

Spring 2010


**JOHNS HOPKINS**  
M E D I C I N E

# RADIOLOGY *report*

a publication for friends and colleagues of the Russell H. Morgan Department of Radiology and Radiological Science

## How Much Is Too Much?

**What is a safe amount of radiation? Will I get too much radiation from CT scans? Will the airport full-body scanners increase my risk of cancer?**

These are the questions being asked of the Chief Physicist for the Johns Hopkins Hospital, Dr. Mahadevappa Mahesh—and he has the answers.

“In addition to increased concerns about the safety of airport screening, two recent articles have drawn considerable attention to the amount of radiation someone can get from routine medical x-ray imaging, such as CT and fluoroscopy,” explained Dr. Mahesh. He went on to say that the two recent articles published in the Archives of Internal Medicine have caused a lot of “buzz” about CT doses and the variability in CT doses across and within hospitals.

Although radiation doses in diagnostic imaging have not been a concern because of the low levels used, this subject has been receiving more attention after a 2009 report by the National Council of Radiation Protection and Measurements (NCRP) on radiation exposure to the U.S. population from all sources. The NCRP Report 160 reported that the radiation dose from medical x-ray procedures has increased by more than 600% over the past

25 years. This is mainly due to the increased number of CT scans (nearly 68.7 million scans in 2007) and other medical x-ray imaging procedures. As a co-author on both of the articles that were published in the Archives of Internal Medicine, and also as a committee member of the NCRP report 160,

Dr. Mahesh says, “Although the cancer risk from CT scans remains controversial, the findings have sparked debate over the need to more closely look at the risk/benefits of CT scans.” He went on to say that there has been a paradigm shift toward increased attention to patient safety with regard to radiation doses, and efforts are underway to develop more standardized and optimized protocols, as well as patient dose recording databases.

As for the radiation risks associated with airport screening techniques, Dr. Mahesh said that “after the recent bombing attempt on an airline bound to the United States, the wire services picked up the announcement of full-body scanners that are to be installed at various airports across the country and worldwide, and many news stories headlined the possible radiation risks from airport scanners,” said Dr. Mahesh. He went on to explain, “most airport systems

use what are called ‘backscatter technologies,’ which use low-dose x-rays to scan travelers. The x-rays do not penetrate the travelers, but rather, bounce off the skin surface. The bounced off x-rays are captured by detectors to create images.” Since Dr. Mahesh is an expert in deter-

same subject. Links to both these interviews are as follow: [http://www.pbs.org/newshour/bb/transportation/jan-june10/scanners\\_01-20.html](http://www.pbs.org/newshour/bb/transportation/jan-june10/scanners_01-20.html) and <http://community.myvoa.com/BODY-Scanners-Touted-as-Effective-Tool-Against-Terror-Attacks-Stir>



Dr. Mahadevappa Mahesh, his wife, Vasantha, and their two children, Ajay (left), and Smitha (center).

mining radiation dose and protection, he was asked by the PBS on NewsHour to explain the concept and talk about the radiation exposure potential from airport scanners. Dr. Mahesh says, “The radiation doses are quite low, and in fact, a traveler would have to undergo nearly 1000 to 2000 of these scans before receiving a dose equivalent to a chest x-ray.” The other types of systems use millimeter radio wave technology, which carries no radiation. He also gave an interview to the Voice of America on the

[Fears-of-Radiation/video/888792/45137.html](http://www.pbs.org/newshour/bb/transportation/jan-june10/scanners_01-20.html).

As the Chief Physicist for the Johns Hopkins Hospital, and as an Associate Professor of Radiology, and an Associate Professor of Medicine, Dr. Mahesh is used to explaining complex technologies to all kinds of professionals and lay people alike. “I’ve always been involved with teaching and have been involved with professional societies from all disciplines, as well

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## Chairman's Corner

As I began the preparation for this column, I considered the quick approach of Spring and the return of life to the flora and fauna of our region as this long, cold and snowy winter was quickly coming to its long-anticipated end.



