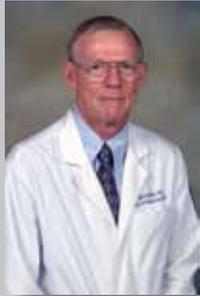




## Dr. Donald Smith Receives SMS Award



Dr. Donald Smith, Clinical Professor of the Department of Neurosurgery at LSU Health Sciences Center in Shreveport, was the recipient of the Shreveport Medical Society's annual Distinguished Service Honor award on December 6, 2009.

The award was presented to Dr. Smith at the Shreveport Medical Society's Holiday Buffet/Officers Installation at the Shreveport Club. The Distinguished Service Honor

Dr. Donald Smith  
Clinical Professor  
Dept of Neurosurgery

Award is bestowed upon an individual who has made an outstanding contribution to the advancement of medicine in the Shreveport area. Dr. Smith has made significant contributions to the Shreveport Medical Society as well as, serving as President in 1986.

Dr. Smith continually demonstrates professional excellence in neurosurgery through training resident physicians and allied health personnel, mentoring junior faculty, and offering outstanding care to patients. A native of Louisiana, he established the first Neurosurgical Service at LSUHSC in 1977. He is a retired member of the U.S. Air Force Reserves and served in both the Vietnam War and Desert Storm. He received the Meritorious Service Award for contributions.

The staff and residents of the LSUHSC-S Department of Neurosurgery attended the ceremony along with Dr. Smith's family, friends, and colleagues. We are thankful for Dr. Smith's continuing dedication to the field of neurosurgery.

## Department Welcomes Endovascular Radiologist



The Department of Neurosurgery is proud to present our new Endovascular Radiologist, Dr. Hugo Cuéllar.

Dr. Cuéllar is an Assistant Professor of Clinical Neurosurgery and will serve as the Interventional Neuroradiologist for the department, bringing with him a wealth of experience in coiling aneurysms, embolizing AVMs, and other neurointerventional procedures.

Dr. Hugo Cuéllar  
Assistant Professor of  
Clinical Neurosurgery

in Neuroscience from the University of Madrid and is currently working to complete a PhD in Medicine.

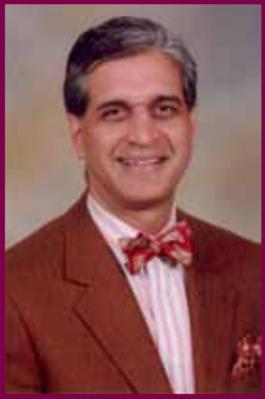
Prior to joining LSU Health Sciences Center, he worked for the Department of Endovascular Therapy at Clínica Nuestra Señora del Rosario in Madrid, Spain.

His clinical interests include endovascular therapy in cerebral and spinal vascular malformations, brain aneurysms, stroke, and tumors of the brain, head, and neck.

Dr. Cuéllar completed his internship and residency at University of Nuevo Leon and Spanish Ministry of Science and Education. He received his masters

65 yo female patient with right ruptured PCOM aneurysm  
Fig. 1 & 2- Pre coiling images  
Fig. 3- Post coiling images





## Upcoming Events:

### April

23rd: Levy Conference with  
Visiting Professor  
*Dr. Steve Giannotta, MD*

### October

2nd: Neuro Update 2010  
Educational Event for CME  
& CEU Credits

University Neurosurgery  
Brain & Spinal Column

Medical Editor:  
Anil Nanda, MD, FACS

Designer/Writer:  
Lindsey M. Hudson

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Lauren Sowell  
Diane Vaden

Brain & Spinal Column is written for physicians and should be relied upon for medical education purposes only. It does not provide a complete overview of the topics covered, and should not replace the independent judgement of a physician about the appropriateness or risks of a procedure for a given patient.

## Message from the Chairman

Greetings from LSUHSC-S! I am delighted to announce that Hugo Cuéllar, M.D., our new Endovascular Radiologist, has been busy since he arrived coiling aneurysms and embolizing AVM's. Kindly feel free to call us directly for any Endovascular needs.

The department was pleased to be recognized by the RRC with an increase in residency spots. This will go a long way in fulfilling the underserved neurosurgical needs of the state. A lot of hard work goes on behind the scenes, and we would like to give kudos to our Residency Coordinator and support staff for helping us with the RRC.

