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M.D., F.A.C.S.

The Montlake Cut

Fall 2015

A View From Puget Sound

In this issue we are pleased to report on several exciting new developments in our Department, including co-sponsoring and co-directing the new UW Medicine Sports Health and Safety Institute to advance research, education and advocacy for prevention and treatment of sports related injuries.

We also feature an inaugural report from R4 Resident Robert Buckley on his experience and initiatives for resident education in China.

I am pleased to report we have just graduated another outstanding class of Neurological Surgery Summer Student Program students, this year marking both the most applicants (53) and lab placements (15 students) to date - and we are especially pleased to highlight Professor Robert Hevner's role in leading students on the second annual Little Si Hike. This has become a highlight for our summer program participants and we thank Bob for his outstanding hospitality, leadership, and courage!

In this issue our Research Focus features Associate Professor Raimondo D'Ambrosio's work on novel treatment for acquired epilepsy, and we are delighted to welcome new staff members Natalie Smirnova and Katie Portante as well as Resident Kelley Collins and her husband Tristan Trutna's new daughter Annelise.

Finally, Dr. Minku Chowdhary again challenges us with an entertaining and genuinely puzzling Puzzler feature.

Sincerely,

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

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New UW Medicine Sports Health and Safety Institute

UW Medicine announced the formation of the new UW Medicine Sports Health and Safety Institute, to advance research, education and advocacy for exercise and prevention and treatment of sports related injuries. In addition, the Institute will focus on the health benefits of sports and how to make these activities safer. The establishment of this first-of-its-kind Institute is made possible by a foundational donation of \$2.5 million from the National Football League, and additional millions of dollars from community philanthropists.

The Institute will be led by, **Dr. Stanley Herring**, Medical Director of Spine, Sports and Orthopedic Health and **Dr. Rich Ellenbogen**, Professor and Chair of Neurological Surgery. Drs. Ellenbogen and Herring also co-direct the UW Medicine Sports Concussion Program at Harborview Medical Center. In addition, Dr. Ellenbogen is co-chair of the NFL's Neck and Spine Committee, of which Dr. Herring is also a member.

Full details on the program can be found here on the HS Newsbeat website:

<http://hsnewsbeat.uw.edu/story/nfl-helps-uw-medicine-launch-sports-safety-institute>

and

<http://hsnewsbeat.uw.edu/brief/uw-medicine-open-first-its-kind-sports-health-and-safety-institute-major-foundational-gift>

The Department's China Service by Robert Buckley, MD



Dr. Robert Buckley & Dr. Wang -
Beijing Tsinghua Changgung Hospital

This past July, I was privileged to inaugurate the UW rotation with our Chinese neurosurgical colleagues. With Drs. Zhang and Ellenbogen's assistance, I spent three weeks learning about how neurological surgery works there, and of course got a taste of the legendary culture and history of China.

My time was split between two academic neurosurgical centers in Beijing and Tianjin as an observer in both the operating rooms and the clinical service. This provided an insight into the Chinese medical system and the daily life of our neurosurgical counterparts. Overall surgical care is generally good, though there are significant limitations secondary both to resource availability and Chinese culture. The government provides basic health coverage to all Chinese citizens, however this is much less comprehensive than what is expected in the West. The physician-patient relationship is also much different in that the Chinese model is in general more adversarial and paternalistic than the accepted interactions in the UW and Europe. The physician-nurse relationship is similarly archaic, with nursing assessment and input generally little emphasized. In China, patient's families play a critical role both in medical decision-making and in performing the basic patient care provided in our hospitals and clinics by nurses. Most importantly, however, the Chinese physicians, nursing and support staff I met and worked beside in China were amazingly hardworking, inquisitive and driven to improve. Despite the limitations they must endure, they have confidence that their dedication and drive will bring improvements.

In addition to the professional experience, my time in China was personally rewarding. I was able to see many cultural and historical landmarks, including The Great Wall, Forbidden City, and Summer Palace. I was introduced to the many delights of Chinese food and drink, broadening my palate with such delicacies as spine, tail, stomach, and duck foot skin. The most personally satisfying part of my trip was the chance to meet and make friends with many of the incredibly generous and friendly Chinese people.



