



*The Montlake Cut*

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## Welcome to the New R-1s: *Some Are Born to Sweet Delight*

...Wm. Blake

Who knows what neurological surgery will be like when Drs. Kelly Collins and Brian Hanak, two more spectacular additions to our training program, will at last turn in their pagers and cell phones, strip off their scrubs, and skip happily out the door to start their careers.

Sorting through the several hundred applicants for the two or three resident positions each year is a task that occupies Kelly Jain, the Department Administrative Specialist responsible, for much of her time, and the entire faculty for at least several days.

But, it's worth it to find the smart, dedicated, industrious, and already heroically accomplished residents that we do match in the end.

### Kelly Collins, MD

Kelly Collins was born in Pasadena, but took her engineering interests to Carnegie Mellon before entering the University of Michigan School of Medicine. She was Phi Beta Kappa as an undergrad, and also inducted into the honor societies Tau Beta Pi (Engineering) and Eta Kappa Nu (Electrical and Computer Engineering).

At the U of M, she collected more honors: the Edgar Kahn Neurosurgery Award and the Dean's Award for Research Excellence (top research in the graduating class). She also won the Ruth AOA Research Fellowship in 2009-10, a prize that funds a year of research for a single student.



*Kelly Collins, MD*

# Welcome to the New R1's: *Continued . . .*



*Brian Hanak, MD*

Kelly says she knew she wanted to be a neurosurgeon during her first year in Ann Arbor after she watched a functional mapping case for tumor. [Your editor, who also went to medical school in Ann Arbor, knew that only after the last beer bottle was emptied and the last damsel returned home—but, it was the 60s].

Because of her engineering background, Kelly worked on testing the responses of programmable valves to magnetic fields, and built custom hard and software for the next generation of neurosurgical microtargeting systems.

She was a member of the Phi Rho Sigma medical fraternity, and served as their sports chair. Kelly was a distance runner from middle school through college, and in medical school began to run marathons. So, the rest of you runners look out, if for no other reason than she also has been a nationally ranked fencer in high school and college. Sounds like a dangerous combination.

She also found time to volunteer at a free clinic for the underserved in Ann Arbor, and to represent the medical students on the University of Michigan Student Assembly where she was a member of the health insurance committee.

She was active in the SAMA, worked as a medical student tour guide, and volunteered for four months at a clinic for the underserved in Oaxaca.

Last, she was a member of the Galen's Honorary Medical Society and participated in their annual smoker (an outrageously funny lampoon) as a writer, actor and dancer. [There were no women in Galens when I was a member in 1968-9, and only 20 women in our 1965 entering class of 200-Ed].

Kelly has already published five peer-reviewed papers, four as first author, and has several more submitted or in preparation.

On May 28th, just before moving to Seattle, Kelly will marry Tristan Trutna, a mechanical engineer who just finished his master's in Mechanical Engineering at Michigan, having also graduated from Carnegie Mellon. Then, she'll say good-bye to him for much of the next few years.

## Brian Hanak, MD

In his personal statement, Brian Hanak wrote, "In the third grade, about the time of my youngest brother's birth, I decided I would become a pediatrician."

As a high school summer intern at the Children's National Medical Center in Washington, D.C, he discovered the OR. Hard to know how he found the time for that, as he captained his high school cross-country team the year they won their first state championship in school history, even though he had an Achilles injury.

Brian continued to run at Yale, and was a four-year varsity letterman on the track and cross-country teams. He placed sixth in the 3,000 meter steeplechase at the Ivy League Track and Field Championships, but also was a summer young peoples swim coach at the local pool in Alexandria, Virginia after his first year at Yale.

Like Kelly Collins, Brian has volunteered a lot. In addition to coaching the swim team, he worked at the Yale Medical School student-run primary care clinic as an undergrad, and taught basic science to elementary school students as a Yale DEMOS volunteer.

In 2006-07, he was the coordinator for this program, which required writing the lesson plans, purchasing materials, and arranging schedules for undergraduate student teachers to be in the classrooms.

Later, in medical school, he was a volunteer at the Harvard Asthma Swim Club, an organization aimed at teaching pulmonary health and swimming to a group of at-risk elementary school children.

*(Continued on Page 3 . . .)*

## Other New Arrivals:

Assistant Professor Sam Browd and his wife Lynn announced the birth of their first child, William Robert, Jan 17th, 2011. This makes it Boys: 2, Girls: 7 over the past three years.



*Alena Frances Ferreira*



*William Robert Browd*

Assistant Professor Manny Ferreira writes that a daughter, Alena Frances Ferreira, was born at 6:22pm May 4th. Stats: 7lb 8oz and 20 inches. She is beautiful and obviously takes after her mother.

## Welcome to the New R1's: *Continued . . .*

Funded by the Yale Neuroscience Summer Research Fellowship, Brian worked on molecular mechanisms controlling dendritic development in granule cells of the mouse olfactory bulb. This work became the basis for his biology major senior thesis.

In 2007, he won the Alan Bateman Science Prize (Silliman College at Yale University) given to a senior for overall excellence and high standing in the natural sciences.