We are able to transfer patients with minimal delay. Appropri-

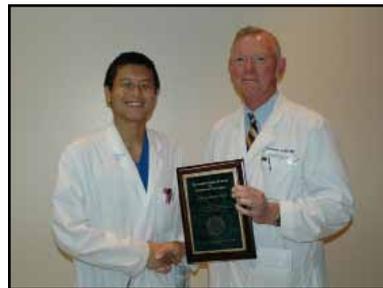
ate triaging allows us to transfer patients with intracranial conditions like aneurysms, AVMs, and tumors even more expeditiously. In general, such patients are seen within 24-48 hours.

We are also delighted that Dr. Li has received an NIH grant. This now ranks us #36 in the country in terms of NIH funding and is a source of pride to the school. Hope you have a great year.

Sincerely,

Anil Nanda, MD, FACS  
Professor and Chairman  
Department of Neurosurgery  
LSUHSC-Shreveport

## New Resident Wins Donald R. Smith Award



Dr. Donald R. Smith and  
Dr. Shihao Zhang

The Donald R. Smith Award for Excellence in Neurosurgery is given in honor of Dr. Smith's innumerable contributions to the practice of neurosurgery in Louisiana. The recipients are chosen from graduating medical school students at LSUHSC-Shreveport who have shown outstanding commitment and dedication to the field of neurosurgery.

This year's recipients were Shihao Zhang and Tyler Auschwitz,

who were presented the awards by Dr. Smith. Auschwitz and Zhang were also honored for this award by Dr. Smith and Dr. Nanda at the Awards Convocation. Past recipients have included Christina Notarianni, MD, Cedric Shorter, MD, Rishi Wadhwa, MD, and Justin Haydel, MD.

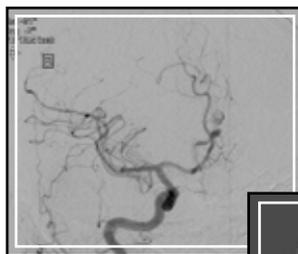
The Department of Neurosurgery faculty and staff selected Shihao Zhang and Osama Ahmed to be the newest residents in the Neurosurgery Residency Program.

Our Neurosurgical Residency Training Program provides an academic environment that fosters excellence in clinical neurosurgery and research. The seven-year program trains residents to be outstanding clinicians, active investigators, and experienced educators in the neurosciences.

## Mirror Aneurysms of the Distal Anterior Cerebral Artery

*Shashikant Patil, MD*  
*Anil Nanda, MD, FACS*

A 41-year-old female with an 8-month headache history was initially evaluated for sinusitis with a contrasted CT head scan. The contrasted CT scan of the head was suspicious for an anterior cerebral artery aneurysm. A cerebral angiogram was performed that showed bilateral distal ACA (DACA) aneurysms. She had no other significant medical or surgical history, and her review of systems were positive only for headaches. Surgery was planned electively after discussing the benefits and risks of securing these aneurysms with the patient. The patient was taken for surgery, and a bicoronal craniotomy was performed. Using the inter-hemispheric approach, clipping was done in the left and right sided aneurysms through the craniotomy site. Post-operative course was uneventful, and the patient was discharged home after a few days.



Surgical management of DACA aneurysms provides a long-lasting result, with very small rates of re-bleeding. After surviving three years after a DACA aneurysm rupture, the long-term survival of these patients becomes similar to that of the matched general population.

However, clipping of DACA aneurysms can present many difficulties. There is a narrow interhemispheric space, and the callosal cistern is usually small. The falx may be long and deep with dense adherence of the aneurysm to the falx and the cingulate gyri. It may be difficult to get good proximal control, as the aneurysm is usually encountered first during the dissection before getting the proximal parent artery. Apart from the SAH itself, the most important factor that affects the mortality and morbidity is the presence of additional aneurysms.

Bilateral DACA aneurysms in mirror locations are extremely rare and are usually associated with congenital anomalies. Anatomic variations are also common in the DACA aneurysms and are usually small. They rupture before any mass effect from the aneurysm itself. Ruptured aneurysms usually produce a frontal hematoma apart from the SAH.

All patients with the DACAs should be thoroughly worked up and evaluated for the presence of additional aneurysms. In our patient, the aneurysms were found incidentally before they ruptured. Unruptured aneurysms have a much better overall outcome, especially when both the aneurysms can be approached through a single craniotomy, as in this case.

## Department of Neurosurgery Obtains NIH Grant



Dr. Li, Assistant Professor with the Department of Neurosurgery and the Department of Physiology, received a five year, 1.6 million dollar grant from the National Heart, Lung, and Blood Institute and the National Institute of Health.

The grant, which allows for additional post-doctoral research fellows in the Department of Neurosurgery, provides funding for research in the development of therapeutic strategies to prevent and treat vascular disease in humans. Several preliminary studies were conducted

in preparation for the grant, before Dr. Li applied. The new research project is based on prior studies and is designed to better explain the mechanisms of re-stenosis, using the well-established mouse model of vascular injury and repair.

