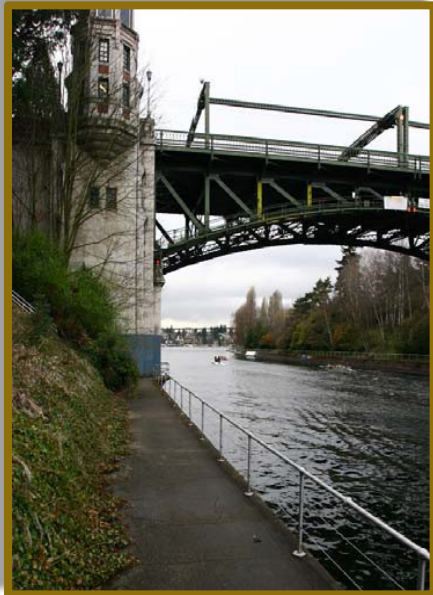


The Montlake Cut

A Publication of the Department of Neurological Surgery, UW Medicine Health Care

October 2013



Chairman’s Message... A View from Puget Sound



**Richard G. Ellenbogen,
M.D., F.A.C.S**

Welcome to the Fall 2013 issue of ‘The Montlake Cut’. In this issue we celebrate a host of exciting programs in our department. First, we recognize the graduation of another talented class of summer neuroscience students. Congratulations to Professor Raimondo D’Ambrosio who secured a prestigious CURE grant to fund his cutting edge epilepsy research. We are

delighted to announce the appointment of a new and exceptionally well-trained spine surgeon who was recruited to UWMC, Assistant Professor Eric Chang. In addition, we are pleased to welcome Dr. Eric Holland, an internationally renowned neurosurgeon and brain cancer researcher to our department. We have included an overview of an evolving neurohospitalist team which is raising the level of care in our HMC service to an unparalleled level of quality. And, in this issue, we profile the amazingly innovative research activities of Dr. Jeffrey Ojemann’s lab, focused on Brain Computer Interfaces. The “Hike to the Heavens” led by the indefatigable Dr. Louis Kim was yet another exhilarating success. Finally, Dr. Minku Chowdhary continues to amaze and amuse with a new puzzler.

Please enjoy this edition and remember, as always, we welcome your feedback and thank you for your support.

Sincerely,
Richard G. Ellenbogen, MD, FACS
Professor & Chairman, Department of Neurological Surgery

In This Issue

D’Ambrosio Lab Funded by CURE 1	Neurological Surgery International Fellows 5
Dr. Eric Chang Joins the Faculty1-2	The Neurohospitalist Team 2013..... 6
The Ojemann Lab2-3	Personal Growth 7
Summer Neuroscience Interns3-4	Puzzler..... 8
Dr. Eric Holland Joins the Department4-5	

D'Ambrosio Lab Funded by CURE To Study Post-Traumatic Epilepsy

Most of the mechanisms leading to epilepsy after head injury in humans are unknown, but mounting evidence points to inflammation as a major contributor. Prior work done in Rai D'Ambrosio's lab suggests that mild cooling of the injured brain dampens inflammation and prevents epileptic seizures in the rat. Numerous already FDA-approved anti-inflammatory drugs that target a wide range of inflammatory mechanisms could reproduce the potent antiepileptogenic effect of cooling, but no data are yet available to support this hypothesis.

Rai and colleagues Nancy Temkin, Randy Chesnut, Gail Anderson, and John Miller will test these drugs with formal blind randomized studies to determine their antiepileptogenic potential and route them to phase III clinical trials.

CURE – Citizens United for Research in Epilepsy is a non-profit organization dedicated to finding a cure for epilepsy by raising funds for research and by increasing awareness of the prevalence and devastation of this disease.

Dr. Eric Chang Joins the Faculty

The Department of Neurological Surgery welcomes our newest Faculty Member, Dr. Eric Chang, Spine Surgeon at UWMC. In 2001, Eric earned a BS from MIT where he majored in Biology, Chemistry and Biomedical Engineering.