Of course, just as my vision of blossoms and sunny days was taking shape,

Mother Nature had quite a different idea: the Blizzard of '10, or as it has affectionately become known, the "snowpocalypse," had begun. Any thoughts of warmth and blooming trees quickly turned into sore shoulders from shoveling, checking on neighbors, and helping to dig cars out from one of the biggest snow accumulations of the past 100 years. On top of my many years living in the snow-belt of the great lakes, I had been in the midst of the Blizzard of '78 in Cleveland, and then a week and a half later was lucky enough to have traveled into the middle of the Blizzard of '78 in New England. Having moved to the warmth of Baltimore, I thought that I had already seen the worst snows of my life. I was mistaken. For those of you reading this who missed the mid-Atlantic blizzard, congratulations! We in Baltimore are still paying with traffic congestion, parking difficulties, and ten foot piles of snow by the side of many roads.

While the blizzard created many hardships for our patients, faculty, staff, and trainees, it was truly remarkable to see how everyone in the Department pulled together to continue to provide the highest quality patient care that sets Hopkins apart from the rest. Many faculty members, residents, and fellows joined the technologists, nurses, transporters, and other support staff who chose to sleep over in the hospital and continuously work for the two or even three days it

took to get their replacements in through the snow. Two days later, we repeated this effort when the second wave of snow hit. The Department's emergency response team handed out air mattresses and meal tickets: the physicians and staff kept the patients well cared for, and not a complaint was heard throughout the process. We had Department members walk to work through the snow from around the city, including the Inner Harbor, Fells Point, and one dedicated faculty member and one resident even hiked in from Roland Park and Rodgers Forge, respectively, through the tundra-like conditions. Our colleagues "on the ground" through the emergency kept themselves from going stir-crazy with movies, junk food, and conversation, all the while providing compassionate and quality care. In the meantime, many of our colleagues helped out by reading studies remotely from home or administratively supporting the Department over the internet and by phone, keeping everything running smoothly. This dedication also extended beyond our clinical mission – for example, our grants management team processed proposals from home throughout the blizzard. I cannot adequately convey how proud I am of each and every one of our physicians and staff who participated in this remarkable effort. It is a clear testament to the dedication and commitment of our Department, and I, for one, am humbled to be a part of this great group of caregivers.

As for my visions of cherry blossoms and green grass, I think that I will hold off a while before resuming this train of thought. As I look at the weather report for next week, only one question comes to mind: does anyone have a spare snowblower?

—Jonathan S. Lewin, M.D.

## How much—continued from page 1

as with the State of Maryland as a member of the Radiation Control Advisory Board," Dr. Mahesh said.

In fact, to further clarify the issues surrounding radiation dose and the physics of CT scanning, Dr. Mahesh published a book in 2009 called "*MDCT Physics: The Basics—Technology, Image Quality, and Radiation Dose*." His goal was to "create a book that was easy to read for radiologists, cardiologists, and other physicians, and to teach physics with images, not equations." Although the book has been out only since June of 2009, it is already quite successful, having been featured in the "Hopkins Reader," and selling many copies. "Being at Hopkins I had the rare occasion to work with many new versions of CT scanners from all the major manufacturers. This provided me a deeper insight into CT technology and CT dose. This book is an attempt to explain the more complex MDCT technologies in an easy-to-read way," said Dr. Mahesh. He is now embarking on another book project that will concentrate on all modalities used for medical x-ray imaging. Dr. Mahesh is active in various professional societies. He is cur-



*The book on physics published by Dr. Mahadevappa Mahesh.*

rently the editor of the physics column in the *Journal of the American College of Radiology* and editor of the *American Association of Physicists in Medicine* newsletter. He has traveled extensively, including to

countries such as Cuba and Algeria, to give talks on medical imaging physics topics.

Indeed, Dr. Mahesh, who has been at Hopkins since 1993, began working before he was even finished with graduate school at the Medical College of Wisconsin. "I always knew I wanted to be in academia, and Hopkins offered me the job before I even finished my PhD—it was a great motivation to complete my dissertation and rush to join Hopkins," he said. He enjoys the challenges of the hospital with the opportunities to work on the latest technologies and ensure the safe use of such modalities on patients during imaging. Dr. Mahesh added that he has been very fortunate to have had supportive and encouraging colleagues and co-workers at Hopkins all these years.

He enjoys reading books and, in fact, he said that his reading habits have greatly aided him at times in explaining complex physics topics to non-physics audiences. Dr. Mahesh enjoys poetry and has even published a few poems in his native language (Kannada). He also enjoys plays, and he and his team recently staged a play in their ancient native language (Hale-Kannada) in Washington DC, and a few other cities in the U.S. Dr. Mahesh has been a U.S. citizen for seven years, and was originally born in Mysore, India. He is married and he and his wife, Vasantha, have two children, a son (Ajay), who is in 8th grade, and a daughter (Smitha), who is in 5th grade. They live in Baltimore County and enjoy the advantages of Baltimore and the cultural opportunities in Washington, DC.