Dr. Li is the project leader and will focus laboratory research on the role of inflammation in thrombosis and tissue ischemia/reperfusion injury. "This grant is very important because it will move the department forward in our cardiovascular disease and stroke research," Dr. Li stated.



## Shunting Techniques for Hydrocephalus Disorder



*Christina Notarianni, MD*  
Dr. Notarianni is currently completing a pediatric fellowship at St. Jude's University of Memphis and will be the first

fellowship trained Pediatric Neurosurgeon in North Louisiana. She will start working for University Neurosurgery in the Fall of this year.

Hydrocephalus is a common pediatric disorder resulting from a mismatch in cerebrospinal fluid (CSF) production and absorption. This condition encompasses many pediatric diseases, including congenital malformations, spinal dysraphism, intraventricular hemorrhages, infections, and tumors. Studies have shown that hydrocephalus, which presents over 15,000 new cases each year, disrupts the overall cytoarchitecture and cytology of cortical neurons. The most injured area is periventricular white matter, with damaged axons and dying oligodendrocytes, needed for myelination of white matter tracts in the developing brain.

CSF shunting with one-way valve systems has developed into a billion-dollar industry with the continued advancement in valve technologies. Shunts have shown to extend survival and lead to an improved neurological outcome.

The most common shunt is ventriculo-peritoneal. In this procedure, a small hole is drilled in the skull, and a catheter is inserted into the lateral ventricle of the brain. This catheter is connected to a one-way valve and a distal catheter that is tunneled under the skin to the abdomen. A small incision is made in the abdomen to insert the distal end of the catheter into the peritoneal cavity. CSF is diverted through



this shunt and reabsorbed in the peritoneum. Since shunts can fracture, become blocked or infected, or experience drainage complications, as many as 50% of shunts will need to be



revised within the first year.

An alternative and new procedure for hydrocephalus is endoscopic third ventricu-

lostomy. A small hole is made off the midline in the skull, and an endoscope is inserted into the lateral ventricle. After the camera is directed from the lateral ventricle into the third ventricle, a perforation is made through the floor of this structure to allow the ventricular space to communicate with the subarachnoid space in the brain. This provides an alternate route of CSF flow in the brain to reduce hydrocephalus. Furthermore, there is no permanent shunt tubing or foreign bodies which could later become infected or malfunction.

Both procedures typically take under one hour to complete, and most patients will go home one to two days after surgery.

## ACGME Expands Residency Training Program at LSUHSC-S

The Department of Neurosurgery at LSUHSC-Shreveport is pleased to announce that our residency training program has been approved by the Accreditation Council for Graduate Medical Education (ACGME) for continued full accreditation with the maximum five-year review cycle.

The evaluation by the review committee verifies the training program's compliance with the nationally established guidelines for education in Neurological Surgery. Our program excels in all areas, including

academic productivity, case volume, and training facilities.

Having previously been awarded two resident complement increases, our program now recruits and trains two residents per year, making us the largest neurosurgical training program in the state of Louisiana. We are proud to join the ranks of premier places to train in the South.

We believe that our commitment to our patients, our community, and to the advancement of health care has shown

through our research and is enhanced by the addition of bright young minds.

We are very pleased to have passed our evaluation with the highest marks, reinforcing our commitment to producing outstanding clinicians, active investigators, and committed educators.



## LSUHSC Neuroscience Symposium 2009



Chancellor Robert Barish, M.D., M.B.A.

The LSU Health Sciences Center- Department of Neurosurgery, in conjunction with Northwestern State University Nursing, hosted the Neuroscience Symposium 2009, a one-day continuing education course on October 3rd at

the Holiday Inn, located in downtown Shreveport, LA.

The symposium featured a unique mix of neuroscience topics and ideas. Chancellor Robert Barish, M.D., M.B.A., was the honored guest speaker for more than 100 participants. His lecture, "Unique Poison Center Issues: Envenomations," discussed treatment options for poisonous snake bites.

Participants in the Neuroscience Symposium included nurses, nurse practitioners, physicians assistants, physicians, and other allied healthcare professionals interested in neurosurgical issues. This is the fourth symposium hosted by University Neurosurgery. Guests traveled from Louisiana, Texas, and Arkansas.

The neuroscience symposium is designed to advance knowledge through various presentations, benefiting those who do not encounter neurosurgical patients on a daily basis.