Dr. Chang received his medical degree from Harvard in 2005, and then was an intern at the Massachusetts General Hospital in 2005-2006. He was a resident in Neurological Surgery at MGH between 2006 and 2012. He completed a spine Fellowship at the New England Baptist Hospital in 2013 (Mentor: Eric Woodard, MD). In 2009, Dr. Chang was winner of the Wilder Penfield Fellowship offered by the Congress of Neurological Surgeons.



Dr. Eric Chang

Eric's clinical interests are in degenerative spine disease and spinal cord tumors. He will also take TBI trauma calls at HMC. He is interested in working with the Radiation Oncologists on designing new paradigms for treatment of metastatic lesions of the spine using Proton Beam Radiosurgery. He will be a dynamic addition to an already vibrant faculty.

The Ojemann Lab: Functional Brain Mapping and Brain Computer Interfaces

Functional Brain Mapping: Work began at the UW in 1948 by founding Chairman Arthur A. Ward, Jr. who formed a nucleus of clinical care and research activity within our department. Dr. Ward, who was trained in Montreal by Wilder Penfield, subsequently trained George Ojemann when the later was a UW resident. The senior Dr. Ojemann has since trained a number of epilepsy fellows including Daniel Silbergeld, who now holds the Ward Professorship in Neurological Surgery. Professor Jeffery Ojemann, the Richard G. Ellenbogen Chair in Pediatric Neurological Surgery, is also Director of Research and Program Director of the Department's NIH-funded R25 award "Neurosurgery Research Training in Interdisciplinary Neuroscience." This grant pairs clinicians and basic scientists with the goal of developing academic neurosurgeons who will combine clinical and investigative neuroscience.

Brain Computer Interfaces: The department's decades-long involvement in epilepsy treatment and research has provided unique opportunities to study brain function, especially brain mapping and, more recently, brain-computer interfaces. Current basic neuroscience research using electrocorticography (ECoG) aims to find tools for clinical and rehabilitative applications. Researchers from a wide range of backgrounds (neurosurgery, neurology, rehabilitative medicine, engineering, neuroscience and physics), are collaborating on projects that include tactile feedback, learning mechanisms, and recursive stimulation. The group is also involved in more fundamental questions, including cortical representation of simple and complex hand movements, the dynamics of cognition, language and higher-order non-linear interactions between brain areas, as well as ECoG and fMRI generated by studies of temporal lobe epilepsy. ECoG studies now underway using biofeedback test the capacity of patients to control brainwaves at an exact cortical location to move a computer cursor. Over the course of several days practice, a subject's precision and accuracy increases.

Research Questions: Paralysis of central origin, currently afflicting an estimated 5.6 million people in the United States alone, can be horribly debilitating. This number is expected to grow as the population ages. In addition, almost 1.3 million individuals have suffered a spinal cord injury. Neuroprosthetics, or brain-computer interfaces (BCIs), are devices that record neural activity from specific brain regions and convert that information to drive limb prostheses. Most current BCIs seek to use the slow P300 brainwave arising from active expectation, but some focus on the promise of the faster high gamma brainwaves. These latter appear correlated with movement, movement-thought and movement-imagery. Using new technology and both EEG and ECoG, the Ojemann laboratory strives to characterize these high gamma brainwaves, thereby improving the speed and efficacy of neuroprosthetics. This technology may one day help restore limb function to paralyzed patients.



UW Neurological Surgery Summer Neuroscience Program

In an August ceremony that included talks based on their summer research experience, the Department of Neurological Surgery was proud to graduate another class of summer neuroscience students. Chair Dr. Richard Ellenbogen presented certificates to these young scholars at a reception attended by lab mentors, parents, and staff. This program was the brainchild of Rich and Sandy Ellenbogen and their children who started the program and have funded it since 2008. In the past several years, we have received generous contributions from a host of generous patrons who are inspired by this program's vision and mission.