## Stanley S. Siegelman Leadership Fund Update

We are pleased to share that more than 115 donors have contributed over \$390,000 in honor of Dr. Stanley Siegelman. The Stanley S. Siegelman, MD, Leadership Fund will provide faculty support to those who embody Dr. Siegelman's commitment to education and training, clinical service, and scholarly achievement. It is our hope to raise \$2.5 million so that the Leadership Fund can become an endowed professorship in Dr. Siegelman's name. If you would like to join alumni, colleagues, and friends in recognizing Dr. Siegelman's dedication to advancing the field of radiology, please contact the Development Office at (410) 516-6816 or ewhite28@jhmi.edu to make a tax-deductible contribution to the Siegelman Fund. Thank you.

### ACCOLADES

Congratulations to those in our department who were awarded the government ARRA challenge grants for their innovative ideas and projects:

- Dheerag Gandhi: Familial Intracranial Aneurysm Study II
- Michael Jacobs: Multiparametric MRI Characterization of Breast Tissue
- Igal Madar: PET Imaging of Myocardial Aging
- Susumu Mori: DtiStudio: Resource Software for Diffusion Tensor Imaging
- Kenichi Oishi: Longitudinal and Cross-sectional Quantitative White Matter Analysis of Alzheimer Disease
- Matthias Stuber: Non-Invasive Measures of Regional Coronary Endothelial Function by 3T MRI
- Katsuyuki Taguchi: Time Resolved Cardiac Computed Tomography with Patient Dose Reduction
- Benjamin Tsui: High Resolution SPECT-MRI for Molecular Imaging
- Benjamin Tsui: Task-Based Optimization for Gated Myocardial ECT
- Richard Wahl: Clinical Trial to Evaluate FLT
- Jiangyang Zhang: Characterization of Brain Atrophy in Huntington's Disease Mouse Model

# Dr. John Dorst's Legacy Continues

In 1966, two years after the dedication of the then-new Children's Medical and Surgical Center, Dr. Russell Morgan recruited Dr. John Dorst to be the first Director of Pediatric Radiology at Johns Hopkins. A professor of both radiology and pediatrics, Dr. Dorst served as Director for 24 years, and also directed Student Education for Radiology from 1989 until his retirement in 1995.

Dr. Dorst received his medical degree from Cornell University Medical College. Following an internship at the State University of Iowa Hospitals and a year of residency in Pathology at Northwestern Hospital in Minneapolis, Minnesota, he received his radiologic training at the Veteran's Administration Hospital, Minneapolis, and the University of Iowa. He was a fellow under Dr. Frederic Silverman at the Children's Hospital of Cincinnati where he rose to the rank of Associate Professor before coming to Johns Hopkins.

Over a quarter of a century, Dr. Dorst's close collaboration with renowned geneticist Dr. Victor McKusick contributed to his becoming a world expert on the diagnosis of skeletal dysplasias. That professional association produced seminal radiographic studies, which helped define the nature of inherited connective tissue disorders, especially the

mucopolysaccharidoses and mucopolipidoses. In that role, he contributed to *Birth Defects: Original Articles Series*, and was a revered consultant for members of the Little People of America, a support group for patients with dwarfing syndromes. In addition to his work on

Dorst, John Dorst, and Miranda Saunders.

Part of Dr. Dorst's legacy are those he trained who have assumed faculty and leadership positions nationwide. In 1979, while a medical student, Dr. Jane Benson attended the radiology elective and was inspired by



*Marcia, Heather, John, and Stan Dorst unveil the portrait and signage of John P. Dorst, M.D. at the dedication ceremony.*

genetic disorders, Dr. Dorst wrote or co-authored more than 50 scientific papers on a variety of pediatric conditions.

Dr. Dorst, who died in 2001 from complications from a brain tumor, served as an example of what complete commitment looks like, of where a passion can lead you, and of what true generosity of spirit can bring. His insistence on knowing the total patient in order to give radiology the dimension it needed and the role in that patient's care that it deserved, has truly inspired many who have followed in his path. He also was a loving husband to his wife, Marcia, and devoted father to their four children—Stanley Dorst, MD, Heather

Dr. Dorst. Dr. Benson joined the pediatric radiology faculty in 1990. She commented "Dr. Dorst was an engaging teacher and first-class mentor. I'm grateful to him for always making me feel like a valued colleague and truly influencing my career choice."

