



THE MICHIGAN DIFFERENCE

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NEWS AND NOTES

ISSUE 10 2012

LETTER FROM THE CHAIR

Collegial Connections

Drive U-M Neurosurgery's Success... Past, Present, & Future



Dr. Karin Muraszko

Dear Friends and Colleagues,

As we approach the holiday season, it is always good to think about those things for which we are grateful. This past year has been an exciting one for the Department of Neurosurgery. We saw ourselves continuing to grow in a variety of ways. This year we celebrated **Dr. William Chandler** and his 38 year career at the University of Michigan.

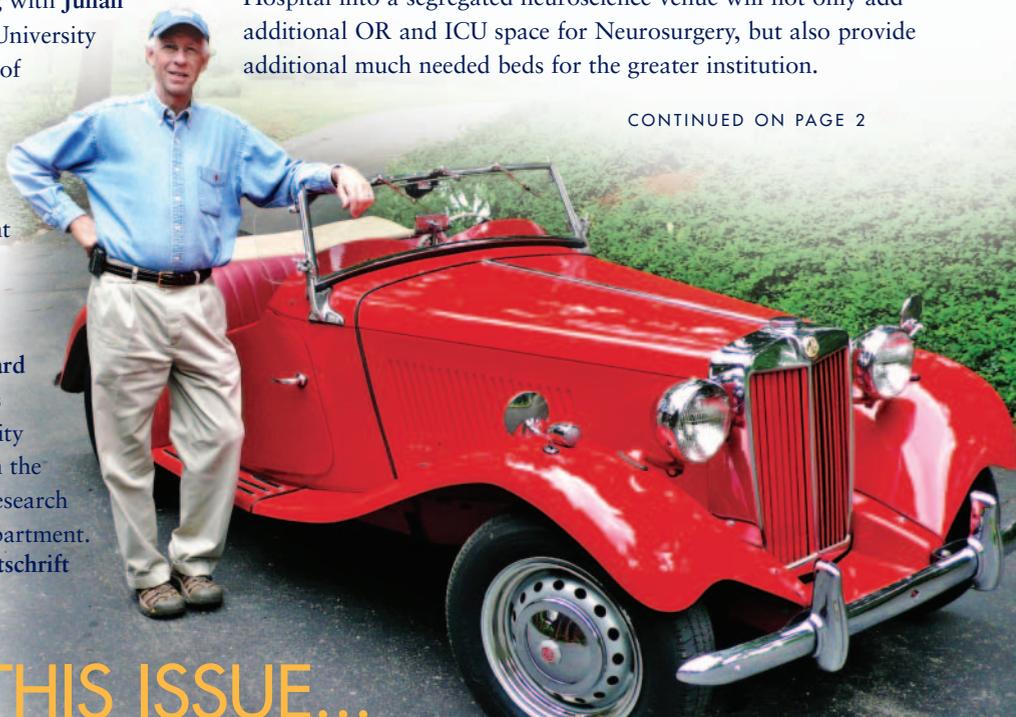
Dr. Chandler trained here at UM, spent a short amount of time in Louisiana and then came back to UM as faculty. He has been one of the triumvirates of the department. He, along with **Julian "Buz" Hoff** and **John McGillicuddy**, made the University of Michigan one of the outstanding institutions of higher learning in neurosurgery.

In September of this year, we celebrated Dr. Chandler's career in a remarkable fashion. The department hosted an all-day scientific event along with a gala reception for him. It was a weekend highlighted by outstanding science presented both by internal speakers as well as external guests. **Dr. Edward Laws** and **Dr. Edward Oldfield** gave outstanding keynote presentations along with a variety of faculty from the University of Michigan. It was a chance for us to reflect on the many scientific accomplishments and ongoing research that continue to be an important part of the department. **Dr. Chandler** was celebrated at a wonderful Festschrift which was emceed by his long-term partner and

collaborator, **Dr. McGillicuddy**. It was a chance for alumni throughout the years to come and not only celebrate Dr. Chandler's outstanding career, but also reaffirm their connection with the Department of Neurosurgery. There are certain events in the department's history which are keynote and this was among them.

The department continues to work with the greater institution in developing the **Neuroscience Hospital**. The progress has been somewhat slow as various aspects of budgeting, processes, and design are ongoing. It continues to be an important part of the strategic vision for the University of Michigan that neurosciences take a significant lead. The conversion of the old Mott Children's Hospital into a segregated neuroscience venue will not only add additional OR and ICU space for Neurosurgery, but also provide additional much needed beds for the greater institution.

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Research continues to expand and grow. After the amazing donation of one million dollars by Mr. Phil Jenkins, the 3D EM microscope is now being installed within the laboratory space of Drs. Castro and Lowenstein. This makes the University of Michigan one of only two centers in the country to have such microscopy available and will add immeasurable help to our continuing research on brain tumor growth.

In addition to the laboratory space, a new program has been developed through the department's efforts such that patients with brain tumors may now, when and if they lose their fight with brain cancer, donate their brains for laboratory research. Assisted by the Department of Pathology, residents who are involved in brain tumor research help to make certain that the brains are harvested in an appropriate fashion and done so expeditiously. It is always amazing that families show such kindness even in the midst of their great despair in donating to the University of Michigan in hopes of finding a cure for malignant brain tumors.

The new intraoperative MRI scanner is taking on its first patients in the first week of December. A list of patients is now formed. Both adult and pediatric patients are making use of this state-of-the-art OR in the new C.S. Mott Children's Hospital and Von Voigtlander Women's Hospital. Spearheaded by Drs. Garton, Heth and Sagher, this will further elevate our ability to treat patients with a variety of brain lesions, particularly tumors.

The department's NIH rankings have risen such that the department is now ranked number eight in the country with respect to NIH funding. As we begin our residency interview process we have seen some 270 applicants applying for two spots within the department. Our residents are a true source of pride for us. Many have received outstanding grants from our national organizations and all are involved in active research, both during their elective years as well as during their clinical training. The outstanding traditions of neurosurgical leadership are in good hands in the present generation of residents produced by the Department of Neurosurgery.

We wish you and your family a wonderful holiday season and a new year filled with health, happiness and peace. Our best to all of you and we hope that you will come and visit us in the coming year.

Sincerely,



Karin Muraszko, MD
Julian T. Hoff Professor of Neurosurgery
Chair, Department of Neurosurgery

Sagher Sets Personal Best at Chicago Marathon... Dedicates Run to His Patients and Friends with Brain Cancer



Dr. Oren Sagher running in the 2012 Chicago Marathon as a member of Team Breakthrough to raise funds for the American Brain Tumor Assoc.

In addition to being a neurosurgeon, Dr. Oren Sagher is a dedicated (and some would say obsessive) long-distance runner. He tries to run at least two marathons every year. Dr. Sagher says "I find this helps me stay centered and focused in my everyday life and work." This past year he decided to dedicate one of his marathons to his patients and friends with brain cancer. In October, he ran the 2012 Chicago Marathon as a member of Team Breakthrough, to raise funds for the American Brain Tumor Association (ABTA). "I'm proud to report that we raised about \$6,300 for the ABTA in the fundraising campaign!" says Sagher.

This year's Chicago Marathon happened to coincide with the annual meeting of the Congress of Neurological Surgeons, and he was able to combine both activities in one trip. Although he had recently injured his knee during training, the marathon itself went without a hitch, and he broke 4 hours for the first time ever. "I want to thank all of you who contributed to the ABTA in support of my run" stated Dr. Sagher.

For those who still want to contribute, the ABTA is happy to receive the support at <http://bit.ly/yes2humor-no2tumor>

MEDICAL EDUCATION UPDATE

Chief Graduates 2012

Arnold Etame, M.D., PhD.

John Ziewacz, M.D., MPH

The Department of Neurosurgery faculty, residents and staff, along with family and friends, gathered at The Polo Fields in Ann Arbor on Saturday, June 16th for a celebratory evening to honor Arnold Etame and John Ziewacz on the successful completion of their seven year residency training program. In addition to completing this arduous neurosurgical training program, they both received an advanced degree during their time with us. Dr. Etame received his PhD while working at the Labbatt Brain Tumor Centre at The Hospital for Sick Children in Toronto under the mentorship of Dr. James Rutka. Arnold has joined the Moffitt Cancer Center faculty in Tampa, Florida. Dr. Ziewacz received his MPH from the Harvard School of Public Health under the tutelage of Dr. Atul Gawande and is currently completing a complex and reconstructive spine fellowship with Dr. Praveen Mummaneni at UCSF. Such wonderful accomplishments for two amazing men – congratulations!



Chief Graduate Arnold Etame, M.D., PhD.



Chief Graduate John Ziewacz, M.D., MPH

Welcome New Neurosurgery Residents!