Since its inception in 2008, this 8-week summer program has now hosted over 60 students from 40 colleges and high schools in 15 different labs. Students attend Grand Rounds, Resident Teaching Conferences, and have a weekly faculty presentation that review clinical and research topics. Overall, seventeen faculty members have instructed this group, and students have attended over 100 separate Grand Rounds sessions. A unique feature of this program is the focus on clinical translational research and the opportunity to follow surgeons into the OR.

Because it's so cool, this is a program highlight and often a transformative experience. With some pride we note that many of these students have decided to pursue careers in the health sciences.

This summer students came from 2 high schools and 11 colleges. Each year we pursue at least two Rainier Scholars, from the intensive mentoring program for disadvantaged students in Washington state. Next summer, the department will develop further funding pathways in an effort to include more participants. We are proud of the students and grateful to the faculty and staff whose commitment and enthusiasm creates such an opportunity for them and for our neuroscience research future!

Eric Holland Joins the Department of Neurological Surgery

Eric Holland, M.D., Ph.D., an internationally renowned neurosurgeon and brain cancer researcher, has been recruited from Memorial Sloan-Kettering Cancer Center to join the [Fred Hutchinson Cancer Research Center](#) and the University of Washington. Eric earned a Ph.D in 1985 at the University of Chicago, and his M.D. at Stanford University in 1990. He was a resident in neurological surgery at UCLA. His research laboratory will be based at the Hutch where he will be Senior Vice President and Director of the Human Biology Division; an interdisciplinary program that encourages collaboration among faculty specializing in molecular and cellular biology, genetics and clinical research. This unique structure fosters laboratory-based, computational and clinical research, yielding discoveries that can be rapidly translated into treatments.



Dr. Eric Holland

Because genomic advances are increasingly important in solid-tumor oncology, Holland's expertise will strengthen Seattle's position in translational solid-tumor research. He will oversee the recruitment of new bench scientists at the forefront of solid-tumor translational research, including not only glioblastoma, but also breast, prostate, gastrointestinal and other cancers.

At UW Medicine, Holland will be Professor of Neurological Surgery, hold the Chap and Eve Alvord and Elias Alvord Chair in Neuro-oncology and will direct the [Nancy and Buster Alvord Brain Tumor Center](#). The Alvord Center was established in 2009 to promote, develop and coordinate interdisciplinary brain tumor care and research among physicians and scientists in a variety of fields including neurosurgery, neurology, neuropathology and radiation oncology.

Dr. Holland will recruit a team of internationally renowned brain cancer investigators to implement the vision of the late Ellsworth “Buster” Alvord, a Seattle philanthropist and former head of the UW Department of Neuropathology. Alvord and his family funded five endowed chairs in five different UW Medicine departments to create a multidisciplinary research center focused on brain cancer. Dr. Holland’s own research is the development of genetically accurate mouse models of gliomas in search of better therapies.

Neurological Surgery International Fellows



Globalization is one of the most powerful social forces of our time and represents the mixing of ideas, cultures and peoples on an unprecedented scale. Internationalization may be seen as our responses to these forces and the challenges and opportunities they present. UW Neurological Surgery has taken a leading role in establishing positive educational opportunities for Fellows from around the world. In the past 3 years, 8 of our faculty have hosted a total of 46 Fellows, with tenures ranging between short duration observations to more than year-long involvements with clinical research projects. Furthermore, the number of international Fellows is increasing substantially: 9 in 2001, 16 in 2012, and 21 in 2013.

Much of this increase results from Dr. Fangyi Zhang’s work with the Chinese Neurosurgical Society – a bridge building educational initiative started in 2011 that includes both hosting Fellows and faculty lectures at Chinese Universities. The range of our Fellow’s home countries is impressive and, in addition to China, includes students from Brazil, Japan, India, Italy, Mexico, The Netherlands, Pakistan, South Korea, Turkey and the United Kingdom.

This growing international network also reflects the current nature and direction of clinical and basic science research, away from solely national enterprises and toward more global collaboration. Our international research engagement now involves participation in basic research as well as multinational clinical trials with universities and clinical centers in Latin America, Europe and Asia.