Marcia Dorst continues to be an important member of the Hopkins Radiology family and philanthropically supports the Division and the Department. Thanks to her generosity, Jane Benson and Jim Langan, RT, have preserved Dr. Dorst's teaching files digitally so they are available to radiologists worldwide through the Web. Mrs. Dorst also has made it possible for the Division to have a library/conference

room in the new Charlotte R. Bloomberg Children's Hospital when it opens in 2012 on the Johns Hopkins Medicine campus.

Dr. Thierry A. Huisman became the new Medical Director of the Division of Pediatric Radiology in October 2007. Within a short time, Dr. Huisman realized that all current progress in pediatric radiology at Johns Hopkins was possible because of the "Dorst years." To honor Dr. Dorst's achievements, Dr. Huisman and the Division faculty and staff formally dedicated the pediatric radiology reading room in the Nelson Building in memory of John P. Dorst, M.D. At this special celebration on October 7, 2009, with members of the Dorst family, speeches and toasts were made by Radiology Chair Dr. Jonathan Lewin, Pediatrics Chair Dr. George Dover, Dr. Huisman, and Dr. Benson. Under the leadership of Dr. Dorst, the reading room became the place where clinicians and radiologists met and discussed patients. Being a clinical radiologist himself, Dr. Huisman believes that dedicating this important space will keep the Dorst legacy of clinical pediatric radiology alive.

## Helping the Next Generation

Dr. Milosh Perovitch's strong feelings for the Russell H. Morgan Department of Radiology and Radiological Science have created a lasting legacy. A specialist in neuro-radiology, he trained at Johns Hopkins, and, after retiring as head of the University of Connecticut's Department of Radiology, continued to conduct research at Hopkins until his death in 2006.



*Dr. Milosh and Smiljka Perovitch*

He and his wife, Smiljka, made bequest provisions to endow a fund in the Division of Neuroradiology to support training and research. The Dr. Milosh and Smiljka C. Perovitch Endowment Fund is used in two ways: rotating each year between supporting a visiting professor and sponsoring a research award.

Dr. Perovitch was born in Yugoslavia, and graduated from the College of King Aleksander, and completed his medical degree at the University of Belgrade, with honors. He defended his Doctor of Medical Sciences thesis after studying at the University of Stockholm, Sweden; the University of London at the Clinic of Neurology; and at the Johns Hopkins Department of Radiology. Dr. Perovitch specialized in neuroradiology, and focused his research on the application of radiological methods to the diseases of the nervous and vascular systems. He spent a few years in

Geneva, Switzerland, and then returned to Johns Hopkins. In 1971, Dr. Perovitch joined the faculty of the University of Connecticut, where he spent the majority of his career leading the Department of Radiology.

After his retirement, he returned to Johns Hopkins to continue conducting research. Dr. Perovitch was fluent in several languages and wrote more than 200 papers and books. He was 84 years old at the time of his death in 2006.

Dr. Perovitch's wife, Smiljka Perovitch, was also a native of Yugoslavia. She was a university graduate in languages and comparative literatures, finishing her studies *cum laude*. Her education included a college in Switzerland, and post graduate studies for six consecutive summers in England. She worked as a professor in languages, and translated books on art, non-fiction essays, and various other literary articles.

Mrs. Perovitch worked in the Serbian Academy as a reader in foreign languages for professional texts before moving to the United States. While living in the United States, she served as a volunteer for the Red Cross for 26 years, initiating and organizing Conversational English courses, and serving as a member of the American Red Cross International Committee. She died in 2003.

The first Dr. Milosh and Smiljka C. Perovitch Visiting Professor was Dr. Majda M. Thurnher, an Associate Professor from the Department of Radiology at the University of Vienna in

Austria. Dr. Thurnher received her medical degree from the Medical University Vladimir Bakaric in Rijeka, Croatia. She spent more than



*Dr. Majda Thurnher*

a week in August 2009 visiting the Division of Neuroradiology at Johns Hopkins. During her visit, she taught the residents and fellows, shared her research experience in how to image the white matter tracts of spinal cord in healthy and cord-damaged patients using diffusion tensor imaging, and built research collaborations for future studies of the spinal cord in multiple sclerosis and transverse myelitis.