His interest in the nervous system continued in medical school at Harvard where he served as President of the Cushing Neurosurgical Society, even though he's a lot nicer than Harvey ever was.

Brian won a Congress of Neurological Surgery Student Fellowship in Socioeconomic

Research to study post-operative ICU requirements after elective craniotomy, as well as an AANS Fellowship used to investigate NKG2D ligand expression in human glioblastoma cells following radiation.

In addition to this lab work, he was the Event Director for the John Warren Surgical Society at Harvard.

Brian is the author of two peer-reviewed papers, and has three more submitted, two as first author.

We welcome these two outstanding young doctors to the residency program. If they ever get a day off at the same time, we can see which one of them runs the fastest 10,000 meters (but Kelly can't carry an épée).



*A teaching moment with residents*



*Dr. Rhoton with Richard Ellenbogen and Manny Ferreira*



*Hands-on learning*



*Demonstrating surgical approaches*

## How To Know Where You Are

Professor Albert Rhoton, Chairman Emeritus at the University of Florida, spent two days at the University of Washington in May.

His achievements are well known to all neurosurgeons, and include terms as president of AANS, CNS, the Society of Neurological Surgeons, and the North American Skull Base Society.

He is the 1998 recipient of the Cushing Medal. The author of more than 250 scientific papers, Dr. Rhoton is most noted for his studies of microsurgical anatomy.

Over a two day period, residents and staff were treated to his tour through the dissection of the posterior fossa, including retrosigmoid, far lateral and transcondylar approaches.

He also demonstrated the anatomy of the ventricular system and surgical approaches to the ventricular system.



*Professor Albert Rhoton*

## Healthcare in America

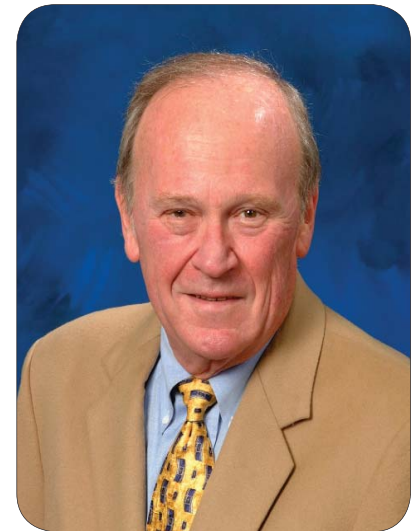
John Kusske, Professor Emeritus and Interim Chair at UC Irvine, returned to UW for the first time since he completed his residency here in 1972.

At Neurological Surgery Grand Rounds in early May, Dr. Kusske shared his extensive understanding of the current unsteady state of health care in the United States. With complete mastery of the data and the complex interactions between political pressures, economic realities, and bureaucratic rules, he could have spoken for much more than the hour allotted.

In summary, the debt is great and all the solutions are flawed.

One is reminded of the old saying in the financial world: bulls prosper, bears prosper, pigs get slaughtered. Greed must be suppressed and equitable solutions discovered for real health care reform to occur.

Dr. Kusske implied that this should happen very soon.



*Professor John Kusske*

# Damaged Tissue is Preferentially Receptive to Stimulation

We have all consulted a physician with pain, and experienced actions by the doctor to localize it: "where does it hurt?", followed by manipulation of the painful area.

This is often useful for superficial sources of pain. Nonetheless, a non-invasive diagnostic test able to reliably localize and quantify deep peripheral contributors to a patient's pain would be helpful for diagnosing and treating pain of unknown origin.

The Mourad lab is working to develop a focused ultrasound device plus image guidance to achieve this end, based upon an invention by Drs. Jarvik and Mourad, both members of the Department of Neurological Surgery.

The team now also includes undergraduate students, often from Bioengineering or Neurobiology, additional scientists from several departments on campus (including our own Drs. Gofeld, Klotz and Loeser), as well as an industrial collaborator – PhysioSonics, Inc. This translational research consists of basic and applied efforts involving both animals and human subjects.

Current diagnostic tests often fail to localize and quantify the sensation of deep tissue abnormality to the experience of pain.

For example, in up to 85% of patients with back pain, imaging studies and physical examination cannot identify the anatomic generators for the discomfort because they appear normal or non-specific, short comings complicated by the likely presence of central sensitization. Evocative tests such as discography are invasive, non-specific, and

unreliable.

The clinical management of pain associated with deep tissue abnormalities could benefit from a non-invasive, targeted and quantifiable evocative test.

Specialized ultrasound devices exist that focus quantifiable energy on a tiny volume of tissue deep within the body sufficient to cause rapid, transient, and localized heat deposition.

This results in local increase in tissue temperature, as well as local tissue displacement, thereby identifying shear forces within the tissue. In sufficient quantities, the heat and shear can destroy tissue. In lesser amounts, however, intense focused ultrasound (iFU) can safely induce discernible sensations in humans.