We were excited to have three outstanding physicians join our residency training program in 2012. The Department of Neurosurgery welcomes Jacob Joseph, M.D., Luis Savastano, M.D., and Drew Wilkinson, M.D.



Jacob Joseph, M.D.

Start Date: July 2012
Medical School: Baylor College of Medicine (Houston, TX)
Undergraduate: The University of Texas at Austin (Austin, TX)

Why Neurosurgery? My interest in neurosurgery developed as a result of a professor during undergraduate who detailed the intricacies of the nervous system, as well as from the influence of my favorite author, Fyodor Dostoevsky. The idea that diseases that were never thought to be surgical in nature may end up having a surgical treatment is exciting and intriguing. There are endless possibilities in neurosurgery that I hope to explore throughout my career.

Why U-M? The University of Michigan is a place that has long been known for being progressive and pushing innovation. The neurosurgery department itself has a long, storied tradition of excellence. The opportunities here are second to none. I knew that by coming to U of M, I would not only have these opportunities, but be expected to use them.

Hobbies or Interests? I am a huge college football fan (Hook'em), and enjoy reading, eating, and live music.

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Luis Savastano, M.D.

Start Date: July 2012

Medical School: Universidad Nacional de Cuyo (First of the Class, summa cum laude, and Gold Medalist).

Hometown: I was born in London, England where my parents, both born in Argentina, were pursuing post-graduate doctoral degrees. I grew up in Milan, Italy and in Mendoza, Argentina.

Why Neurosurgery? Since early childhood I have been greatly attracted to biology in general and the workings of the human brain in particular. The realization that it is the human brain, the organ that defines our Homo species as sapiens, and that its status determines whether the humanity within us lives or dies, contributed to my decision to dedicate my professional life to learn, investigate and treat diseases affecting the human nervous system. The intellectual challenges posed by modern neuroanatomy, physiology and pathology, combined with the possibility to deliver hands-on help with the most exquisite technical precision, make Neurosurgery one of the most challenging and rewarding disciplines. In addition, this field offers a unique and exciting potential to apply upcoming technologies to push current limitations by devising new diagnostic and therapeutic approaches. I believe human life is sacred and there is no organ more human than the brain. I am eager to spend my life as a neurosurgeon.

Why U-M? During my rotations and interviews in several Departments of Neurosurgery around the country, I've had the opportunity to compare, firsthand, the quality of training offered by different programs. These experiences solidified my impression that the Neurosurgical Residency Program at the University of Michigan was the best fit for my expectations, search of excellence and personality. The program is simply outstanding. It offers extensive surgical experience and clinical and translational research opportunities using state-of-the-art technology. The Faculty has brilliant surgeons and superb scientists committed to clinical and academic excellence, and the residents provide an incredibly positive and stimulating atmosphere that supports learning, a dedicated work ethic, and collegial collaboration. These reasons supported my choice of the University of Michigan as my ideal Neurosurgical Residency Program. My passion is to be able to make a difference in the life of the patients and I am certain that I will find in this Department the best environment to pursue my dream of becoming an academic neurosurgeon.

Hobbies or Interests? I enjoy reading books on history of medicine, travelling and spending time with my friends and family. I have always loved sports and I have practiced them since I was very young, especially swimming, soccer and tennis. I have also played competitive rugby for several years in Argentina.



David Andrew Wilkinson, M.D.

Start Date: July 2012

Medical School: University of Michigan

Undergraduate: Massachusetts Institute of Technology

Graduate: Naval Postgraduate School

Why Neurosurgery? I knew early on in medical school that I wanted to be a surgeon, but it took me a bit longer to find neurosurgery. Seeing a few personal friends with neurologic disease sparked an interest, and I was drawn to the variety of types of cases in neurosurgery — all with the common thread of having an enormous impact on the lives of patients.

Why U-M? Having been in Ann Arbor for medical school already, I knew it was a great fit. Being familiar with the program and special collegiality within it, I knew that if I matched here I'd have the opportunity for superb training that would unlock doors in the future.

Hobbies or Interests? Running, cross-country skiing, and time with family.

FELLOWSHIPS

Cerebrovascular Fellowship



We are very fortunate to welcome **Tristram Horton, M.D.** as our first cerebrovascular neurosurgery fellow for a period of one year from July 1, 2012 through June 30, 2013. His time here at the University of Michigan's Department of Neurosurgery will be focused on learning advanced neurovascular techniques for complex cerebrovascular pathology.

Dr. Horton received his Bachelor of Science degree from Rutgers University in 1993, and his medical degree at the University of Miami in 2003. He completed a general surgery internship at Hennepin County Medical Center in Minneapolis then entered the residency training program at the University of Texas Health Sciences Center in 2005. He transferred to Penn State University in 2006 and completed his residency training there under the leadership of Dr. Robert Harbaugh and Dr. Kevin Cockroft, enjoying an unusually strong enfolded training in endovascular neurosurgery.

Dr. Greg Thompson, current Program Director and also Director of the Cerebrovascular Fellowship, feels certain that the establishment of a neurovascular fellowship will strengthen our residency training experience. This fellowship is fully integrated with the existing dual training in cerebrovascular surgery currently offered in our residency program. The Cerebrovascular Neurosurgery Fellowship is an approved non-standard program by the Office of Graduate Medical Education and is in the process of accreditation review by the Committee on Accreditations of Subspecialty Training (CAST) of the Society of Neurological Surgeons ("Senior Society"). The cerebrovascular fellowship program will also be supervised by Associate Fellowship Director, Dr. Aditya Pandey. Both Dr. Thompson and Dr. Pandey were residents and fellows in programs that had a vascular neurosurgery fellowship and understand particularly for more junior and mid-level residents, fellows should be an integral part of the service, contribute to the residency educational experience, and improve the quality of the neurosurgery training.

Complex and Reconstructive Spine Surgery



We are delighted to have **Jacinto Manon, M.D.** as our spine fellow in the Department of Neurosurgery for a one year period from, October 1, 2012 to September 30, 2013. Dr. Manon is on the Neurosurgery Service for this twelve-month educational clinical fellowship in complex and reconstructive spine surgery.

Dr. Manon attended medical school at the Iberoamerican University of Sto Dgo in Santo Domingo, Dominican Republic receiving his MD degree in December 2002. He subsequently did a medicine/surgery sub-internship from January 2002-April 2002 at the Cleveland Clinic Foundation, a general surgery internship from 2004 to 2005 at the Albert Einstein Medical Center, followed by general surgery residency 2005 to 2006 at the New York Hospital of Queens, then Neurosurgery Preclinical Fellowship from July 2007-August 2008 at the University of Colorado. He completed his residency training at West Virginia University in September 2012.

Dr. Manon's time here at the University of Michigan Hospital and Health Systems is focused on learning sophisticated spinal surgery techniques. He participates with Dr. Frank La Marca, Spine Fellowship Director, and Dr. Paul Park in learning surgical techniques with respect to complex spine patients. Dr. Manon is held in the highest regard by his peers and patients. He is a skilled surgeon who learns new operative techniques quickly and highly accurately. Dr. Manon has a very compassionate bedside manner and communicates well with patients and families. Dr. Manon's outstanding personal quality and professional commitment are traits for success to our spine fellowship.

The Complex and Reconstructive Spine Surgery Fellowship in the Department of Neurosurgery is an approved non-standard program by the Office of Graduate Medical Education. It is also an approved Committee on Accreditation of Subspecialty Training (CAST) program, with oversight provided by the Society of Neurological Surgeons.

Neurocritical Care

Kyle Sheehan, M.D. is now in his second year of our 24-month clinical fellowship in Neurocritical Care. The Neurocritical Care Fellowship in the Department of Neurosurgery is an approved fellowship through the United Council of Neurological Subspecialties (UCNS) with oversight and board examination provided by the UCNS organization.



JULIAN T. HOFF TEACHING AWARDS

As we all know so well, Dr. Julian T. Hoff was thoroughly devoted to teaching throughout his long and distinguished career. One of his most important requests was that we establish a way to recognize excellence in teaching within our department. In 2010, from a generous gift from Dr. Hoff's estate, we established three teaching awards, the Julian T. Hoff Teaching Award, the Max Peet Teaching Award, and the Friend of Neurosurgery Teaching Award.

The Julian T. Hoff Teaching Award is given each year to a junior faculty member within the department with an exemplary record in teaching neurosurgery residents. The residents make this selection themselves and receiving this award is a reflection of their appreciation for the faculty member's dedication to teaching.



Julian T. Hoff Teaching Award
2012 Juan Valdivia, MD
2011 Hugh Garton, MD
2010 Paul Park, MD

The Max Peet Teaching Award is given to a resident who has distinguished themselves in the arena of teaching other residents and medical students. The recipient of this annual award is selected by the department faculty.