In November 2009, Yimao Zhang, M.S., was honored with the first Dr. Milosh and Smiljka C. Perovitch Research Award in Neuroradiology. This prize will fund her research project entitled "New Combination Therapy for Leukemia through ABCG2 Inhibition." The intention of the project is to leverage the discovery of a way to identify nontoxic multidrug resistance pump inhibitors into a new therapy for leukemia and other stem cell-associated cancers. Yimao Zhang is an instructor in the Department of Radiology and works in Dr. Martin Pomper's laboratory. An accomplished molecular biologist with almost 20 years of experience, she has five first-authored peer-reviewed research articles, two of which have appeared in

*Cancer Research*. Ms. Zhang received her B.S. degree in Biochemistry from Fudan University in China; an M.S. degree in Molecular and Cell Biology from Shanghai Institute; and an M.S. degree in Molecular, Cellular and Developmental Biology from the University of Pittsburgh.

According to Neuroradiology Division Chief, Dr. David Yousem, "During Dr. Perovitch's life, I visited with him a few times and collaborated with him on research projects that he pre-



*Yimao Zhang, M.S.*

sented to European imaging societies on behalf of Johns Hopkins. He was a great ambassador for Johns Hopkins in Europe and was very appreciative of the role our department played in his life. I'm truly grateful for his and his wife's meaningful support. Through their philanthropic commitment, the Perovitchs are helping us educate and train the next generation of professionals in our specialty and fostering neuro-radiology research. I'm proud that many will benefit from the Perovitch's generosity and that their legacy will continue at Johns Hopkins."

# RAD-AID

Although radiology is a service-oriented specialty, it's rarely thought of as being of service to the community or world at large. But, one organization that wanted to change that perception began right here in our department.

RAD-AID International is a nonprofit organization founded to assist developing countries to implement and optimize radiology and health imaging services while improving the role of radiology in global public health initiatives.

RAD-AID was the brainchild of Dr. Daniel Mollura, a radiology resident at Hopkins from 2005 to 2008. "He wanted to bring radiology to developing countries and help poor countries establish clinics and programs to better serve the health needs of their communities," said Dr. Atif Zaheer, an Assistant Professor in the Department of Radiology, who assumed the management of RAD-AID after Dr. Mollura moved to the NIH. Dr. Mollura is the CEO of RAD-AID, and his motivation for establishing the organization was his desire to be a "physician with a personal commitment to public service." This desire to help people is also what drives Dr. Zaheer. "I come from a strong tradition of charitable giving, with a great sense of civic duty," he explained. Originally from Pakistan, he pointed out that Pakistan is "the most charity-giving

country in the world, based on *per capita* income level. We have a very strong sense of taking care of those in need." He also noted that his mother is a social worker and his father was a doctor, which further



The first RAD-AID conference.

strengthened his personal desire to make a difference in people's lives.

When he arrived at Hopkins in 2008, after a fellowship at Brigham and Women's Hospital in Boston, Massachusetts, RAD-AID was just the type of program he was looking for to fulfill his need to give back to the community and the world. "While I was at Brigham, I had a friend who spent a considerable amount of time in Rwanda as part of her infectious disease fellowship. It was very hard for them to obtain the right kind of scans or interpret them, and she would e-mail me CT scans to read. I realized then that to really make a significant difference, you need a strong organizational foundation, and a 'big name' behind you, so people will be encouraged to give—of their time, their expertise, and their money." RAD-AID fit the bill for him. He began working

closely with Dr. Mollura, and together, they applied for and won a William M.G. Gatewood, M.D. Fellowship, the money from which they used to hold the first RAD-AID conference. Dr. Zaheer has also contributed to a white paper about the results of the conference, which will be published in the *Journal of the American College of Radiology* (JACR).

"What was exciting about the conference was that there were people from all walks of life and all areas of expertise. This kind of meeting is so helpful in pushing our projects forward," said Dr. Zaheer. RAD-AID has several major directions and projects that reflect that. The organization is collaborating with Project Hope and Philips to assess the need for radiological equipment and expertise in India and China. "We plan to beta test in these two countries to see what kind of infrastructure is needed. This is what is referred to as 'radiology readiness,' which means examining the context for radiology services and whether radiology can be effectively and efficiently integrated into a community or facility's health care system," he said. Another collaboration is with a private CT group in Ethiopia, which is designed to train technologists in Addis Ababa.

