Neuroendocrine tumors (NET) comprise a family of enigmatic malignancies whose incidence has seen a dramatic 5-fold increase over the past three decades, from 1.1/100,000 per year in 1973 to 5.3/100,000 per year in 2004, while the incidence of most other cancers has decreased over the same period (SEER, 2004; Modlin, 2008). Despite advances in overall cancer related mortality, most patients with NET are not diagnosed until liver metastases have developed, at which time <30% survive 5 years (Bushnell, 2010). Few therapeutic alternatives are available for these patients because no systemic therapy (chemical, biological, immunological, or combination) provides objective durable benefit, and most drugs are prescribed to ameliorate symptoms, such as diarrhea and flushing, which are frequently debilitating and potentially life threatening (Rinke, 2009; Bushnell, 2010). Targeted radionuclide therapy is a potential alternative systemic therapy for patients with NET. Molecular targeting of a cytotoxic radiation dose to tumor cells has the potential to circumvent drug resistance that NET demonstrates to conventional chemotherapy agents (Kwekkeboom, 2008).

There are several imaging techniques that are used for diagnosing and staging of neuroendocrine tumors. Anatomic imaging with CT and MRI are typically the initial techniques used in the evaluation of most patients with suspected NET, both for the detection of the primary tumor and for detection of possible local or distant metastases. Several molecular imaging agents have been investigated for detection of NET by PET, SPECT and combined imaging with conventional CT. These include conventional fluorine-18 labeled glucose analog [\(^{18}\text{F}\)]FDG, iodine-123 (\(^{123}\text{I}\)) labeled metiodobenzylguanidine (MIBG), \(^{18}\text{F}\) labeled fluorodeoxyhydroxyphenylalanine (\(^{18}\text{F}\)DOPA), as well as indium-111 and gallium-68 labeled peptides. Of these imaging agents, radiolabeled peptides that target upregulation of somatostatin receptors have received considerable attention in recent years for molecular imaging of NET. Of these peptides, a chelator-modified variant emerged, DTPA-Octreotide, that targets somatostatin receptor subtype 2 demonstrated high tumor accumulation in well- and moderately-differentiated NET with rapid renal excretion and acceptable normal organ accumulation. This later became a commercially-available scintigraphic imaging agent (Octreoscan™), labeled with gamma-ray-emitting radionuclide indium-111 (\(^{111}\text{In}\)), which has become the standard of care for molecular imaging of NET in the United States. As the potential benefits of quantitative molecular imaging by PET became clear, efforts escalated to synthesize variants of octreotide that could be radiolabeled with PET imaging. While development of a tractable synthetic strategy with sufficiently high yields for addition of \(^{18}\text{F}\) has remained largely elusive, several chelator-modified octreotide variants designed for radiolabelling with positron emitter gallium-68 emerged that could be radiolabeled in sufficient purity and
I am happy to announce the recruitment of two new faculty members: John Newell, MD and David Dick, PhD. Dr. Newell joins our Department as the Vice Chair of Clinical Research, the Associate Director of the Iowa Institute for Biomedical Imaging (IIBI) and a member of the Division of Cardiothoracic Imaging. Dr. Newell was most recently the Director of Imaging at the National Jewish Hospital in Denver. Dr. Dick comes to us from the Division of Molecular Imaging at Stanford University. He will have a lead role in the establishment of an FDA-approved radiopharmaceutical production laboratory in our PET Center.

In addition to the above noted administrative roles, Dr. Newell is taking the lead in developing a new departmental core: the Department of Radiology “Quantitative Imaging Analysis Laboratory.” This laboratory, established to improve the clinical relevance of radiological imaging by incorporating quantitative analyses and measurements into the radiological report, will be equipped with state of the art image analysis software and workstations. Medical images are often used to provide evidence of treatment response for new drugs or therapies, but it can be challenging for imaging researchers to access images for patients enrolled in clinical trials or for further research development. The laboratory will support both clinical care and imaging research, initially focusing on three critical areas: Cancer Imaging, Neurosciences Imaging and Cardiothoracic Imaging. It is anticipated that the laboratory will also support translational and developmental imaging analysis research and resident/graduate student education.