The Neurohospitalist Team – 2013



Sarah Schepp



Lisa Espiritu



Path Rajaguru

The report of the ACGME Work Group on Resident Duty Hours published in 2002 imposed limitations on duty hours for house officers. This action abruptly changed the process of graduate medical education as well as the ability of academic institutions to care for sometimes extraordinarily ill patients. Although work week limitations have yet to demonstrate the improvements that were predicted would result, Level One Trauma Centers such as Harborview had to develop new solutions to the manpower shortages that were created.

With the cooperation of Dr. Richard Goss, the Hospital Director, and many others in administration, Chairman Richard Ellenbogen and Chief of Service Louis Kim have helped to build a Neurohospitalist team that now manages the ward and outpatient neurological surgery service at HMC. Recently, the two senior Professors of Neurological Surgery who clinically manage the Neurohospitalist Team were augmented by 2.1 internal medicine FTE to provide increased faculty oversight for the mid-levels.

As of the first of September, Neurologist Sarah Schepp, Internists Lisa J. Espiritu and Parth Rajaguru joined Mark Zaros, Director of the HMC Hospital Medicine Program, to provide imbedded internal medicine attendings on the Neurohospitalist Team. We are now able to provide coverage twenty-four hours a day, every day, for the ward inpatients. In addition, there are three mid-levels to cover the clinics.

Although this effort has taken several years to be realized, the Department of Neurological Surgery is now fully staffed with talented, enthusiastic, and collegial people to insure that patients come first. We are proud of our Neurohospitalist Team.