Another project in the works is to explore the use of teleradiology to transmit images from underprivileged areas in India and China. "We also

ask radiologists to donate their time to read these images. Just a few hours of donated time can have a huge effect. And I have found that it's a learning experience for me as well," noted Dr. Zaheer.

In fact, RAD-AID has inspired others too. A group of residents at Duke University started a RAD-AID chapter there, and partnered with the Duke Center



Dr. Atif Zaheer

for Global Health to identify facilities that could benefit from RAD-AID.

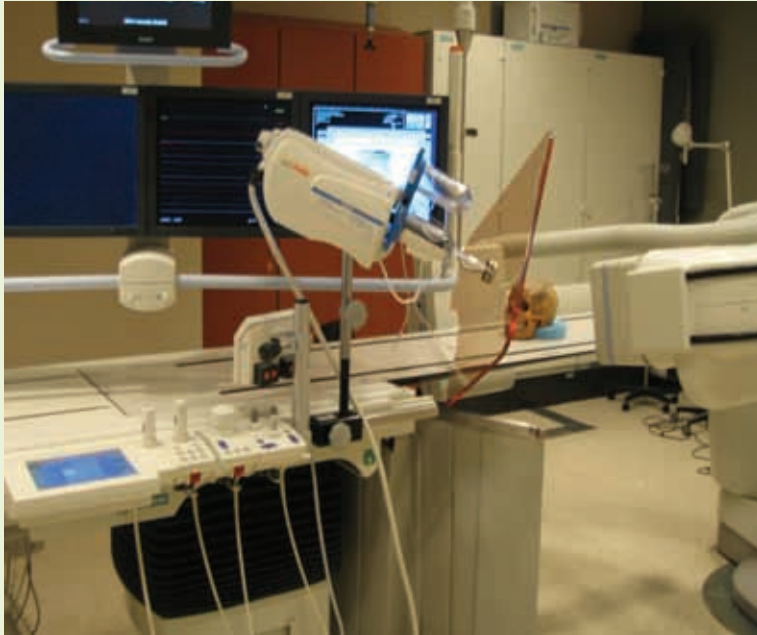
"At first, we weren't sure where we were going with all of this, but now, with these projects underway, we see that we can achieve a great deal, and really make a difference in people's lives," he explained. Dr. Zaheer noted that radiology residents, Dr. Ezana Azene and Dr. Som Javadi of Hopkins, are members of RAD-AID. Dr. Zaheer attributes the success of RAD-AID to Dr. Jonathan Lewin's tremendous support for the organization. Dr. Zaheer's title is Director of Clinical Education, and

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# Skulls and Bones

What does a collection of bones begun in the 1920s have to do with Hopkins radiology today? In a joint project between the Smithsonian Institution, Stanford, the

logical specimens that could be used to teach skeletal biology, anatomy, and pathology. His goal was to ensure that the collection contained all genders, ages, ethnicities, and diseases,



*Hopkins' C-arm technology at work.*

Stanford NASA Biocomputational Computing Center, and the University of the Pacific, Dr. Dara Kraitchman is leading the Hopkins portion of the project, which involves imaging the thousands of skulls and skeletons that are part of the Terry Collection, now housed in the Smithsonian.

Early in the 20<sup>th</sup> century, Dr. Robert Terry, a professor of anatomy at Washington University Medical School in St. Louis, began to collect the human skeletons used by the medical school in anatomy classes. In the beginning, Dr. Terry's collection consisted of primarily low-income people and people whose bodies weren't claimed or whose relatives signed over the body to the state. Dr. Terry's goal was to create a comprehensive atlas of normal and patho-

and he was meticulous about the collection, cataloging, and storage of the specimens. The collection was eventually



*Skulls awaiting imaging.*

turned over to the Smithsonian, and Dr. David R. Hunt, a forensic anthropologist there, now oversees the collection.

At Stanford, Dr. W. Paul Brown, a dentist and Associate Professor in the Division of Anatomy, was fasci-

nated with the Terry collection, and wanted to establish something like it for dental students, and to teach dental forensics. Dr. Brown was awarded a Small Business Technology Transfer (STTR) grant from NIH to launch a pilot project to visualize and segment the human skull. The STTR grants dictate that the project has to have a commercial component. So, Dr. Brown made the database of 5-12 skulls with 3D radiographic models available, for a fee, to industries that developed devices for the head, as well as other industries. He even developed an iPhone application. The database is free for use to teaching hospitals and universities.