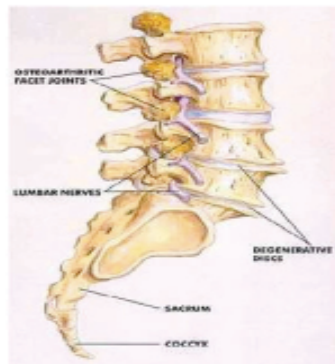
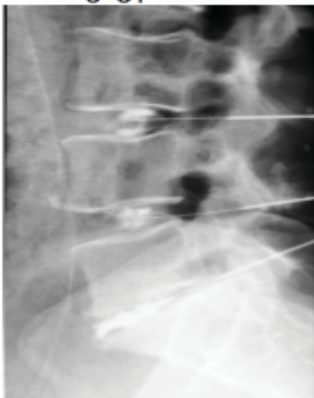
iFU might generate an abnormal sensation when applied to a candidate site, thereby localizing a peripheral pain generator.

The Mourad lab has tested the hypothesis that iFU can differentiate painful tissue (either inflamed or neuropathic) from control tissue as well as quantify the associated allodynia. This suggests that painful tissue is more sensitive to iFU stimulation than non-painful tissue.

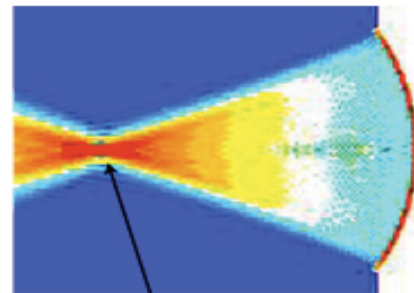
In addition, iFU can localize a neuroma in an animal model of subcutaneous focal, neuropathic pain. Moreover, healthy test subjects can discern iFU stimulation in a manner that correlates with the density of peripheral nerve terminals. A device is ready for human pre-clinical trials, and a proposal under construction aimed at localizing neuromas.

## improving pain diagnosis

**invasive localization of pain:  
imaging plus needles**



**non-invasive localization of pain:  
imaging plus focused ultrasound**



**focal point of ultrasound**

## Graduation

On June 5 at 11:30 in the University of Washington Club on upper campus, Chief Residents Mahesh Karandikar and Jeff Mai graduated from the training program.

Mahesh will move to the University of Pittsburgh to become a Fellow in Pediatric Neurological Surgery, leaving his wife Tong Yang in Seattle to finish her residency on her own.

Jeff will also stay in town to become the Cerebrovascular/Skull Base Fellow, replacing Sal Di Maio who is also finishing and moving to the Jewish General Hospital, which is part of the McGill University Medical School teaching system.

Nick Qandah and Gareth Adams are both completing a year of Neurological Surgery Spine Fellowship, and Toba Niazi will finish a year as the Pediatric Neurological Surgery Fellow.

Dinish Ramanathan, who has been the Cerebrovascular/Skull Base Research Fellow for three years, will start as PGY 1 at Duke.

## Outreach

Recently, Assistant Professor Adam Hebb and several colleagues travelled to Richland to meet with the neurosurgery, neurology, and rehabilitation staff at the Kadlec Neuroscience Center.

One of the regions foremost experts on deep brain stimulation, Dr. Hebb is a referral resource across the WMMAI Region for treatment of Parkinsonism and related disorders.

Professor of Rehab Medicine Jefferson Slimp and Movement Disorder Neurologist Ali Samii also made the trip to the Tri Cities to meet with Kadlec Hospital Administrator Al Wichtendahl.



*Adam Hebb, Jefferson Slimp and colleagues*

## Meeting of the Western Neurosurgical Society

The Grand Hyatt Resort in Kauai will be the venue for the 57th annual meeting of the WNS September 10-13.

The universal registration fee includes breakfast and dinner for each registrant and their spouse.

Charlie Nussbaum and Program Chair Peter Gruen have focused the meeting objectives on the impact of the patient safety movement on neurological surgery, advances in radio-surgical techniques, and the options and outcomes analysis for spinal surgery.

### Last Issue's Brain Teaser:

**Answer:** The answer to the last puzzler was far too easy: Sir Victor Horsley, just turned 29 years old, did the first neurosurgical operation at Queen Square Hospital in 1886.

Ken Peirce, who spent time at Queen Square as a resident, and Minku Chowdhary, who must not have enough to do as a Fellow and newly-wed, both answered correctly and win the (yet to be determined) Grand Prize.

### Be Part of the Montlake Cut:

The editor hopes that our readership will continue to expand, and that the newsletter will become a vehicle for reporting on the activities of our colleagues. We remain anxious to publish stories, photos, and ideas about what all of us do in caring for sick people. Please contact us at the addresses below.

If you do not wish to receive the Montlake Cut, please let us know and we'll remove your name from the distribution list.

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### New Brain Teaser:

**Question:** There is now argument as to whether or not Sigmund Freud was a good psychiatrist.

(Although any errors that he made in trying to generalize the neuroses of Viennese woman to a broad context might be forgiven for the pure genius of his book *Civilization and its Discontents*.)

He did, however, make at least one major contribution to basic neuroscience. What was it?