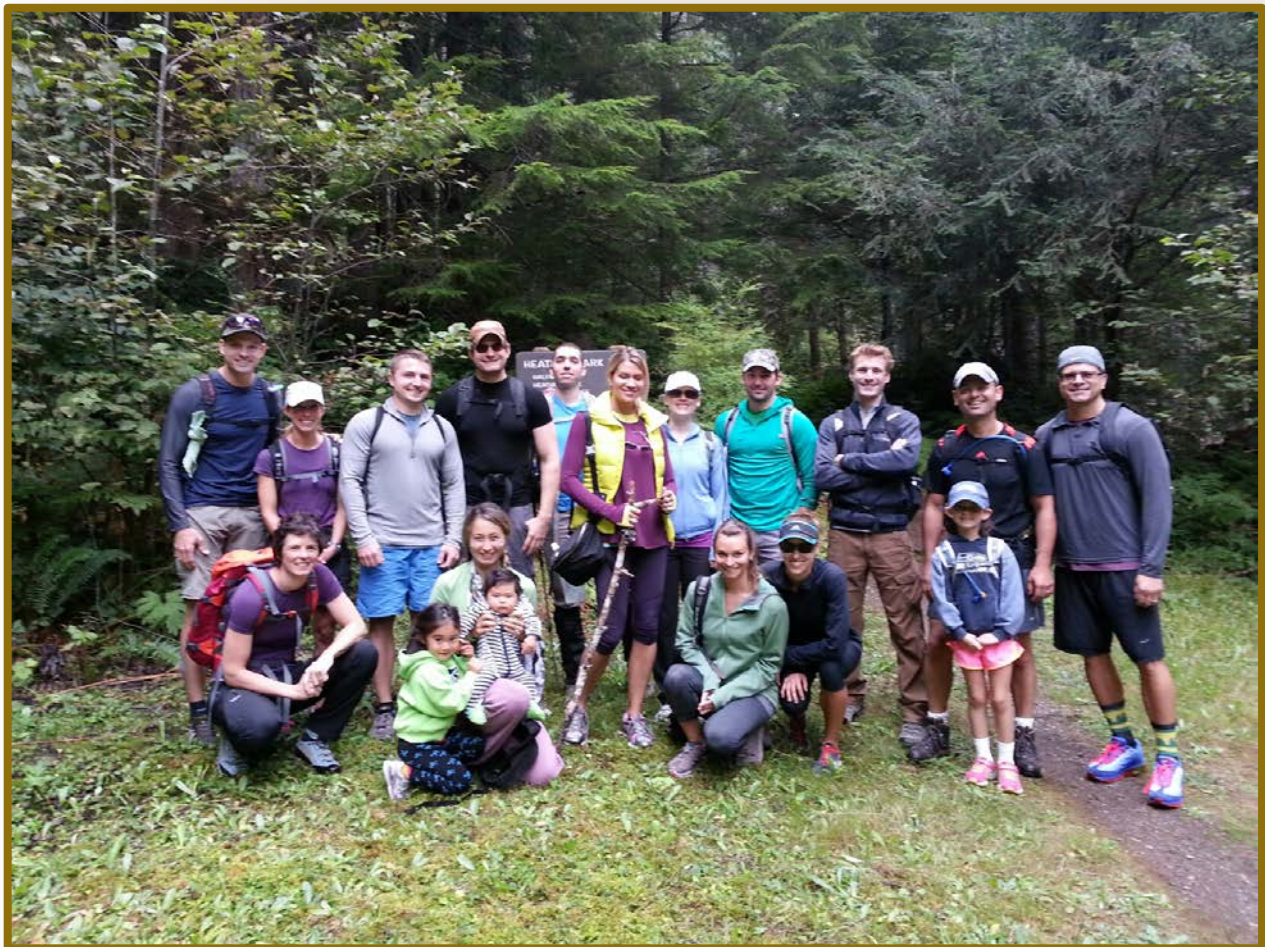
Dr. Mark Zaros



Births

Our Neurohospitalist Team member ARNP Michelle Phan and her husband Brian Levy, announce the birth of their son Aaron on July 5, 2013 at 9:39 pm. He entered life at 6lb, 5oz, and measured 19 inches long. Michelle notes that Aaron is doing well and has been eating fine. He keeps them up at night but no other problems. She is uncertain whether he looks Jewish or Asian.

Hike to the Heavens



9 tough department members and their friends/family participated with Dr. Louis Kim (taking the photo and therefore not pictured) in his sixth annual Hike to the Heavens.

Puzzler



Dr. Minku Chowdhary
Chief, Neurosurgery
Overlake Hospital



This man's most famous book had to be rewritten due to protests from other researchers in the field along with some adoptive parents and some feminists. His other research included studies on the role of a group of people whose name derives from Ancient Greek and translates as "female slaves." Who was he, and what role did he play in modern healthcare?

Answer to July's Puzzler

July's Puzzler: While someone else got the Nobel Prize, this famous neurosurgeon laid the groundwork for the award with his experiments to control epilepsy with commissurotomy. He died before he could write about the intralaminar nucleus of the thalamus gland.

Answer: **Joseph E. Bogen, MD** played a key role in development of the split-brain experiments that ultimately won Roger Sperry of the California Institute of Technology, the 1981 Nobel Prize in Physiology or Medicine. In the early 1960s, Bogen and Dr. Philip Vogel developed an operation to divide the corpus callosum in an attempt to limit the spread of epileptiform discharges to one hemisphere. Bogen, who knew Sperry had performed similar operations on animals, suggested he study these patients. Together, the two determined that each side of the brain had independent capabilities and consciousness. In recent years, Bogen attempted to pinpoint the area of the brain where consciousness is located. He concluded it was to be found in the intralaminar nucleus of the thalamus gland and was preparing a book on his findings when he died. Perhaps the elusive secret of consciousness died with him.



We remain eager to publish stories and photos about all aspects and activities of the Department. Please share your memories, ideas and suggestions for stories and news items that expand our common ground. Please contact us at these email addresses:

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Richard G. Ellenbogen, M.D.
Richard Rapport, M.D.
James Pridgeon, MHA
Jana Pettit, MBA
Christina Buckman

rge@uw.edu
rappor@uw.edu
pridgeon@uw.edu
jmpettit@uw.edu
cbuckman@uw.edu