Max Peet Resident Teaching Award
2012 John Ziewacz, MD, MPH
2011 Anthony Wang, MD
2010 Arnold Etame, MD

The Friend of Neurosurgery Award is given to a faculty member outside of the Department of Neurosurgery who is instrumental in the teaching of neurosurgical residents. The residents select the recipient of this award based on their commitment to teaching excellence.



Friends of Neurosurgery Award
2012 Doug Quint, MD
2011 Erin McKean, MD
2010 George Mashour, MD, PhD

Resident News & Notes

John Ziewacz, M.D., MPH was awarded the Cloward Fellowship by the AANS/CNS Joint Section on Disorders of the Spine and Peripheral Nerves (\$30,000).

Monique Boomsaad, M.D. was selected to attend the AANS Peripheral Nerve/Spinal Deformity Course (March 29-April 1, 2012) in Baltimore, MD.

Visiting Professors in 2012

Visiting Professors are an integral part of the residency training program's didactic curriculum, and 2012 has been a banner year for our resident education lecture series. Dr. James Augustine, Associate Professor of Physiology and Neuroscience at the University of South Carolina School of Medicine, was our 23rd Elizabeth Crosby Lecturer. He gave an enlightening talk on Dr. Crosby as the greatest neuroanatomist of the greatest generation, as well as a second talk on the functional anatomy of the insular lobe in humans. Dr. Richard Ellenbogen, Chair and Program Director at the University of Washington Department of Neurosurgery, was our Joan Venes Pediatric Neurosurgery Visiting Professor and he spoke on head injury and the NFL as well as a second talk on pineal region tumors. Our 2012 Julian T. Hoff lecturer was Dr. Robert Dempsey, Chair of the Department of Neurosurgery at the University of Wisconsin School of Medicine and Public Health. Dr. Dempsey also gave two lectures, one specifically focused on the beloved Dr. Hoff and how he inspired neurosurgery for the future, as well as a very interesting talk on starting an academic career.

In addition to these named lectureships, we hosted the 18th annual John L. Kemink Memorial Lecture on November 16, 2012. This lecture is co-sponsored by the Department of Neurosurgery and the Department of Otolaryngology at the University of Michigan in honor of Dr. Kemink, talented surgeon, compassionate physician and dedicated teacher who lost his life in 1992. This year's invited speaker was Dr. Carl Heilman, Chair of the Department of Neurosurgery at Tufts University School of Medicine, and he lectured on endoscopic endonasal versus transcranial skull base surgery.

UM / OSU Residents Team Up For Cranial Base Cadaver Course

For one weekend in February (2012), the "rivalry" between the University of Michigan (UM) and the Ohio State University (OSU) was put aside. In a collaborative effort, the neurosurgical residents from both institutions came to learn together at a cranial base cadaver course hosted at the University of Michigan. The weekend was loaded with a mixture of medical education, hands-on surgical training, and social time.

The OSU residents and faculty arrived to a Friday evening welcome reception at the Dahlmann Campus Inn in Ann Arbor. The Saturday schedule was jam-packed as both learning and social events were abundant. Both breakfast and lunch gave time for residents and faculty to converse and enjoy each other's company. In the late afternoon, an indoor rock-climbing event was made available to all course participants who wanted to take on that challenge. The educational training portions of the weekend contained lectures which were then followed by the hands-on surgical lab training. The course included the following:

Lecture – **"The Pterional and Orbitozygomatic (OZ) Approaches"**
Cadaver Dissections: Pterional and OZ Approach

Lecture – **"The Middle Fossa Approach"**
Cadaver Dissections: The Middle Fossa Approach

Lecture – **"The Far Lateral Approach"**
Cadaver Dissections: The Far Lateral Approach

The weekend events came to a close as residents and faculty attended the OSU vs. UM basketball game. A heartfelt thank you goes out to Stryker for sponsoring this collaborative UM/OSU cranial base cadaver course.

"A group of Scarlet and Gray Neurosurgical Buckeyes traveled to the state up north and were treated with generous hospitality and collegiality by the Michigan faculty and residents. We were then the guests of the Neurosurgery Department at an OSU-Michigan basketball game. The OSU basketball team did not experience a similar favorable experience. Go Bucks! Go Blue! Looking forward to seeing you all in Columbus in 2013. You have set the bar very high!"

Carole A. Miller, MD
Neurosurgery Residency Program Director
Ohio State University



No residents were injured, taunted, or converted during the course.



FACULTY UPDATE

Welcome



Dan Orringer, M.D.

For Dr. Dan Orringer it is welcome back! Dr. Orringer returned this past July to the Department of Neurosurgery with a Faculty appointment after completing his 7-year residency here at Michigan and a post-residency fellowship in image-guided surgery at Brigham and Women's Hospital and Harvard Medical School.

Dan was appointed by the University of Michigan as a Clinical Lecturer. Dr. Orringer received his MD at Ohio State University and completed his undergraduate BA in Cell and Molecular Biology at Cornell University. Dr. Orringer is already an outstanding clinician-scientist, and has a promising career as a successful independent investigator. During his residency and fellowship, Dr. Orringer amassed an outstanding research track record including 17 peer-reviewed publications and 16 abstracts at national or international meetings. His work on the application of nanotechnology to brain tumor imaging resulted in the first individual Ruth Kirschstein National Research Service Award (F32) granted to a neurosurgery resident at the University of Michigan. The Congress of Neurological Surgeons also awarded him a resident research fellowship for his nanotechnology research. Amazingly, Dan also played an instrumental role in assembling a multi-disciplinary team of chemists, toxicologists and radiologists to work on this project, and drafting two successful multi-million dollar NIH grant proposals (an R01 from NIBIB and R21/R33 from NCI) to explore the use of nanoparticles in brain tumor imaging.

"The modern operating room has great potential as a laboratory for the study of glioma. My specific interest lies in the development of emerging intraoperative imaging techniques to advance the understanding and treatment of human brain tumors. Over the past three years, I have worked with Professor Sunney Xie, the inventor of Coherent Raman Scattering (CRS) microscopy. CRS microscopy provides an entirely unique way of rapidly collecting structural and biochemical data from gliomas during surgery. I have chosen to focus on the development of CRS both as a research tool for the study of glioma and as a means of improving surgical outcomes."

Dr. Orringer's dedication to an academic cause has been steadfast. He is developing a line of research that has direct implications and an impact on patients, and he does not lose sight of his clinical focus. Dr. Orringer is providing a significant amount of support on the clinical service at the Ann Arbor VA, and also provides a level of support to the neurosurgery service at University Hospital.



Thomas Schermerhorn, M.D.

Dr. Thomas Schermerhorn has recently been brought on as an Adjunct Clinical Assistant Professor in the Department of Neurosurgery. He is a full time practicing neurosurgeon at Munson Hospital in Traverse City, MI, but as part of the University of Michigan's collaborative and strategic partnership with Munson Healthcare,

Dr. Schermerhorn has received a supplemental appointment here at the University of Michigan. Dr. Schermerhorn will spend one week out of every six here in Ann Arbor at the University of Michigan. During that time he will, both independently and in conjunction with our Faculty, teach residents, participate actively in ongoing research, and operate on patients. He will also use this time as an opportunity to do some of his more complicated cases in conjunction with our spine group here at UM.

Dr. Schermerhorn is an individual with a strong interest both in academic medicine as well as in teaching. He has an outstanding background, having done his training at Mayo Clinic and having been a graduate of the US Military Academy at West Point. He was actively engaged in the Army after graduating from West Point. When he completed his service he returned to receive his MD degree where he graduated with distinction and was the salutatorian at Wayne State University School of Medicine. During his residency at Mayo School of Medicine he did an enfolded specialty fellowship in spine surgery at Wake Forest University.

After finishing his residency, Dr. Schermerhorn became a consulting physician at Mercy Hospital in Cadillac, Michigan as well as an attending neurosurgeon at Munson Medical Center and remained a clinical assistant professor since 2009 at Michigan State University College of Osteopathic Medicine where he has had an opportunity to teach residents in neurosurgery. He is a member of several state and national societies and maintains an outstanding clinical practice at Munson Healthcare.

NEWS & NOTES



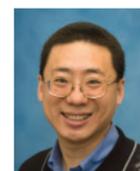
Oren Sagher, M.D. has been selected as an inaugural member of the League of Educational Excellence at the University of Michigan. Dr. Sagher was appointed as Vice Chair for Technology and Innovation, Department of Neurosurgery.



Frank LaMarca, M.D. has been accepted as a 2012 Active Fellow of the Scoliosis Research Society (SRS). The mission of the SRS is to foster the optimal care of all patients with spinal deformities.



Paul Park, M.D. was promoted from Assistant Professor to Associate Professor, with tenure.