Dr. Richard Ellenbogen & Dr. Fangyi Zhang



Dr. Robert Buckley & Dr. Richard Ellenbogen

Neurological Surgery Summer Program Highlights



Anthea Phuong &
Dr. Ellenbogen



Richard Morrison, PhD, Adam
Uppendahl, & Dr. Ellenbogen



Dr. Ellenbogen &
Reid Watson



Dr. Ellenbogen, Nino Ramirez,
PhD & Courtney Pharr

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**. This consists of a lab placement, attendance at Neurological Surgery Grand Rounds, OR observations, Friday talks by faculty to this group, and a final student Power Point presentation and graduation in front of family, friends and mentors. Founded in 2008, 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. Results can be measured by some of the testimonials noted below and also by the fact that 13 of the 50 students who have graduated from college have been accepted into medical school or graduate programs in Neuroscience.

Summer 2015 was a truly outstanding class. We had both the highest number of applicants (53) and the largest class to date with 15 students from 12 different schools participating. The presentations at our graduation session were excellent and clearly reflected both our faculty's hard work and student's direct engagement in our labs.

Student evaluations bear out my conviction that we are providing a unique and extremely valuable educational experience. In addition to high marks for all elements of the program, here are some comments from our anonymous evaluation tool:

"I honestly loved everything about this program from the shadowing to the lab experience. Everything was absolutely perfect and has truly made an everlasting impact on my life and future."

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"It was a phenomenal program and I feel extremely blessed to have been a part of it."

.

"I thought the program was amazing, truly the most inspiring and insightful experience I have had in my life so far."



Rachel Catterall &
Anna Cichocki



Jeannette Schwensen



Jacob Kovalchek &
Mackenzie Palmer



Adam Uppendahl



Carolyn Tran &
Caitlin Kierum

Neurological Surgery Summer Students Hike on Little Si: A Recreational, Educational, and Humanitarian Mission

On August 9th, about a dozen Neurological Surgery summer students and friends joined Dr. Hevner for a hike on the Little Si trail near North Bend. For most students, despite strong ties to the Seattle area, this would be their first hike on Little Si or Mount Si, the most popular trails in the state. The weather was clear, warm, and dry with excellent trail conditions. About halfway up the 2.2-mile (each way) trail to the summit, presented with a choice, everyone elected to take the more challenging “scrambling” route up steep, open rocky slopes. This was a very focused and fit group who made quick time. While scrambling, the group discussed practical and theoretical aspects of traumatic brain injury, e.g., associated with falls during outdoor activities. There was also a serendipitous element of community service to the climb, as a lost woman followed our group up the scrambling trail. At the top, she thanked us for leading her up the trail, which was much scarier than she expected. (The exhilaration of overcoming her fears outweighed her surprise when we told her that she had missed the much easier main trail.) After the hike back down, the students convened at Dr. Hevner’s for a selection of light food and drinks, and many went on to explore the other attractions of the Snoqualmie Valley, such as Snoqualmie Falls and Scott’s Dairy Freeze.



Raimondo D'Ambrosio, PhD: Novel Treatments for Acquired Epilepsy



Dr. D'Ambrosio's research group focuses on the development of novel treatments for acquired epilepsy. They have developed the first realistic rat model of post-traumatic epilepsy, and are using it to understand the cellular mechanisms of genesis and progression of human post-traumatic epileptogenesis, as well as develop possible treatments. He has recent awards from the NIH (NINDS R21) to study novel inflammatory targets to prevent post-traumatic epileptogenesis, and the Life Sciences Discovery Fund to conduct a proof of principle test of a new therapeutic modality for drug-resistant focal epilepsy.

Dr. D'Ambrosio's NIH NINDS R21 examines the critical problem of post-traumatic epilepsy. Traumatic Brain Injury (TBI) is the leading cause of acquired epilepsy in Western societies, and accounts for ~ 4% of epilepsy in the general population. The mechanisms of human epileptogenesis after TBI remain unknown, and no treatment exists to prevent it or even modify its development. Thus, many head injury patients develop post-traumatic epilepsy (PTE) and require life-long treatment. Mounting evidence indicates a role for inflammation in acquired epileptogenesis. Inflammation is a consistent feature of both the injured brain and of the epileptic brain, and several inflammatory mediators also affect seizure susceptibility. The rational development of anti-inflammatory prophylaxes for PTE requires understanding of various components of inflammation that are necessary for post-traumatic epileptogenesis. This has been hindered by the lack of an effective treatment that prevents post-traumatic epileptogenesis. Using a realistic model of PTE that induces progressive inflammation and epileptogenesis, Dr. D'Ambrosio's group has recently identified a powerful anti-epileptogenic effect of mild focal cooling (D'Ambrosio et al., Ann Neurol doi: 10.1002/ana.23764). His R21 aims to use mild focal cooling as a tool to understand which aspects of the inflammatory processes in the perilesional neocortex that becomes epileptic are necessary for epileptogenesis. Specifically, he will use gene-array, RT-PCR, Luminex-based assays and immunohistochemistry to lay the ground work necessary to identify specific features of inflammation in the incipient epileptic focus that can be targeted for prophylactic intervention.

