



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

# The Montlake Cut

*Spring 2016*

## A View From Puget Sound

Welcome to the spring 2016 edition of ‘The Montlake Cut’. In this issue we bring you news of Dr. Andrew Ko’s developing program to treat Parkinson’s Disease with Deep Brain Stimulation, new funding for our highly successful Neurological Surgery Summer Student Program, and an ongoing progress report on Dr. Samuel Browd’s collaboration with VICIS to perfect a new football helmet designed to reduce risk of concussion.

In addition, we announce our new grant from the Paul G. Allen Family Foundation supported consortium to develop new research tools addressing still unknown structural and biological changes in TBI-related neurodegeneration. We are especially proud to announce that five of our clinical faculty have been recognized as “Top Docs” by Seattle Magazine and Seattle Met, and also that our overall publication count for 2015 again underscores our academic engagement as a department. We are especially pleased that 25% of our publications included neurological surgery residents as co-authors, including 10 as first authors.

And, in addition to announcements regarding upcoming meetings, we bring you a portrait of consummate “Soccer Mom” Kelley Chaddock, Departmental Manager for Research and Administration, whose daughter Emily will play for Washington State University in the fall. Finally, we remain indebted to Dr. Minku Chowdhary who continues to keep us entertained and guessing with another intriguing edition of the “Puzzler”. Please enjoy this edition and remember, as always, we welcome your feedback and appreciate your support of our recognized world-class UW Department of Neurological Surgery.

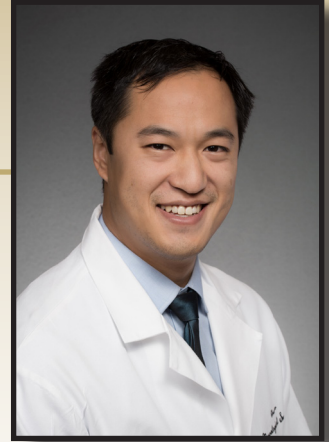
**Richard G. Ellenbogen, MD, FACS**  
**Professor & Chairman**  
**Department of Neurological Surgery**

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## *Surgeon and Patient Discuss Parkinson's Disease*

On Saturday March 19 at 7:30 am Andrew Ko, MD, University of Washington neurosurgeon and Steven Gilbert, PhD, toxicologist and Parkinson's Disease (PD) patient discussed Deep Brain Stimulation (DBS) on the Mike McCormick "Mind over Matters" show on KEXP (90.3 FM).



**Dr. Andrew Ko**

Parkinson's Disease, which results from the loss of dopamine-producing cells in the central nervous system, is an insidious, gradually progressive neurological disorder that affects 1 million people in the US. The first symptoms of PD are usually tremor or shaking, slow movements, difficulty with walking, joint stiffness, and weakness. While there is no known cure for PD, there are a variety of drugs to treat the symptoms of the disease.

A relatively new and promising treatment is Deep Brain Stimulation (DBS). Permanent electrodes are placed in the brain and connected to an electrical stimulator. Many PD sufferers have found that DBS can dramatically reduce their symptoms and restore function. Drs. Ko and Gilbert had a conversation about PD and the DBS surgery from the perspective of both surgeon and patient.

Andrew L. Ko, MD is a UW assistant professor in the Department of Neurological Surgery and specializes in functional and restorative neurosurgery, DBS, epilepsy, and surgical interventions for pain. Dr. Ko earned his M.D. from the University of Illinois in Chicago, completed a neurosurgical residency at the University of Washington, and subsequently did a fellowship in stereotactic and functional neurosurgery at the Oregon Health & Science University. He is currently the head of the functional and restorative neurosurgery program at the UW.

Steven G. Gilbert, PhD, DABT, Director and Founder of the Institute of Neurotoxicology and Neurological Disorders (INND), and an Affiliate Professor in the Department of Environmental and Occupational Health Sciences, University of Washington. His research focused on neurobehavioral effects of low-level exposure to lead and mercury. His book, *A Small Dose of Toxicology- The Health Effects of Common Chemicals* was published in 2004 and the 2nd edition is available for free as an E-book. He also maintains the wiki based web site Toxipedia ([www.toxipedia.org](http://www.toxipedia.org)).