Xing Fan, M.D., PhD. was awarded with his second R01 from the National Institutes of Health to continue his research on cancer stem cells in gliomas. His new grant's title is "Investigating Cancer Stem Cells - Niche Interactions in Brain Tumor." The total award was \$1,127,375 over 5 years.



B. Gregory Thompson, M.D. was selected to the American Board of Neurological Surgery to serve as a Director. Dr. Thompson was appointed Residency Program Director, Department of Neurosurgery. He became an inaugural recipient when he was selected earlier this year into The League of Clinical Excellence at the University of Michigan.



John McGillicuddy, M.D. became an inaugural recipient when he was selected earlier this year into The League of Clinical Excellence at the University of Michigan.



William Chandler, M.D. became an inaugural recipient when he was selected earlier this year into The League of Clinical Excellence at the University of Michigan.



Karin Muraszko, M.D. was nominated for, and approved membership in, the New York Academy of Medicine this past year.



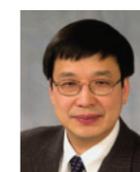
Aditya Pandey, M.D. was appointed Residency Program Co-Associate Director, Department of Neurosurgery.



Cormac Maher, M.D. was appointed Residency Program Co-Associate Director, Department of Neurosurgery.



Parag G. Patil, M.D. PhD. was elected to the Board of Directors of the North American Neuromodulation Society, and the Board of Directors of the American Association for Stereotactic and Functional Neurosurgery. He has also been selected to serve on the Professional Advisory Board of the Michigan Parkinson Foundation.



Guohua Xi, M.D. was awarded with an R01 grant from the National Institutes of Health for a research project titled "Mechanisms of Brain Injury after Intraventricular Hemorrhage." The total award is estimated at \$1,700,780 over five years.



STAFF UPDATE

Welcome to U-M Neurosurgery



Molly Dahlgren

Molly joined the staff of the Neurosurgery Department as a Research Administrative Assistant, Sr. in the Castro-Lowenstein brain tumor research lab in April of this year. A native of Ohio, she had recently moved back to the Midwest after spending three years in Wyoming. Molly earned an Associate's Degree in Office Technology from Thomas Nelson Community College in Hampton, Virginia where she graduated magna cum laude. Additionally, she is a Certified Microsoft Office 2007 Specialist, Master – having passed four extensive exams in Microsoft Outlook, Word, PowerPoint and Excel. Molly's background comes from the business sector where she has worked for a prominent Hampton Roads Virginia Hotel, Liebherr Cranes Inc., AxioMed Spine Corp. (a medical device design and manufacturing company) and Sweetwater County School District #2. Molly's move to Neurosurgery has drawn on her skillset and she has quickly become an integral part of the Castro-Lowenstein Lab's skilled team.



Heather Baker

Heather joined the department in May working with Dr. Aditya Pandey and the vascular team. Her background includes three years in the radiology department and three additional years working in the interventional neuroradiology department. Her background in interventional neuroradiology has provided a strong knowledge base in transitioning to neurosurgery. Heather is currently enrolled at Washtenaw Community College where she is pursuing a degree in nursing. In her spare time, Heather enjoys yoga and volunteering at the local humane society.



Jeanette Schultz

Jeanette has been with the University of Michigan Hospital since 1997. Jeanette has worked in the inpatient setting for 7 years as a patient services assistant, as well as in Interventional Radiology for the last 4 years as a patient services assistant. She has recently been promoted to Admin Assistant for Dr. Thompson in October of 2012. Jeanette attended Cleary College and received an Associate degree for Business Administration. Jeanette has been married for 15 years and has 3 children, Kayla age 18, Reagan age 13 and Tanner age 11. In her spare time she enjoys reading and spending time with her family.



Allie Kade

Allie has been with the department since April. She began working for the University as a research associate in the Department of Psychiatry in 2006. In 2009, she took a position working as a research coordinator in the Department of Emergency Medicine. In 2011 she was promoted to a project manager. Allie graduated from the University of Michigan with a bachelor's degree in psychology, and currently attends Eastern Michigan University where she is pursuing a master's degree in quality management. In her spare time, Allie enjoys hiking, camping, kayaking, and photography. She is an active volunteer with the Red Cross First Aid Support Team and loves attending UM sporting events.



Jane Elenbaas

Jane has been with the Neurosurgery Department since January. She started her career at the University of Michigan Health System in 2005 on 7B/C Cardiology Step-Down Unit and from there worked on 7B Internal Medicine Telemetry after unit reorganization. She received both her Bachelor's and Master's degrees from the University of Michigan. She is married to her husband, Chris, who she met in college and they have a Newfoundland named Markley. In her spare time Jane enjoys travelling, going to her family's home in Leland, working on home projects, and attending Michigan sporting events. Go Blue!

STAFF NEWS



Amy Steinacker – Adult Neurosurgery Clinic Manager

The Department of Neurosurgery is pleased to announce the promotion of Amy Steinacker to the position of clinic manager in the adult neurosurgery clinic. Amy joined our team six years ago as an administrative assistant to the cerebrovascular team, specifically working with Dr. B. Gregory Thompson. During this tenure, she played an instrumental role in organizing new processes to improve efficiency within the cerebrovascular team. In this new position, Amy will be in charge of all operations of the outpatient clinic including exam room utilization, appointment smoothing, and service excellence. Congratulations to Amy on her promotion and best wishes for her continued success within the Department of Neurosurgery.



Susie Hines – Medical Education & Training Coordinator

We would like to take this opportunity to congratulate Susie Hines on being selected as the Medical Education & Training Coordinator — a new position within the Department of Neurosurgery. In her new position, Susie will coordinate all administrative and system functions for all the program activities associated with medical education and training. We are very excited to have Susie in this new role, and we look forward to her efforts and dedication in making the Department of Neurosurgery's Medical Education and Training programs the best! We would also like to thank Susie for all of her outstanding work while serving as the Executive Assistant to the Chair of Neurosurgery since November 2003.



Donna Rossini Named 2012 MICNP Nurse Practitioner of the Year

The Department of Neurosurgery congratulates its own Donna Rossini, recipient of the 2012 *Michigan Council of Nurse Practitioners (MICNP) Nurse Practitioner of the Year Award*. Nominees are evaluated by MICNP

based on demonstration of leadership in the nurse practitioner profession and professional achievement, including research and publication.

Donna has presented multiple lectures on neurological issues including chronic pain management, normal pressure hydrocephalus, and also maintains professional membership with the American Association of Neuroscience Nurses and the American Academy of Nurse Practitioners. She received her B.S. in Biology, B.S.N. and a Master of Science degree in the Family Nurse Practitioner program, all from the University of Michigan. Donna has been a practicing nurse practitioner at the University of Michigan since 1999.

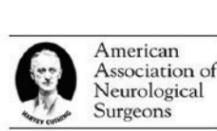
Donna is the past President of MICNP's Ann Arbor Chapter and was instrumental in increasing awareness of the NP practice to other healthcare professionals, and to the public by promoting activities throughout Nurse Practitioner Week. Due to her hard work, the MICNP annual conference in Ypsilanti was well received with over 400 nurse practitioners in attendance.

On behalf of the Department of Neurosurgery and your colleagues, congratulations for receiving this prestigious and well deserved honor!



National Meetings Cultivate Collegial Connections

The American Association of Neurological Surgeons (AANS) Annual Scientific Meeting was held in Miami, FL this year. The meeting's theme was 'We are Neurosurgery.' The theme represented the affirmation of who we are, what we've achieved, and what we aspire to accomplish through the science, the practice, the profession, the people, and the community of neurosurgery. It can be said that the theme was very applicable for us this year. As our Faculty and Alumni were well represented in the extramural presentations at this year's meeting, and as Faculty, Residents, and Alumni came together to celebrate Dr. William Chandlers remarkable career with a scientific day and Festschrift, it can fittingly be stated that our theme this year was 'We are Michigan Neurosurgery.'



Our Department hosted its annual Alumni Reception at the AANS annual meeting. The event was held outdoors in a beautiful video garden setting at the Sagamore Hotel. It was a chance for alumni throughout the years to reaffirm their connection with the U-M Department of Neurosurgery.

The 2012 Congress of Neurological Surgeons (CNS) Annual Meeting was held in Chicago, IL and the theme was 'Our Future is Now!' The meeting was focused on exploring the most significant breakthroughs over the past year as well as looking at what is happening today that will affect our field's future. Again, for us the theme can easily be translated to 'Michigan's Neurosurgery Future is Now', as our department continues to grow our research enterprise, achieve clinical innovations, produce exemplary residents, and provide leadership to the institution's strategic vision for the neurosciences.

The outstanding traditions of neurosurgical leadership are in good hands with our current set of Faculty, and in the present generation of the alumni and residents produced by the U-M Department of Neurosurgery.