Dr. D'Ambrosio's CURE award builds on this research and further examines the anti-epileptogenic potential of a variety of FDA-approved anti-inflammatory drugs. There are many safe FDA-approved anti-inflammatory drugs that target different aspects of inflammation and that, alone or in combination, could reproduce the potent anti-epileptogenic effect of mild cooling without persistent side effects. In blind and randomized studies, the proposed work will assess anti-epileptogenic effects of aspirin, indomethacin, celecoxib, minocycline, progesterone and rapamycin.

Dr. D'Ambrosio's Life Sciences Discovery Fund (LSDF) award builds on this research. Epilepsy can successfully be treated with drugs in only about 60% of patients. The remainder, particularly with focal non-convulsive seizures, can only be treated with removal of the affected area of the brain, which itself is completely effective only about half the time. The observation that cooling the affected area of the brain prevents seizures during neurosurgery will be exploited with a prosthesis that, if effective, would be safe and inexpensive. The pre-clinical work in rats has shown that focal cooling is effective in drug-resistant focal epilepsy. The LSDF award will determine in a small human proof-of principle trial whether this new therapeutic modality can be translated to humans. Therma Neurosciences, a startup company, has been spun-off the Department of Neurological Surgery and the University of Washington to facilitate this endeavor.

Neurological Surgery Welcomes New Staff Members



Neurological Surgery welcomed **Natalie Smirnova** on July 1st to the admin team at NJB. Natalie is assistant to Director, Jana Pettit, and is responsible for the department's appointments and promotions, visas, visitors and providing support for hiring administrative staff. Natalie was most recently employed by Planned Parenthood and enjoys cooking, sewing, knitting and hiking in her spare time. Welcome Natalie!



Neurological Surgery welcomes **Katie Portante** as the Residency and Medical Student Coordinator. Katie has been the “go-to” person in the UW School of Medicine administrative offices for students, faculty and staff, as she's most recently supported clinical clerkships and curriculum renewal. A few interesting facts about Katie: She used to have a seasonal job at Glacier National Park, Montana and it's still one of her favorite places on earth. She also leads tours of Pioneer Square on Saturdays, and her favorite workout is kettlebells. Welcome Katie!

Department of New Babies



Resident Kelly Collins and her husband Tristan Trutna announce the birth of daughter Annelise Lily Trutna, born 8lbs, 1oz. on July 23rd. Normocephalic, fontanelle soft, age-appropriate reflexes all intact. She is dangerously cute and very well-tempered, though she head butts as a feeding cue, which leaves me concerned about baby TBI if she ever gets too hungry. From the beginning she has converted milk to dirty diapers efficiently, but we are excited to see all sorts of more interesting behaviors emerging every day. She seems to see things a little better these days and has developed a social smile.

“I have recovered pretty well from the birth process, which was an interesting first-hand experience on being a patient and then a temporary invalid.”





Dr. Minku Chowdhary

Director, Neurosurgery
Overlake Hospital

Puzzler



New Puzzler:

Today, we will decode a medical mystery. This organism works rapidly to kill its human host. Despite being one of many species in its genus, it is the only one that infects humans. Fill in the following blanks to get the clues to solve this puzzle:

1. Johnny was the _____ of many jokes.
2. This food __ (verb) __ was developed during Harry Truman's presidency and was the brainchild of an advertising executive who the product is actually named after.
3. Buster was a world renowned bird hunting dog, a veritable __ (noun) __.

Bonus Clue: The answers to 2 and 3 rhyme.

What are the answers for the blanks above, and what is the organism?

Double Secret Bonus: If the answers above have a correlation with the way the clues are written, what is it?

Previous Puzzler: While you can get parasitic diseases from a sand-fly bite from a trip to Brazil, these two things have another cancer connection that is related to a man from Canton who was born in the year of the dragon. Who is he and what is the connection?

Answer: Frederick Li, who was born in Canton, China on May 7, 1940, who alone with Joseph Fraumeni, discovered that p53 went along with familial cancer syndromes, of which there is a prominent Brazilian subtype. P53 was named because it was thought to be a 53kDa protein molecule, but it is actually only 43.7kDa which is the same size as a salivary protein found in the Sand Fly.

<http://www.nytimes.com/2015/06/22/health/frederick-p-li-who-proved-a-genetic-cancer-link-dies-at-75.html?ref=obituaries&r=0>

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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