# *Neurological Surgery Summer Student Program*

## *Funded by NIH Grant*

James Pridgeon, MHA

We are delighted to share the excellent news that our **Neurological Surgery Summer Student Program** has been awarded a five-year \$500,000 training grant from the NIH, National Institute of Neurological Disorders and Stroke, entitled Summer Research Experience in Translational Neuroscience and Neurological Surgery. Dr. Richard Ellenbogen is Principal Investigator and Program Director, and Mr. James Pridgeon is Co-Investigator and Program Administrator. This award is a reflection of both the caliber of our past students and the exceptional dedication and hard work of our faculty mentors, lab and support personnel.

Every year our Department invites a group of talented and highly motivated students interested in neuroscience to participate in our 8 week Neurological Surgery Summer Student Program which consists of a lab placement, attendance at Neurological Surgery Grand Rounds, OR observations, Friday talks by faculty to this group, and a final student PowerPoint presentation and graduation in front of family, friends and mentors. Founded in 2008, to date the program has hosted 88 students (including 9 Rainier Scholars) from 56 different schools. Twenty-four neurological surgery mentors have been involved and 22 Friday seminar speakers have volunteered time to talk with our summer group. Fourteen of our clinical faculty have given their time to afford shadowing opportunities for our students. Our results have been outstanding with 13 of the 50 students who have graduated from college being accepted into medical school or graduate programs in neuroscience.

Starting with summer 2017, we are able to support students at higher stipend levels and attract those who otherwise would not be able to participate. In addition, we have funding for 3-4 students from out of town so we will be able to broaden the program. The result of our combined efforts in attaining this NIH award has been to elevate the standing of our program nationally. While we attracted 53 Program applicants for summer 2105 (all from Seattle), this year we received 260 applicants from 143 schools in 36 states, DC, and Puerto Rico for the 12 program places available. In addition, our applicant pool also reflects the diversity of our nation: 22% of applicants were from underrepresented groups. We are now deciding on our final group of students and expect to be able to place only 5% of our applicants using the NIH funds available.

Congratulations and thank you to all of our mentors, lab and other support personnel and our past students for helping us achieve this signal award in STEM education!

## *VICIS' Novel Helmet Design Attracts Money*



The Zero 1 Helmet From VICIS. - Photo by VICIS

“From Hall of Fame quarterbacks to prominent spine surgeons, more than 140 investors are betting on a Seattle startup that has spent two years developing a high-tech football helmet.” In a recent interview with GeekWire, VICIS CEO Dave Marver said that the “25-person company just closed an \$8 million seed round which will help bring its innovative helmet to market later this year.”

The goal of this helmet is to make football safer. The inventors of this new technology are engineers and physicians, who have put forth a novel design that has tested amazingly well in the lab and cleared all the regulatory hurdles. They hope the helmet will work on the field by absorbing more energy on the outside of the helmet and the internal cushions, so far less energy is transmitted to the skull and brain.

Investors include former pro football players like Roger Staubach, as well as neurosurgeons and orthopedists. Though investors come from a variety of backgrounds, Marver said, “those backing VICIS all share a common trait: They want to make football safer. We were able to raise money from individuals who have expertise in this space and a passion for what we are doing. It’s given us a lot of freedom and flexibility.”

The new money for the new start-up company, spun off from the innovations in 2015 by UW Professor of Neurological Surgery Sam Browde, M.D, Ph.D and UW Chair of Mechanical Engineering, Per Reinhardt, Ph.D. This successful design and production run will allow VICIS to ship its new, more protective helmets to several NFL and college teams in time for the coming football season.

“As we progressed in these past two years, the need has grown more intense and we feel like we have a real obligation to get this technology out there for the benefit of the athlete,” CEO Marver noted. “We’ve raised more money to do more and move faster.”

In the GeekWire interview, VICIS is quoted as saying the “ZERO1 helmet provides more protection against skull fracture and traumatic brain injury than the traditional helmet used by athletes today. The helmet differs from other available options because of a unique outer shell material that is designed to mitigate the forces thought to cause TBI on the football field and in other contact sports. We’ve redesigned the helmet from scratch to provide protection against not just skull fracture, but from other forms of traumatic brain injury.”