Additional speakers included Dr. Roger Kelley, Dr. Anil Nanda, Dr. Bharat Guthikonda, Dr. Anthony Sin, Dr. Paul McCarthy, Dr. Raul Cardenas, Dr. Prashant Chittiboina, Dr. David Connor, Peter Molnar, APRN-C, Alice Edwards, PA, Tabitha Ward, RN, Sheree Jordan, RN, and Denise Taylor, RN.



Symposium participants enjoying the various scientific presentations.



## Indocyanine Green Video During Aneurysm Surgery: Utility and Limitations

Bharat Guthikonda, MD  
Assistant Professor & Neurosurgeon

Surgical clipping of cerebral aneurysms remains a commonly performed procedure that is, at the same time, thrilling, yet fraught with potentially devastating pitfalls. The main goal of aneurysm clipping is to completely occlude blood flow to the aneurysm while maintaining normal patency of the native circulation. Intraoperative confirmation of these two requirements is crucial to avoid either an incompletely clipped aneurysm or inadvertent clip occlusion of a normal vessel.

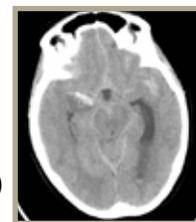


Figure 1

To date, intraoperative angiography (IA) has been the gold standard to evaluate for residual aneurysm or occluded parent vessel. However, IA does have some limitations. There is a small rate of ischemic complications associated with IA. Some medical centers will not have ready access to IA. Some aneurysms, such as those of the posterior inferior cerebellar artery (PICA), require that the patient be placed in the lateral or prone position. IA would be technically challenging in the lateral position and nearly impossible in the prone position. The lack of three dimensional reconstruction capabilities in the operative suite may also lead to missed aneurysm remnants. IA also adds both time and expense to the surgical procedure.

A recent advance in vascular neurosurgery has been the use of indocyanine green video angiography (ICGVA). Indocyanine green is a near-infrared fluorescent dye which can be injected intravenously and circulates only within the intravascular space. Once injected, the field of interest (the aneurysm and surrounding vasculature) is illuminated by a near-infrared light setting incorporated into the neurosurgical microscope, developed by Carl Zeiss (Oberkochen, Germany). A special optical filter incorporated in the video angiography setting of Zeiss Pantero microscope excludes ambient light such that only the ICG fluorescence is seen. This allows real time assessment of the completeness of aneurysm clipping, as well as patency of the parent vessels. An additional advantage is that both small and large caliber vessels



Figure 2

*Continued on page 5*

**University Neurosurgery's**  
multidisciplinary team is pleased to serve  
you and your patients in these locations.

## Clinics

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Shreveport, LA 71103  
p: 318.635.6363, f: 318.631.5392

### Willis Knighton Bossier

2300 Hospital Drive, Ste. 350  
Bossier City, LA 71111  
p: 318.742.8666, f: 318.742.8488

### Willis Knighton Pierremont

8001 Youree Drive, Ste. 830  
Shreveport, LA 71115  
p: 318.813.1555, f: 318.675.8958

### Willis Knighton South

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Shreveport, LA 71118  
p: 318.813.1555, f: 318.675.8958

### Gamma Knife Radiosurgery

1501 Kings Highway  
Shreveport, LA 71103  
p: 318.675.6195, f: 318.675.8944

### NeuroInterventional Surgery

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**Business Office: 318.675.8299**

**Editorial Office: 318.675.5392**

**Nursing Office: 318.813.1555, 1888.740.7246**

## Upcoming Visiting Professors

### Lawrence Marshall, M.D.

March 31, 2010  
4 p.m., LSUHSC-S



### Steve Giannotta, M.D.

Professor and Chairman  
University of Southern California  
Department of Neurological Surgery  
LEVY Conference: April 23, 2010  
10 a.m., LSUHSC-S



### Hildo Azevedo-Filho MD, PhD, MSc, FRCS(SN)

Professor & Chairman of Neurological Surgery  
Hospital da Restauração  
University of Pernambuco, Brazil  
May 7, 2010, 4 p.m., LSUHSC-S

### Gerardo Guinto, M.D.

May 12, 2010  
4 p.m., LSUHSC-S



### Nathan Selden, MD P.h.D., F.A.C.S., F.A.A.P.

Professor of Neurological Surgery  
Oregon Health & Science University  
June 23, 2010, 4 p.m., LSUHSC-S

### Greg Thompson, M.D.

September 8, 2010  
4 p.m., LSUHSC-S

Please visit [universityneurosurgery.com](http://universityneurosurgery.com)  
for more information on upcoming visiting professors.



Figure 3

will be seen, thus allowing evaluation of important perforating branches that must be preserved. No side effects at the accepted dosages are described.

