and technology continue to distinguish it.

“We have expertise beyond any other place in Seattle,” Pellegrini said. “A few other centers can test for the amount of acid reflux coming into the esophagus but we go beyond that. For example, with impedance technology, we can determine in patients whether acid is refluxing or other substances such as bile and intestinal secretions. We can learn how the esophagus responds to reflux.”

Swallowing Center physicians uses diagnostics such as high-resolution manometry (to evaluate pressure and peristalsis in the esophagus) and 24-hour impedance and pH monitoring (to detect acidic or alkaline reflux).

These tests help doctors determine, for instance, whether patients are at risk for pulmonary disease, hoarseness, or aspiration, said Dr. Brant Oelschlager, the center’s director. He and Pellegrini are the Swallowing Center’s attending surgeons; Dr. Roger Tatum, who practices at the VA Medical Center, helps drive the center’s research.

Oelschlager’s fellowship training included minimally invasive surgery – a popular offering with patients who undergo procedures that historically would be performed in an open field, he said.

Nearly 50 percent of the center’s patients are treated for gastroesophageal reflux disease, 20 percent for esophageal cancer, and the remainder for hiatal hernias, achalasia, benign or malignant gastric tumors, and other esophageal disorders.

The center generates protocol-setting research, too. “We determined how high acid and other substances reflux in the esophagus,” Pellegrini said. “In so doing, we were able to measure the risk of aspiration of reflux into the trachea…and identify patients who needed reconstructive surgery of the gastroesophageal valve….This research has developed over 15 years and is ongoing.”

Such research faces no shortage of participants: In addition to patients with other disorders, America’s increasing girth is contributing to the rise of reflux. “We’re busy,” Oelschlager said, “but we’re prepared to treat anyone who needs care.”

To refer a patient to the UW Medical Center’s Swallowing Center, please call 206-598-4547.