## ***Paul G. Allen Foundation Supported Consortium Research Tools Now Available On New Website***

In November 2013, the ***Department of Neurological Surgery*** received a major ***Paul G. Allen Family Foundation*** award to study the effects of Traumatic Brain Injury with colleagues at ***Group Health Cooperative***, the ***Allen Institute for Brain Sciences***, and the University of Washington Departments of Medicine and Pathology/Neuropathology. Professor and Chairman ***Richard G. Ellenbogen*** is one of the primary investigators for the study. The research project entitled Structural and biological changes in TBI-related neurodegeneration addresses anatomic and biological effects of TBI that remain largely unknown. The Allen award was expected to accelerate TBI research overall and ultimately lead to improved patient care and outcomes from injury. That promise has now been realized and expanded with the publication of a major set of research tools found on the Aging, Dementia and TBI Study website here:

***<http://aging.brain-map.org/overview/home>***

The Aging, Dementia and Traumatic Brain Injury Project is a detailed neuropathologic, molecular and transcriptomic characterization of brains in control and TBI exposure cases from a unique aged population-based cohort from the Adult Changes in Thought (ACT) study. The project was developed by a consortium consisting of the University of Washington, Group Health Research Institute and the Allen Institute for Brain Science. Project Principal Investigators are Drs. Richard Ellenbogen and C. Dirk Keene at the University of Washington; Eric Larson at the Group Health Research Institute; and Ed Lein in the Allen Institute for Brain Science.

The following data sets are available: Histology and Immunohistochemistry; High-resolution in situ hybridization image data; RNA sequencing data; Protein quantification by Luminex; Isoprostane quantification; and Specimen metadata.

We are pleased to offer these improved tools to address these serious public health problems:

***<http://aging.brain-map.org/overview/home>***



# *Top Docs!*



**Dr. Richard G. Ellenbogen**



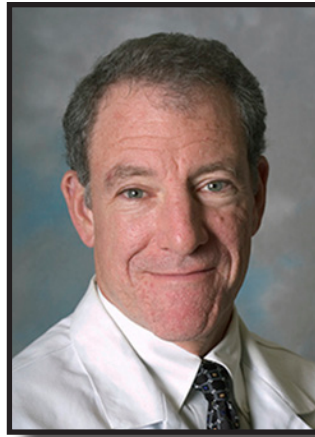
**Dr. Laligam N. Sekhar**



**Dr. Jeffrey G. Ojemann**



**Dr. Lewis Kim**



**Dr. Daniel L. Silbergeld**

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*Seattle Magazine* and *Seattle Met* name 5 faculty members to peer nominated top doctor lists.

Congratulations to Neurological Surgery faculty members **Richard G. Ellenbogen**, **Jeffrey G. Ojemann**, **Laligam N. Sekhar**, and **Daniel L. Silbergeld** for being named to Seattle Magazine's list of Top Doctors 2016 in the February edition. They are among 413 best physicians in the Puget Sound region as chosen by their peers. The link to Seattle Magazine's story is here:

<http://www.seattlemag.com/article/seattle-magazines-top-doctors-2016>

Medicine coverage is found here: <http://www.uwmedicine.org/about/awards/top-doctors>

**Drs. Louis J. Kim**, Laligam Sekhar and Daniel Silbergeld were listed in the 2015 *Seattle Met* survey for adult neurological surgery, and Drs. Richard Ellenbogen and Jeffrey Ojemann were recognized in the pediatric neurological surgery category. The 2015 Seattle Met Top Doctors survey asked more than 1,500 doctors, nurses and physician assistants in the area to nominate peers based on the question, "If you or a loved one needed medical care, whom would you choose?" Of the 11,473 nominations received, the top vote getters were considered semifinalists. Additional information is available on the UW Medicine website: <http://www.uwmedicine.org/about/awards/top-doctors>

***Dr. Richard Ellenbogen has been recognized as one of Seattle's Top Docs 14 years in a row!***

## *Announcements & Publications*

UW Neurological Surgery Faculty, Residents, Fellows and Staff recorded an impressive 149 publications in 2015. Amongst many standouts it is noteworthy that Dr. Christine Mac Donald had 2 of her 6 articles appear in the leading journal *Brain* during this time.

Other prolific publishers of 2015 included Drs. Ellenbogen, Kim, Levitt, Sekhar, and Temkin with more than a dozen publications each.