The Sagamore Hotel's Video Garden was the perfect setting to establish and reestablish "collegial connections" at this year's U-M Alumni Reception at AANS.



ALUMNI NEWS

American Board of Neurological Surgery (ABNS) Board Certifications:

Three of our Neurosurgical Residency Alumni have successfully completed the ABNS board certification process and are now certified Diplomates. Vishal Gala, M.D. was officially certified in November 2011, and Sonia Eden, M.D. and Jean-Christophe Leveque, M.D. in May 2012. Congratulations to our three alumni on this hard-earned achievement!

U-M Faculty at AANS 2012

Karin Muraszko

Panelist: Chiari Malformations: Diagnosis, Treatments and Failures

Speaker: Van Wagenen Lecture, Leadership Training in Neurosurgical Resident Education - Guaranteeing the Future of Neurosurgery

Committee: Chair Membership Committee - AANS, Nominating Committee - ABNS, Women in Neurosurgery Executive Committee

William Chandler

Faculty: Practical and Technical Aspects of Transsphenoidal Surgery
Van Wagenen Fellowship Committee

Hugh Garton

Panelist: Anticoagulation for the Neurosurgeon and Hemostasis in Neurosurgery

Author: Natural History of Arachnoid Cysts in Adults
Frank La Marca

Faculty: Fundamental Techniques of Adult Spinal Deformity Surgery: Part 1

Faculty: Advanced Techniques of Adult Spinal Deformity Surgery: Part 2

Panelist: Osteoporosis and Spinal Fusion Surgery

Moderator: AANS/CNS Spine Section Session

Committee: Member Benefit Development

Cormac Maher

Co-Director: Management of Incidental Imaging Findings

Moderator: Young Neurosurgeon Section Luncheon

Practical Course Speaker: Intracranial Cysts

Author / Plenary Session Presentation: Natural History of Arachnoid Cysts in Adults

Plenary Session Moderator: Plenary Session III

Committee: Scientific Program Subcommittee-Liason, Bylaws Committee, Young Neurosurgeons

U-M Faculty at CNS 2012

Cormac Maher

Faculty: Management of Complex and Refractory Chiari Malformations and Syringomyelia

Faculty: Incidental Finding - What Next?

Moderator: Section on Pediatric Neurological Surgery Neurosurgical Forum

Paul Park

Faculty: Intradiscal Injection of Simvastatin Results in Radiologic, Histologic, and Genetic Evidence of Disc Regeneration in a Rat Model of Degenerative Disc Disease

B. Gregory Thompson

Course Director: Open Aneurysm Surgery: A 3-D Practical Course

Faculty: Lessons Learned: Avoidance and Management of Complications of Aneurysm Surgery

John McGillicuddy

Faculty: Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation

Paul Park

Speaker: BMPs and Cancer: Review of the Literature and Laboratory Data

Parag Patil

Co-Director: Deep Brain Stimulation: Update and New Directions

Faculty: Practical Course in Neurostimulation for Residents and Fellows

Panelist: Functional Neurosurgery for Psychiatric Illness

Oren Sagher

Committee: Information Technology

Editorial Board: Journal of Neurosurgery, Neurosurgical Focus

B. Gregory Thompson

Faculty: Operative Nuances for Cranial and Skull Base Procedures: A Cadaveric and Case-Based Microsurgical 3-D Video Presentation

Panelist: Management of Cerebrovascular and Endovascular Complications: A Case Based Approach

Panelist: Controversies in Cerebrovascular and Endovascular Neurosurgery

Panelist: How I Do It: Acoustic Tumors

Lynda Yang

Faculty: Peripheral Nerve Injuries, Entrapments and Tumors: Examination and Evaluation

Panelist: Peripheral Nerve Entrapment Syndromes

Parag Patil

Faculty: Neurosurgical Approaches to the Pain Patient: Patient Selection, Techniques, and Complication Avoidance

Frank La Marca

Faculty: Guidelines for the Surgical Management of Cervical Degenerative Disease

Faculty: Sagittal Balance in Spine Surgery

Faculty: Intradiscal Injection of Simvastatin Results in Radiologic, Histologic, and Genetic Evidence of Disc Regeneration in a Rat Model of Degenerative Disc Disease

Moderator: Section on Disorders of the Spine and Peripheral Nerves: Communicating the Value of Spine Surgery

Lynda Yang

Moderator: Peripheral Nerve Board Review

PROGRAM HIGHLIGHTS

Early Intervention

Prenatal Repair Offers New Hope for Babies with Spina Bifida

A prenatal diagnosis of myelomeningocele can be terrifying for expectant parents. But new, delicate neurosurgery — performed in the womb months before birth — now offers hope for much better outcomes for babies with spina bifida. U-M's C.S. Mott Children's Hospital and Von Voigtlander Women's Hospital is the only health center in the region to offer fetal intervention surgery for myelomeningocele, providing a multi-disciplinary team of experts to provide care for mother and baby before and after surgery. The surgery, performed at 19–25.6 weeks gestational age, allows the defect to be closed early, preventing further damage to the spinal cord and improving neurologic function. During the surgery, an incision is made in the mother's abdomen and uterus. The fetus' neural tube and layers of the back are then surgically closed. "This new surgery is the only thing we have been able to offer patients in many decades that is a significant change in treatment, and leads to improvement in level of function for the children" says Marjorie Treadwell, M.D., professor of Obstetrics and Gynecology and director of the Fetal Diagnosis Center. "It has changed how we counsel people with a fetus diagnosed with spina bifida."

Good News For Moms

In a landmark study known as the MOMS study, an NIH-sponsored multi-center clinical trial assessed the best treatment for myelomeningocele: fetal surgery or surgical repair after birth. According to the study, published in the *New England Journal of Medicine*, at age 12 months, children who had fetal surgery had a decreased risk of death and less need for shunting when compared to children who received surgery shortly after birth. At 30 months of age, those who received fetal surgery also scored better on mental and motor function tests, had less hindbrain herniation and were more likely to walk independently. However, fetal surgery was also associated with an increased risk of preterm delivery and uterine dehiscence at delivery. Although fetal surgery improved outcomes, children with spina bifida still require long-term care. Survivors of myelomeningocele frequently suffer lifelong disabilities, including paralysis, bladder and bowel problems, hydrocephalus (excessive fluid pressure in the brain) and cognitive impairments. "We are excited to be able to bring this treatment to this region because for the right patient, this can really be helpful, reducing the need for lifelong shunting and improving the Chiari II malformation" says Cormac Maher, M.D., an associate professor of Neurosurgery.



"Fetal myelomeningocele repair can result in substantial improvements in quality of life."

Cormac Maher, M.D.

The Right Team For The Right Care

A U-M multi-disciplinary team performs the new surgery, along with counseling for the families. "U-M staff have been working for about seven years to build a fetal therapy center and preparing to provide this new intervention for myelomeningocele," says George Mychaliska, M.D., director of U-M's Fetal Diagnosis and Treatment Center. "This is a huge breakthrough for patients with spina bifida. We have an experienced multi-disciplinary team that is interested in counseling the families. They get the perspective of the neurosurgeon, maternal-fetal medicine and the fetal surgery specialists, along with social work and genetic counseling, all in one integrated setting," says Mychaliska. U-M also offers a multi-disciplinary spina bifida clinic to follow patients after they are born. "This is not just about the surgery, but about providing them with social support and long-term ongoing care," says Treadwell.

The Right Patients For The Best Results

"The excellent results of the MOMS trial were predicated on choosing the right patients and having an experienced team in place to ensure great outcomes," says Mychaliska. "Most moms come to us with the attitude of 'I'll do anything for my baby.' But we recognize the procedure is not for everyone." Treadwell said the process begins with careful screening and counseling with the mothers. Evaluation of potential patients for the surgery includes fetal ultrasound, MRI and echocardiography. Genetic counseling and a social work evaluation are also important parts of the screening process. Prenatal surgery does come with significant risk to the mother. Most women will need C-sections with subsequent pregnancies and pre-term delivery is expected for the fetus that undergoes the surgery. "I am very much an advocate for mother and fetus. We have to make sure it's the right thing for both of them. But for the right candidate, we believe this surgery can really make a difference for the whole family's future," says Treadwell.

Ticking Time Bombs

New Options for Interventional Brain Aneurysm Treatment

For patients, being diagnosed with a brain aneurysm can feel like they've been told they have a ticking time bomb in their head. A rupture could occur at any time, and their odds of surviving the resulting subarachnoid hemorrhage with good functionality are approximately 50 percent. Recent advances in treating intracranial aneurysms and other cerebrovascular conditions have made it possible to defuse many of these "bombs" before they cause irreparable harm. Both open surgical and endovascular approaches, and the neuroimaging to guide them, have improved in the last decade. But until recently, some patients with especially large, deep or complex aneurysms have still been deemed inoperable. Now, teams at the University of Michigan Health System and other top centers can offer a broad range of approaches to fill aneurysms or divert blood flow from entering them.