We have been using ICG VA at our institution for nearly all aneurysm clippings over the last 6-12 months. We have found it to be easy to use, safe, fast, and effective in obtaining our desired information. It has led to clip repositioning on several occasions to more completely secure an aneurysm or to prevent kinking/occlusion of a normal blood vessel.

As with IA, there are some limitations to ICG VA. Unlike IA, ICG VA will not outline vasculature outside of our exposed field. This includes both vessels, that are on the "back side" of the aneurysm, or undissected vessels that remain covered with cortical tissue. This may be relevant in cases in

*Continued from page 3*

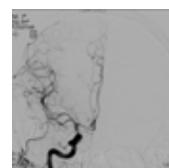
which the distal portion of the aneurysm clip is outside of the direct microscopic field (i.e, hidden from view by undissected tissue) and may be inadvertently occluding a vessel. In general, however, the clip is placed in such a way that its distal tip can be seen in our field of view.

Another limitation is that the video angiography setting is not incorporated into all surgical microscopes. Therefore, use of Carl Zeiss microscopes is necessary, which may be an additional expense.

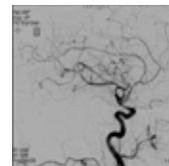
We have found ICG VA to be an excellent adjunctive tool that is easy to use, fast, inexpensive, and full of useful information. We are not ready to completely replace IA with ICG VA, but we feel that it is certainly helpful in making aneurysm surgery safer for our patients.

**CASE EXAMPLE:**  
61-year-old female presented to

the emergency room with worst headache of her life. She had a history of hypertension. On physical examination, she was arousable but confused. She moved all four extremities to command. CT brain without contrast revealed diffuse subarachnoid hemorrhage (Figure 1). She subsequently underwent CT angiography that revealed a right sided posterior communicating artery aneurysm (Figure 2). She underwent a right frontotemporal craniotomy for clipping of the ruptured aneurysm. ICG VA was performed after the aneurysm was exposed and again after clipping of the aneurysm (Figure 3). No residual flow is seen in the aneurysm, and the normal vessels remain patent. A conventional angiogram was performed on post-operative day 1 (Figure 4) and confirmed successful clipping.



Figure(s) 4



## Society of University Neurosurgeons Annual Meeting

Dr. Anil Nanda, Chairman and Professor of the Department of Neurosurgery at LSU Health Sciences Center and current SUN Secretary/Treasurer and 2011 president-elect, attended the Society of University Neurosurgeons 43rd Annual Meeting in Rome, Naples, and Capri, Italy on June 10-14, 2009, along with department members Dr. Anthony Sin and Dr. Christina Notarianni. SUN members and guests gathered to review clinical cases, describe trends in neurosurgery, and identify program innovations from experts around the world. There were approximately 60 internationally recognized neurosurgeons in attendance.

Dr. Anthony Sin, Assistant Professor at LSUHSC-Shreveport states that, "this was the best scientific meeting in an outstanding location." While enjoying the many delights of Italy, SUN members and guests toured the Vatican and had an audience with Pope Benedict XVI. Those in attendance included Shreveport Neurosurgeons Dr. Anil Nanda, Dr. Anthony Sin, and Dr. Christina Notarianni, who received special recognition by Pope Benedict XVI. Dr. No-

tarianni said, "It was truly an unforgettable experience. The cardinal representing all English speaking people of North America recognized a group of neurosurgeons visiting from the United States. We all cheered, and the Pope turned to us and waved. It was such a great moment."



Dr. Anil Nanda presented on "Microsurgical Treatment of Anterior Skull Base Meningiomas" and "Renaissance Neurosurgery: Italy's Iconic Contributions." Dr. Anthony Sin presented on "Standing Scoliosis X-ray Studies to Evaluate and Restore Sagittal Balance for Adult Spinal Deformity Cases."

Dr. Notarianni's presentation was titled, "Endothelial Nitric Oxide Synthase (eNOS) Gene Polymorphisms (G894T, T786C) Predispose Premature Infants to Intraventricular Hemorrhage (IVH) in African Americans," a presentation about premature infants suffering from intraventricular hemorrhage. The 44th annual meeting of the Society of University Neurosurgeons will be held at the University of Miami on March 21-24, 2010.

## Department of Neurosurgery

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## University Neurosurgery Upcoming Events:

### **Mary Louise and Ben Levy, Jr. Conference**

Visiting Professorship in Neurosurgery  
April 23, 2010 at LSUHSC-S  
10 a.m., LSUHSC-Shreveport

### **Neuro Update 2010**

Educational Event for CME & CEU Credits  
Saturday, October 2, 2010  
Shreveport Convention Center