We are especially proud of the fact that 37 publications included Neurological Surgery Residents, with first author publications by Drs. Josh Abecassis, Robert Bonow, Peter Chiarelli, Chibawanye Ene, Brian Hanak, Sean McEvoy, Lynn McGrath, Ryan Morton, John Nerva, and Jacob Ruzevick.

### *At Seattle Children's Hospital Neurological Surgery*

Professor Jeffrey Ojemann reports that the volumes on the service at Seattle Children's Hospital increased by 25-30% last year. There is an active recruiting effort to enroll patients in the "tumor paint" trial in an effort at more complete resections, and a concomitant effort to recruit more faculty with experience caring for children with tumors.

### *51st Annual Meeting of the Rocky Mountain Neurosurgical Society to Feature Dr. Richard Ellenbogen as Honored Guest Speaker*

The 2016 51st Annual RMNS Annual Meeting will be held at the Lodge at Whitefish Lake, Montana June 18-22, 2016. The general scientific program will offer a broad spectrum of neurosurgical topics in an atmosphere that seeks to stimulate and encourage open and collegial discussion amongst leaders in the field. This sharing of individual clinical experiences is one of the highlights and major attractions of the RMNS meeting. We are pleased to announce that this year, Dr. Richard Ellenbogen will be the RMNS Honored Guest Speaker.

# *Announcements Continued*

## *Western Neurosurgical Society 62nd Annual Meeting - September 9-12, 2016 Park Hyatt Aviara Resort - Carlsbad, California*

### **First call for abstracts:**

Abstracts for the WNS 62nd Annual Meeting should be submitted directly to WNS Program Chair, Dr. Marvin Bergsneider at <http://www.westnsurg.org> by May 1, 2016.

The meeting will include 3 mornings of scientific paper presentations plus the Cloward Award and George Ablin Memorial lectures and two separate mini-symposia. Department Chairmen and Program Directors have been encouraged to expand participation by neurosurgical residents. The Society will offer awards for best basic and clinical neuroscience papers by a resident, and will cover registration expenses for abstracts selected for presentation. The recipient and spouse of the Resident Award will also have their transportation and hotel registration paid.

## *Department Soccer Mom*



Department of Neurological Surgery Research and Administration Manager Kelley Chaddock isn't a great soccer player, but her daughter Emele is. A three-year letter winner at starting forward on the Kamiak High School in Mukilteo, she had to sit out part of her sophomore season and then all of her junior season to recover from two ACL injuries. Returning for her senior year, Emele led the Knights to the final round of the district playoffs. Kamiak finished second in the WESCO Conference (4A) and she was named to the WESCO All-Area First Team and WESCO All-State Second Team.

"You can't tell that she's had torn ACLs," her coach Beth Stewart said she's back in at 100 miles per hour."

Prior to her sophomore year, Chaddock made a verbal commitment to play at Washington State University. The Cougars' coaching staff didn't back off their offer — even after Chaddock's second knee injury. Watch for Emele to be playing great soccer for the Cougars this coming year.





**Dr. Minku Chowdhary**

Director, Neurosurgery  
Overlake Hospital

# Puzzler



## *New Puzzler*

**Q:** As we get older, this slows down, but the answer also has another meaning. The force used to split an atom, creates destruction, yet this man is symbolic of the opposite. Who is he, and how is this related to the answer in the first part of the question?

## *Previous Puzzler*

**Question:** From its native language, which is highly agglutinated, the name of this condition is an oxymoron of proposed effects which can occur pregnant females. What is the disease process?

**Answer:** From the Lugandan word meaning “overgrown”, Zika virus has been purported to cause microcephaly by the Brazilian government due to a rapidly increasing prevalence of microcephaly cases in their country with the recent outbreak of Zika virus.

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:

**Editor-in-Chief,** Richard G. Ellenbogen, MD, FACS  
[rge@uw.edu](mailto:rge@uw.edu)

**Editor,** Richard Rapport, MD  
[rappor@uw.edu](mailto:rappor@uw.edu)

**Associate Editor,** James Pridgeon, MHA  
[pridgeon@uw.edu](mailto:pridgeon@uw.edu)

**Director,** Jana Pettit, MBA  
[jmpettit@uw.edu](mailto:jmpettit@uw.edu)

**Publications Specialist,** Christina Buckman  
[cbuckman@uw.edu](mailto:cbuckman@uw.edu)

**The Puzzler-in-Chief,** Minku Chowdhary, MD

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