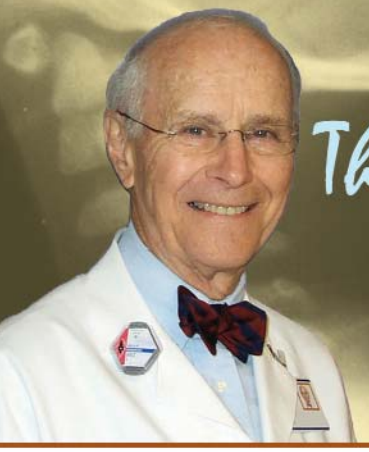
March 2010 : Volume VII, Issue 1



The Keats Society newsletter

The Keats Society funds E-Anatomy Program for Residents

In the tradition of the Keats Society, funding was made available this year to license all current residents to have ready access to an E-anatomy online program (IMAIOS). Testimonial appreciation from two residents follows. This was a huge gift to the residents, who are only the first to benefit in this way from the generosity of Keats Society donors and members alike.

"Having full access to the E-anatomy online program has been awesome. On more than one occasion on call, I have been able to make a more confident diagnosis because of it. The information I can get quickly is in an electronic, cross-sectional format just like on PACS, making it more valuable and applicable. I'm very grateful to have this resource available."

Sean Kalagher, MD
Resident Physician, Department of Radiology
University of Virginia

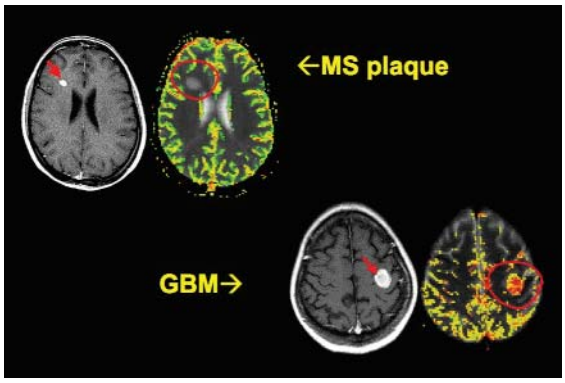
"I would like to thank the Keats' Society for graciously purchasing a subscription to E-anatomy online, which is an invaluable tool for radiology resident education known the world over. This gift is an excellent resource for residents, and will undoubtedly serve to enrich the scholarship of countless residents to come."

Sean Martinez, MD
Resident Physician, Department of Radiology
University of Virginia

UVA Neuroradiology: Our Patients now benefit from advanced neuroimaging techniques!

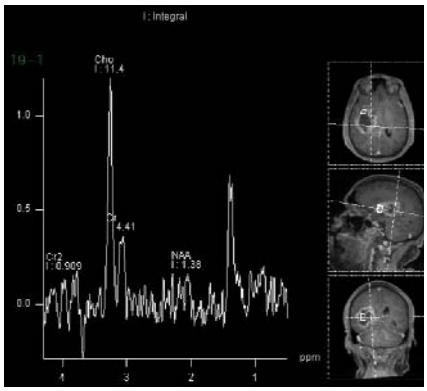
Manal Jilwan-Nicholas, MD; Prashant Raghavan, MBBS; Max Wintermark, MD - UVA Neuroradiology

The Neuroradiology Division at UVA has recently implemented advanced neuroimaging techniques to provide improved care to our patients. These techniques, which are noninvasive and include perfusion imaging, spectroscopy, diffusion tractography and functional MRI, notably of benefit to patients with brain tumors, as they allow to extract significantly more information than the conventional, morphological images. They allow for a more accurate assessment of tumor extent, improve the planning of surgical treatment, and allow the monitoring of the response to chemo and radiation therapy.



Perfusion imaging allows to distinguish two enhancing nodular lesions that look very similar on post-contrast imaging. One has low cerebral perfusion and is a multiple sclerosis plaque, the other has increased perfusion and is a glioblastoma multiforme. Management of these two lesions is of course very different, and perfusion imaging obviated an unnecessary brain biopsy in the patient with multiple sclerosis.

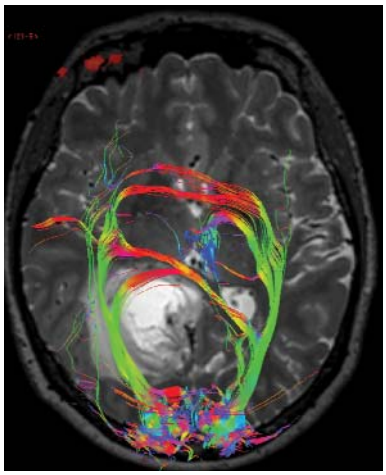
MR Perfusion imaging directly evaluates tumor angiogenesis, and has been shown to monitor the effect of modern antiangiogenic drugs. Perfusion imaging is currently performed as a dynamic contrast-enhanced MRI sequence, with a bolus of gadolinium contrast injected to the patient, and MRI used as a tool to monitor its wash-in and wash-out in the brain. A newly investigated technique called Arterial Spin Labeling (ASL) that utilizes electromagnetically labeled arterial blood water as an endogeneous contrast agent and alleviates the need for paramagnetic contrast administration is presently under investigation



MR spectroscopy at the level of a large necrotic right temporal lobe tumor shows elevated choline (Cho), decreased N-acetylasparate (NAA), and a lipid peak (arrow), which represent the metabolic signature of a high grade glioma.