Making The Inoperable Operable

The newest is a first-of-its-kind stent-like option called the Pipeline Embolization Device.

Delivered via endovascular technique, it is placed within the parent vessel across the aneurysmal opening. But unlike a stent, the fine-mesh Pipeline diverts blood flow away from the aneurysm into the parent vessel. This allows the vessel wall to remodel itself over time and completely clot off the aneurysm. It was approved last year by the FDA for large or giant wide-necked brain aneurysms arising on the internal carotid artery. "It's a promising new technology, but durability will be determined with long-term usage. The Pipeline Embolization Device delivered endovascularly allows us to treat patients who had no other option," says Aditya Pandey, M.D., a U-M assistant professor of neurosurgery and member of the U-M Cerebrovascular Disease team.

Pandey and his colleagues B. Gregory Thompson, M.D., Joseph Gemmete, M.D., and Neeraj Chaudhary, M.D., M.R.C.S., F.R.C.R., lead an interdisciplinary team of cerebrovascular specialists who evaluate and treat hundreds of patients with aneurysms and cerebrovascular conditions each year. The team gives referring physicians direct access to one of the four attending physicians 24 hours a day, every day of the year, about both elective management options and emergent cases. They often receive calls about patients who have had an incidental finding of an intact aneurysm on an imaging study performed for another reason, such as trauma or diagnosis of another condition.

A Liquid Cure

Unruptured intracranial aneurysms usually do not cause symptoms, but in certain circumstances they can cause severe headaches or even stroke-like symptoms (weakness, numbness, speech difficulty and visual disturbance). But once an aneurysm has ruptured, most patients describe their symptom as the worst headache of their life. Many also experience photophobia, blurred or double



The Pipeline Embolization Device is a stent-like option, delivered endovascularly.

vision, stiff neck, nausea and vomiting. Imaging studies such as contrast-enhanced MRI, MRI angiography, CT angiography or catheter-based cerebral angiography can confirm aneurysms. The next challenge is to determine the best treatment approach for the particular patient. "We truly have an armamentarium at our disposal — a wide range of options that we can choose from to suit the individual," says Thompson, the J.E. McGillicuddy Professor of Neurosurgery and Professor of Radiology, a neurosurgeon trained in both microsurgery and minimally invasive interventional neuroradiology techniques.

One option is a liquid called Onyx HD-500, which can be deployed through a catheter to fill the aneurysm sac. A balloon catheter is first threaded into the vessel that has the aneurysm, and then it is positioned to completely bridge the neck of the bulge. Next, the liquid is delivered into the aneurysm's open space through a second catheter that rides along with the balloon catheter. Onyx HD-500 hardens instantaneously, completely obliterating the aneurysm. The U-M team also offers both open surgical clipping options and endovascular placement of coils to fill aneurysms and prevent rupture. Specialized stents to support and seal off coil-filled aneurysms have been available for the last six years at U-M.

More Options Mean More Access

A specially constructed "hybrid suite" for neurointerventional care at U-M allows the patient to have dual imaging modalities during elective and emergent care. This is especially important for stroke patients who need both an angiogram and a CT of the head to be performed quickly for endovascular intervention. "While the availability of all these options makes it possible to treat more patients than ever before, we are also conscious of the need to evaluate new technologies fully," says Gemmete, an associate professor of Radiology and Neurosurgery, and a neurointerventional radiologist. He adds, "Outcome studies do show that morbidity and mortality are comparable between open and endovascular approaches, and length of hospital stay is shorter with the ability to send patients directly home within 24 hours of treatment higher with endovascular care."

"Here at U-M, our cerebrovascular team treats the whole spectrum of neurovascular diseases — in adults and children, and in brains and spinal cords," says Chaudhary, an assistant professor of radiology and neurosurgery at U-M and a neurointerventional radiologist.

U-M Patient Shares Story of Deep Brain Stimulation on “The Doctors” TV Show

The amazing story of **Suzanne Schoenherr**, a U-M patient who underwent deep brain stimulation, was broadcast this past May on “The Doctors” television show. Schoenherr had been living with and trying to manage her Parkinson’s Disease for almost 10 years. Medication did not control her tremors without serious side effects. She had to quit her job as a dental hygienist and had difficulty doing the simplest tasks like eating and walking.

Prior to surgery...

“I want my life back. I want to be able to do something as simple as drinking a cup of tea and going out and being comfortable... I stay in because I don’t want to be a spectacle when I go to a party or a wedding. I don’t go shopping because I’m afraid I won’t be able to get back to the car. I’m at a point where life isn’t fun.”

But all that has changed now. Schoenherr’s deep brain stimulation procedure was a success and has virtually eliminated her tremors, which is dramatically portrayed in “The Doctors” segment with her U-M neurosurgeon, **Parag Patil, M.D., PhD.**



Watch segments from the show online:

Diagnosed with Parkinson’s
<http://www.thedoctorsv.com/videolib/init/6634>

Deep Brain Stimulation
<http://www.thedoctorsv.com/videolib/init/6635>

Deep-Brain Stimulation Results
<http://www.thedoctorsv.com/videolib/init/6636>



Hope on the Horizon Breakthrough Research in Gene Therapy Shows Promise for Treating Brain Tumors

Although the incidence of brain tumors in children is relatively low (approximately 3,000 annually in the U.S.), brain tumors account for nearly 20 percent of all cancer in children up to 15 years of age, and are the leading cause of cancer deaths in pediatric oncology. Five-year survival rates from brain tumors are approximately 66 percent for children ages 0–19 years, but vary according to tumor type. Glioblastomas are particularly lethal. The good news is that new techniques in gene therapy to treat glioblastomas have shown remarkable survival rates of approximately 70 percent in animal trials. Human trials with adults, led by preeminent researchers **Maria Castro, Ph.D.**, and **Pedro Lowenstein, M.D., Ph.D.**, will begin shortly at the University of Michigan, and the trials may soon include pediatric patients.

Challenges of Treating Children

The difficulty in cancer treatments for children — particularly in brain tumors — is that radiation and chemotherapy target developing cells with fast duplication rates. “However, children’s brains are composed of nothing but cells that multiply and grow quickly,” explains **Karin Muraszko, M.D.**, pediatric neurosurgeon and chair of the Department of Neurosurgery at the University of Michigan. “Standard therapies can have devastating side effects on a developing brain, in addition to being generally ineffective in treating glioblastomas.” “Developing new therapies for brain tumors has been a major goal throughout my career in pediatric neurosurgery, and Dr. Castro’s and Dr. Lowenstein’s research has had a similar focus,” continues Muraszko. “Our hope is that their new therapies will be successful in killing the tumor without killing brain cells, especially in children.”

On The Brink

“We have developed a new gene therapy for brain tumors, specifically glioblastomas,” explains Castro. “The therapy consists of two genes. One kills the cancer cells, and the other one trains the immune system to recognize and destroy malignant cells that remain or even recur.” These two therapeutic genes are encoded in adenoviruses that act as vectors to deliver the genes. “Our first adult patients will be treated with this therapy very soon,” continues Lowenstein. “When we establish that it is safe in adults, we hope to quickly expand the trial to pediatric patients. Because this therapy uses the immune system to eliminate the tumor, it will be interesting to see whether our predictions will hold with pediatric patients, given the differences between the immune systems of adults and children.”

Right Place and Time

“The advantage of the gene therapy is that patients will need less chemotherapy and radiation, but it’s critical in children,” explains Castro. “Those aggressive treatments leave kids with very bad sequelae, such as behavior and memory problems. These gene therapies would circumvent the side effects of conventional therapy.” “This is a new, exciting phase for the treatment of brain tumors both in adults and children because it’s the first ever trial in human brain tumors that uses two different adenoviral vectors. It’s really a first for mankind,” says Lowenstein. “The University of Michigan is in a prime position to capitalize on this new technology because of the strength of their neurosurgical teams and the pediatric oncology group. It’s the best place to spearhead this new technology.”



RESEARCH UPDATE

Crosby Neurosurgical Laboratories Yields Notable Publications

The Crosby Neurosurgical Laboratories continue to be very productive with research on cerebrovascular diseases, brain tumors and spine. Guohua Xi, M.D. and Xing Fan, M.D., PhD. each received an R01 grant this year, titled “Mechanisms of Brain Injury after Intraventricular Hemorrhage”(Xi) and “Investigating Cancer Stem Cells - Niche Interactions in Brain Tumor” (Fan). The flavor of some of the research is demonstrated by the following recently published articles.