"This group approached me because we have the most up-to-date C-arm CT technology," explained Dr. Kraitchman. She went on to say that a Senior Scientist from Siemens, Tina Ehtiati, was instrumental in obtaining for Hopkins a special software upgrade (called "2K") for the acquisition and reconstruction of these

skulls and skeletons.

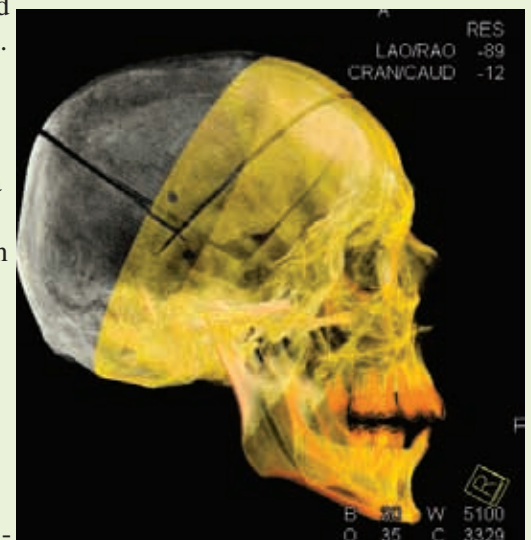
"This enabled us to achieve a spatial resolution of 150 microns, which is higher than you can obtain

with conventional multi-detector CT," said Dr. Kraitchman. "This system, the Axiom Artis dFA, rotates the C-arm through a flat-panel detector and bins each detector into one 512x512 matrix, and we can acquire an

image in 20 to 25 seconds," she said.

Dr. David Hunt, from the Smithsonian, was willing to have the skulls scanned, but did not want to send them out. So, Dr. Hunt accompanies the big trucks full of skulls to Hopkins and participates in the all-day scanning sessions. "We've completed about four sessions and have a few more to go. We expect to build a database of about 80 skulls for the grant in Phase I of the STTR. There's so much data, we can't save it fast enough," said Dr. Kraitchman. She went on to say that the NASA group from Stanford takes the data and creates a visualization package suitable for use in dentistry and other applications. Again, the data is accessible to non-profits free of charge.

Dr. Kraitchman said that "although the scanning is challenging [because of the dental work with metal], we are enjoying the challenge and exploiting the ability of our equipment by obtaining the highest resolution possible."



*A single reconstruction of the C-arm CT of a skull from the Terry collection.*

## Radiology History Remembered...

Did you know?

- Radiology was a division in the Department of Surgery from its beginning around 1900 until 1946, when Russell Morgan became chairman of radiology as a separate department.
- The first two division directors, Frederick Baetjer and John Pierson, were part-time and had office practices for radiology.
- The residency program was started by Dr. Pierson in the 1930s.
- Women were in the residency starting in the 1940s.
- A World War II "Victory Ship" built in the port of Baltimore was named after Frederick Baetjer, the first radiology division director.

## RAD-AID—continued from page 6

he wants to be even more involved with the educational projects of the organization. For example, he'd like to train non-radiologists in Ethiopia to read and interpret images properly, and would like to get involved with all projects that require training of radiologists and technologists alike.

Dr. Zaheer came to the U.S. because of the superior facilities and training available here in the field of radiology. "There was really no other choice for the best training and equipment, and I had some family here," he said. He and his wife, Cristina, and four-month-old son, Asad, live in Baltimore. "We really like Hopkins—the people are very nice and the hospital is great. I really feel that I can make a difference here," he said. To learn more about RAD-AID and how you might be able to help, visit their website at [www.rad-aid.org](http://www.rad-aid.org).

### Ways to Give...

For those interested in making a tax-deductible contribution in support of any program or research project in the Russell H. Morgan Department of Radiology and Radiological Science, please contact the Development Office at 410-516-6816 or [ewhite28@jhmi.edu](mailto:ewhite28@jhmi.edu) or visit [www.hopkinsradiology.org](http://www.hopkinsradiology.org).

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**Jonathan S. Lewin, M.D.**  
Martin Donner Professor and  
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