MR spectroscopy is a noninvasive technique that looks into the metabolism of the brain at a chemical level. Different metabolites appear as different "peaks" on a spectrum. The relative importance of different metabolites allows to differentiate tumor from radiation necrosis, grade gliomas and map their margins.

Diffusion Tensor Imaging (DTI) is an imaging technique that allows to virtually dissect the white matter tracts in the brain. This entirely noninvasive technique does not involve the administration of intravenous contrast. DTI enables the generation of color maps of white matter tracts surrounding a brain tumor and which may be displaced or disrupted by the tumor. The neurosurgeons can then plan the resection of the tumor while preserving as much as possible the integrity of vital white matter tracts. This information can be made available on their neuronavigation system, and help them during the surgery.



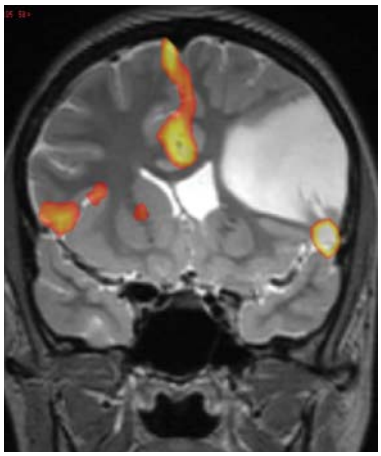
Tractography demonstrating displacement of the right optic radiations (arrow) by a malignant glioma

Welcome Dr. Max Wintermark, Division Head, Neuroradiology.

Dr. Wintermark brings a broad range of neuroradiology experience to UVA from the University of California, San Francisco, where he served as a faculty member for the past five years. He is an expert in CT technology and advanced imaging techniques such as perfusion imaging, spectroscopy, diffusion tensor imaging, and functional imaging. He has vast clinical and research expertise in imaging patients with cerebrovascular conditions such as stroke and aneurysms. He will also be caring for adult and pediatric patients with brain, head, and neck tumors, back pain, traumatic brain injury or neurodegenerative conditions.

Functional MRI maps areas of cortical activation while the patient is asked to perform a task, for instance moving his fingers or repeating a sentence. This allows mapping of the tumor in relation to the eloquent cortex, motor cortex, or other areas of cortical function, and to guide the surgeon in determining how far it is safe to perform a surgical resection without damaging vital brain structures.

We plan to organize soon a CME course to teach these advanced neuroimaging techniques. We will keep you posted! In the meantime, if you have any question, please do not hesitate to contact us. We will be happy to answer your questions!



Functional activation map shows displacement of the left Broca's area inferiorly by a glioma (arrow)

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Renovation to MOSS

Renovations on the Moss Amphitheater have recently been completed. This was funded mostly from the $5000 Master Educator Award received and donated by Dr. Spencer Gay. Walls were patched and painted, new carpeting laid, seats re-upholstered, video screen repaired and a new plaque hung on the wall. A great big THANK YOU goes to Dr. Gay for his generosity on behalf of this worthy project!

Several other opportunities for improvements specific to our residents are waiting for funding. In particular, our residents would love to have the ACR Learning File residency program site-license which has an annual fee of $4,200 for 21-50 residents. If you are interested in funding all or part of this educational gift, please contact Karen Barden at Karen.barden@virginia.edu.

Annual Alumni Reception at the RSNA

For the sixth consecutive year, supporters of the Keats Society gathered in Chicago during the 2009 RSNA. It was a wonderful evening in the beautiful King Arthur Court Ballroom at the Intercontinental Hotel. This venue has been very popular with the Keats Society. Please plan to join us at this same location on Tuesday, November 30, 2010 where we will gather again. Note: We are going back, and staying with, our usual Tuesday night gathering.








2009 RSNA Award Winners

Cum Lade:

Amebic Encephalitis: Another Ringer?
Joshua Dowell, MD, PhD; Curtis Anderson, MD, PhD;
Sugoto Mukherjee, MBBS; Prashant Raghavan, MD

Certificate of Merit

What Really Is a Flow Limiting Stenosis: Review of Ohm's Law and Fluid Mechanics and How It Applies to Vascular Imaging
Asim Choudhri, MD; Christopher Durst, MD; Derek Kreitel, MD;
Patrick Norton, MD

Save the Date . . .

RSNA Reception 2010

Tuesday, November 30, 2010
Intercontinental Hotel, Chicago

Homecoming 2011

May 13-15, 2011