Zhao, F., Hua, Y., He, Y., Keep, R.F., Xi, G. Minocycline-induced attenuation of iron overload and brain injury following experimental intracerebral hemorrhage. *Stroke* 42: 3587-3593, 2011. There has been considerable interest in the potential use of the anti-biotic minocycline as a neuroprotectant for ischemic stroke. This paper by Dr. Guohua Xi's group demonstrates that it minocycline is also protective in an animal model of intracerebral hemorrhage and that this appears to be related to the ability of minocycline to chelate iron released from the hematoma.

He, Y., Liu, W., Koch, L.G., Britton, S.L., Keep, R.F., Xi, G., Hua, Y. Susceptibility to intracerebral hemorrhage-induced brain injury segregates with low aerobic capacity in rats. *Neurobiology of Disease* 49: 22-28; 2013. The disadvantages of being a couch potato rat. Dr. Ya Hua's group has been studying the effects of intracerebral hemorrhage in rats bred by Drs. Steve Britton and Lauren Koch (Dept. of Anesthesiology) for low and high exercise capacity. It is known that low exercise capacity (being a couch potato) is associated with increased risk of stroke, but Dr. Hua's study shows that it also increases stroke severity after an intracerebral hemorrhage.

Wang, L., Lin, C.Y., Valdivia, J., Than, K.D., Rahman, S.U., Park, P. A novel murine model of human renal cell carcinoma spinal metastasis. *Journal of Clinical Neuroscience*, 19(6), 881-3, 2012. There is currently no reproducible animal model of renal cell carcinoma (RCC) spinal metastasis that allows for laboratory study of the human disease. This report from Drs. Chia-Ying Lin and Paul Park, describes an animal model that reliably reproduces RCC spinal metastasis using a human tumor cell line. A posterior surgical approach was used to implant tumor cells into the lamina of immunosuppressed mice. Our investigation resulted in an orthotopic model of human RCC spinal metastasis.

Ultimately this will allow testing of targeted therapies for RCC with spinal involvement. Furthermore, this model can be expanded to develop similar spinal metastasis models for other tumor cell lines.

Sindac, J., Yestrepky, B.D., Barraza, S.J., Bolduc, K.L., Blakely, P.K., Keep, R.F., Irani, D.N., Miller, D.J., Larsen, S.D. Novel inhibitors of neurotropic alphavirus replication that improve survival in a mouse model of acute viral encephalitis. *Journal of Medicinal Chemistry* 55: 3535-3545, 2012. A multi-disciplinary team involving Internal Medicine, Neurology, the College of Pharmacy and Neurosurgery has been developing new agents to treat viruses that cause encephalitis. Such anti-viral agents are needed to not only treat naturally occurring viral outbreaks but also because such viruses may be ‘weaponized’ by terrorists.

Xiang, J., Alesi, G., Zhou, N., Keep, R.F. Protective effects of isothiocyanates on blood-CSF barrier disruption induced by oxidative stress. *American Journal of Physiology* 303: R1-R7; 2012. If you do wish to be a couch potato, the work of Dr. Jianming Xiang suggests that you should eat your vegetables. Isothiocyanates, chemicals present in cruciferous vegetables and mustard, protected the choroid plexus (the blood-CSF barrier) from oxidative stress.

Zhu, T.S., Costello, M.A., Talsma, C.E., Flack, C.G., Crowley, J.G., Hamm, L.L., He, X., Hervey-Jumper, S.L., Heth, J.A., Muraszko, K.M., DiMeco, F., Vescovi, A.L., Fan, X. Endothelial cells create a stem cell niche in glioblastoma by providing NOTCH ligands that nurture self-renewal of cancer stem-like cells. *Cancer Research*, 71(18):6061-72, 2011. The lab of Dr. Xing Fan previously demonstrated that Notch pathway blockade using a gamma-secretase inhibitor (GSI) depleted cancer stem cells in medulloblastoma and glioblastoma, and prolonged survival in mice bearing intracranial xenografts. A recent Phase I clinical trial study showed that 24% of glioma patients have prolonged stable disease upon GSI treatment. This paper identifies the molecular mechanism by which glioblastoma stem cells acquire elevated Notch activity, and demonstrates that endothelial cells function as a niche to promote glioblastoma stem cell self-renewal. These studies will help develop novel therapeutic strategies for these malignant brain tumors.

Translational Neuro-Oncology Labs Make Huge Strides in First Year at U-M

The Castro/Lowenstein Translational Neuro-Oncology Laboratories has had a busy year getting things going and restarting research after relocating to the University of Michigan. Luckily, they have hit the ground running! Several new faces have accompanied the lab's growth over the past year, Dr. Alexandra Calinescu has joined the lab as a Post-Doctoral Fellow; Christopher Paran, Robert Doherty and Nathan Vanderveen were welcomed as a Research Technicians, and Molly Dahlgren came on board as the Administrative Assistant.

In addition, several Residents have joined the laboratory in projects aiming to understand the pathophysiology and develop new treatments for deadly adult brain tumors: with Dr. Shawn Hervey-Jumper a collaborative project has been started that includes Mr. Vanderveen, and Dr. T.J. Wilson (Neurosurgery), and Dr. Anthony Wang (Neurosurgery) have started rotations for either 2 years or 6 months, respectively. A Pediatrics/Hematology-Oncology fellow, Dr. Carl Koschmann, has joined the laboratory in an exciting new project to develop new models and treatments for pediatric brain tumors. In addition, the lab has been host to several summer interns and volunteers: John Savakus, Harry Galway, Jonathan Krasinkiewicz, as well as UROP students Sarah Surprise, Mohammed Saleh and Angubeen Khan and Fall 2012 semester PIBS rotation students: Nancy Pinnell, Justin Serio and Julian Bahr. The excitement of the ongoing work can be felt in the lab now working (almost) around the clock 24x7, and in the lab meetings where the number of participants continues to grow weekly.

The lab has also published several papers. A few of the most prominent ones are: “Cytotoxic immunological synapses do not restrict the action of interferon- to antigenic target cells” published in the prestigious *Proceedings of the National Academy of Sciences*, May 2012, Volume 109, pages 7835-7840; “Gene therapy mediated reprogramming of tumor infiltrating T cells using IL-2 and inhibiting NF-kB signaling improves the efficacy of immunotherapy in a brain cancer model” in *Neurotherapeutics*, October 2012, Volume 14, pages 757-770; and a book chapter on “Rodent Glioma Models: Intracranial Stereotactic Allografts and Xenografts” in *NeuroMethods*, Volume 77, pages 229-243; 2013.



A very generous donation from the Jenkins Family has now allowed us to purchase a new 3-View automatic scanning-EM microscope from Zeiss and Gatan, that will be installed shortly in the Castro/Lowenstein Translational Neuro-Oncology Laboratories. We expect that the equipment will be up in running in early 2013, following some necessary facility refurbishments. We are excited to have such state-of-the-art equipment to aid us in our research as we continue to strive towards developing effective treatments for glioblastoma multiforme.

Our translational research has also achieved major milestones. A Phase I clinical trial for the treatment of glioblastoma using gene therapy based on discoveries made by Drs. Lowenstein and Castro, and approved in April 2011 by the FDA, has now been approved by the UM-IRB, and UM-IBC. With funding from the PhaseOne Foundation from Los Angeles, and participation of members from the Depts. of Neurosurgery, Neurology, Neuropathology, and Radiation Oncology, a first-in-humans, first-in-Michigan, and first-in-the-world trial is due to start recruiting patients within the next 1-2 months. In addition, Dr. Castro has held a preIND teleconference with the FDA and is moving forward with a second strategy towards our second Phase I clinical trial for patients with malignant glioma. There is certainly exciting basic and translational science in the Castro/Lowenstein Translational Neuro-Oncology Laboratories on the 4th floor of the MSRB II Building. With further grant submissions, and new collaborations with the Department of Chemistry (Kopelman), Physics (Ziff, Sander), Psychology/Psychiatry/ Neuroscience (Flagel, Morrow), Engineering (Garikipati), amongst others, the Laboratories look forward to realizing the potential of one day achieving the cure of deadly brain tumors in adults and children.



The Department of Neurosurgery remains in the top ten nationally in federal research funding, ranking 8th overall in 2012.

FOCUS ON PHILANTHROPY

Handmade Quilts donated to Children of Project Shunt

Since 1997, the University of Michigan Departments of Neurosurgery, Anesthesia, Pediatrics, Plastic Surgery and Operating Rooms have been going to Guatemala to perform neurosurgical procedures for indigent children with neural tube defects. Also joining this dedicated group of UM physicians, residents and nurses has been Dr. Judy Negele, anesthesiologist at St. Joseph Mercy Health System in Ann Arbor. During one of the first missions to Guatemala, Dr. Negele had somewhat guiltily left her one year old daughter at home to be well taken care of by her father. One day, while seeing patients during clinic in Guatemala City, Dr. Negele was taken by the young, poor mothers who had traveled so far from the countryside to get help for their children. She recalls feeling very saddened when she watched one particular mother unwrap her baby from an old gray wool skirt to be examined. She thought about her own baby back home with her beautiful baby blankets and thought, I can help with this – I can collect and bring blankets. She spoke to a friend about her experience and the next thing she knew she had two bags of beautiful handmade quilts. This friend had



casually mentioned to her mother about the plight of the children in Guatemala and her mother, Lucy Lesperance, got to business. Ms. Lesperance is part of a quilting group, and this group of approximately 15 ladies now had a mission of their own, to make quilts for the Project Shunt team to take and distribute to the sick children in Guatemala. For over a decade, Ms. Lesperance and the quilting group have been providing beautiful, colorful quilts that have now become a tradition, such that some of the returning children even bring their quilt with them to remember the occasion and event upon which they received their quilt!

The Project Shunt team cannot thank the quilting group enough for their kindness and efforts with respect to providing for these indigent children. Many of the Guatemala parents indicate that the quilt is the nicest thing their child has ever received and they are humbled by the generosity shown to them. A very special thank you to this year's quilting group including the aforementioned Lucy Lesperance, Diana Leedy, Kay Shepke, Shirley Leja, Karen Whitney, Marilyn White, Janet Nelson, Marie Jacques, Barb Hodges, Sue Volkman, Jane Larkin, Maggie Robbins and Virginia Sinco. We are fortunate to have you as colleagues and friends.

Storage Unit Donated for Project Shunt Since 2003

The Project Shunt team would like to recognize Maple Village Self Storage in Ann Arbor for their very generous contribution year after year to Project Shunt. On February 1, 2003, they donated a climate controlled storage unit to the Department of Neurosurgery to safely store the numerous supplies needed for the annual mission trip to Guatemala. Nearly 10 years later, we continue to use the space and cannot thank them enough for their kindness and generosity. The total value of this donation to the mission has now reached over \$20,000 dollars!

Thank you Maple Village Self Storage!



Motor City Golf Classic 2012

The 23rd annual Motor City Golf Classic (MCGC) in its 7th year benefiting the U-M Department of Neurosurgery was held on August 13, 2012. It was another fun-filled great event this year and an awe-inspiring success. Thanks to all who participated, sponsored, or donated to this wonderful event!

Highlights from the 2012 MCGC:

- Six Corporate Sponsors – the most in our 7 years
- Young Hero Award presented by Michigan Air National Guard to Bailey Sparrow (see feature below)
- Adult Patient Success Story (added in 2012); Honored Patient - Chris Brooks
- MCGC Salute of Excellence Award – Frank Bozich, BASF Inc.
- Special recognition of the U.S. Armed Forces and the playing of Taps by retired marine Bear Hall
- Spectacular car display
<http://www.youtube.com/watch?v=1iZ52G7NDv4&feature=youtu.be>
- Raised over \$50,000 in funds for distribution via MCGC Grants
- MCGC Grants awarded from 2007-2012 – 62 total grants totaling over \$250,000

The Young Hero Award highlights the event each year. Bailey Sparrow was this year's MCGC Young Hero recipient. She is 10 year old and has Neurofibromatosis II. She has had a successful first procedure but will need more in the future. Her father has the same neurologic disorder, and he has also been cared for at the U-M Health System. She is a very brave young lady with a unique perspective on the pain and discomfort of surgery. She has watched her father recover from a number of surgical procedures, and knows that both of them will likely have more surgery in the future. When she awoke from her surgery, she was in a lot of pain. Her surgeon, Hugh Garton M.D., consoled her by telling her that they would get the pain under control with medications soon. She replied *"That's OK, I have to practice this (dealing with the pain) so I can be like my Dad."*

Like most young girls, Bailey loves shoes. She was presented with multiple pairs including a tall pair that she had been eyeing for months and begging her mother to buy. The Young Hero program mantra is "not all brave soldiers wear a uniform." Bailey – the brave soldier – is not wearing a uniform, but she is now proudly wearing a pair of shoes that remind her of her bravery and the young hero example that she has set for other young children fighting debilitating diseases. Bailey, you are an inspiration to all of us, you were not given the Young Hero Award, you earned it!



Team Ramnath

Team Ramnath Dedicated to Project Shunt

Since the fall of 1998, and with help from The Pediatric Foundation of Guatemala, a team of U of M neurosurgeons, anesthesiologists, residents and nurses have performed hundreds of successful operations during the annual mission to Guatemala called Project Shunt. The long-range goal of Project Shunt continues to be helping to create a self-sufficient system capable of conducting its own follow-up care while educating local Guatemalan neurosurgeons, physicians and families.

Dr. Suresh Ramnath and his wife Marna form "Team Ramnath." They have been instrumental in raising funds each year to support Project Shunt. This year the couple team raised \$14,801 which supported not only complex surgical cases and medical supplies but also toys, clothes toothbrushes, Spanish educational materials, and food to the patients' families. Dr. Ramnath has participated in every trip since the programs' inception. He and Marna are passionate about the endeavor and have made a huge impact on the lives of the children and families in Guatemala. Dr. Ramnath has been in every mission to Guatemala since the project started.



OUTREACH

2012 Brachial Plexus Palsy Camp “Creates Connections”

At the delight of our patients and families, this year’s 4th Annual University of Michigan Brachial Plexus Palsy (BPP) Camp held its first overnight event in August 2012 at the Howell Conference and Nature Center. We and our patients much appreciate the continuing generous support of the Motor City Golf Classic and the additional sponsorship this year by the Mott Golf Classic.

Our camp theme was “Creating the Connections.” We connected baby and toddler patients / families with teenage patients / families, allowing them the opportunity to share their experiences and emotions. We also connected patients with their medical care practitioners through informational seminars presented by medical and legal professionals including our visiting speaker, Dr. Patricia Burtner, Occupational Therapist from the University of New Mexico. Connections ensued with the introduction of a discussion panel composed of patients and parents.

Connecting continued with our BPP parents experiencing a shared disablement with their child. During lunch we asked the adults to eat with a sock covering their dominant hand. This activity provided parents with a first-hand view into the daily challenges facing kids with BPP.

Previous campers connected with new campers through outdoor activities. The camp kids renewed friendships with old friends and made new friends while practicing archery, playing gaga dodge ball, zip line, climbing wall, and canoeing. Our staff were omnipresent to assure the safety of the kids and to aid in participation of activities when needed with adaptations such as braces. All enjoyed the evening with song and dance around the campfire, smores, popcorn and a movie, and a new Kinect game masquerading as occupational therapy developed by U of M computer engineering students.

All the camp connections created have resulted in the furthering of our understanding of NBPP, advancement of our medical and surgical treatment for our patients, opportunities to develop new assistive technologies, and new platforms for patient-to-patient connections via www.bpsocialnet.com. We thank our patients, staff and volunteers, and our generous supporters, and we look forward to our 2013 BPP Camp!



The Department of Neurosurgery at the University of Michigan presents

William F. Chandler, M.D.

The Chandler Festschrift was a celebration of 38 years of outstanding service and dedication to Michigan Neurosurgery. The event included a cocktail welcome reception, a scientific meeting, a festschrift banquet, and ended with a U-M football tailgate brunch. The festschrift honored the wonderful career of Dr. William Chandler, the consummate physician, educator and surgeon – “the velvet hammer.” It was truly a celebration of a remarkable man along with a remarkable career.

FESTSCHRIFT



**The University of Michigan
Department of Neurosurgery**

Dear Friends, Colleagues, and Alumni,

Susie and I want to thank you from the bottom of our hearts for being part of the wonderful Festschrift event. It was truly a celebration of the University of Michigan Neurosurgery experience.

It was a joy for me to see so many of our past residents having fun interacting with friends and colleagues. It was like a large reunion of a loving family.

I am so proud of each and every one of you for what you do and have done either here in Ann Arbor or elsewhere. You are all the finest representatives in your integrity and professionalism of the “Leaders and Best.”

During my entire career here at Michigan there has been a unique culture of positive support for everyone in the Department. It is a privilege for me to be a part of this long tradition of excellence. I wish you and your families the very best in the future.

Sincerely yours,
William F. Chandler, M.D.
 William F. Chandler, MD
 Richard C. Schneider Professor of Neurosurgery

September 13-15, 2012



Make a Difference

Let us help you discover a way to make the Michigan Difference in the Department of Neurosurgery. Whatever your interest, you can help further our mission by supporting cutting-edge research, advancing patient care, supporting medical education or helping fund important outreach programs.

For more information on making a gift to the Department of Neurosurgery at the University of Michigan, please contact:

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