Another important research support initiative is the acquisition and deployment of XNAT, an open source imaging informatics platform (www.xnat.org), developed by the Neuroinformatics Research Group at Washington University. In collaboration with The University of Iowa’s Institute for Clinical and Translational Science (ICTS), the XNAT system was deployed during the summer of 2010 to warehouse research imaging studies. While many institutions may have well-developed infrastructures to support clinical workflow, imaging researchers often lack similar research-specific workflow tools. For example, most researchers have no idea how to anonymize the DICOM elements in medical images, send those images to a third party, or securely store them on a flash drive or laptop. Yet performing those tasks in a way that meets HIPAA and Institutional Review Board (IRB) requirements is essential.

XNAT offers several key functionalities that facilitate transfer of data to investigators: 1) automated archiving of data into projects based on DICOM fields and 2) a web-based interface for transferring data from the archive to a local system. Users who use the 3D Slicer software can directly query and download imaging data directly into this image analysis software. Presently, the system houses over 5900 imaging sessions (~4TB of data) for 160 projects. The Magnetic Resonance Research Facility, led by Vince Magnotta, PhD, was one of the first adopters of this technology. There are currently 98 active users of the system.

Imaging research workflow is an essential investment; an efficient research workflow infrastructure can be a selling point to imaging technology manufacturers or contract research organizations that do significant amounts of research and pharmacology and therapeutic treatments. Thus, leveraging the same kinds of electronic-based instrumentation that we view successfully in the reading room for clinical service will enhance our research enterprise.

Finally, I am pleased to announce that the Department of Radiology has successfully achieved NCI designation as a Clinical Research Center of Quantitative Imaging Excellence (CQIE). Achieving this status required additional clinical research training for our imaging technologists, achieving requirements for phantom and clinical imaging tests and demonstration of excellence in QC for CT, MRI and PET imaging systems. As an NCI-qualified CQIE site, the Department of Radiology and the UI Holden Comprehensive Cancer Center can more effectively participate in and offer clinical research trials utilizing advance imaging procedures with primary or secondary imaging endpoints to our patients.
Molecular Imaging, continued from page 1

specific activity for clinical PET studies. Of these, an N-terminal chelator-modified disulfide constrained cyclic variant of octreotide (known as DOTATOC), which includes a Tyr substitution in the 3rd amino acid position, has become the gold standard for NET imaging in Europe (when labeled with $^{68}$Ga). DOTATOC has the advantage that the precise composition of matter can be used not only for molecular imaging (with $^{68}$Ga), but also can be radiolabeled with beta-emitting radionuclide yttrium-90 ($^{90}$Y) for targeted radionuclide therapy. Thus, investigations are underway to assess the potential of the use of $[^{68}\text{Ga}]$DOTATOC PET/CT for quantitative assessment of response to $[^{90}\text{Y}]$DOTATOC therapy. However, although thousands of studies have been undertaken in European clinics for molecular imaging of NET, adoption in the United States has been impeded by regulatory concerns over the on-site production devices (known as $^{68}$Ga generators) used to produce the radionuclide $^{68}$Ga.

Gallium-68 Generators

With a half-life of 68 minutes and an 88% positron emission intensity, $^{68}$Ga has nearly ideal nuclear characteristics for peptide-based PET imaging. In addition, $^{68}$Ga has the advantage of the potential for nearly on-demand production in the absence of cyclotron facilities with the introduction of generator systems. In much the same way that a $^{99m}\text{Tc}$ generator enables periodic preparation of $^{99m}\text{Tc}$ compounds over a short continuous period, $^{68}$Ga generators consist of a shielded ion-exchange-type system in which $^{68}$Ga can be periodically (about twice daily if required) eluted and combined with a molecular imaging agent for clinical studies. While the relatively short half-life of $^{99m}\text{Tc}$ parent radionuclide $^{99m}\text{Tc}$ requires frequent replacement of the $^{99m}\text{Tc}$ generating system, the life of $^{68}$Ga parent germanium-68 ($^{68}\text{Ge}$, 271 days) enables continuous use of the generator for much longer periods of time (perhaps as long as a year). Although concerns about the stability and long-term performance of generator devices have been a concern, our experience with the most recent models of $^{68}$Ga generators demonstrates that current systems are indeed capable of excellent long-term performance, and we continue to work with collaborators at the Zentralklinik Bad Berka (Germany) to develop improved methods that result in more rapid preparation, higher specificity, with reduced quality control analytical needs. In addition, new automated systems are now available that can be adapted readily for use in the preparation of therapeutic radiopharmaceuticals. One such system (ModularLab PharmTracer, Eckert-Zielger, Berlin, Germany) was used recently to conduct the first biodistribution studies of $[^{68}\text{Ga}]$DOTATOC human subjects at The University of Iowa. The system was evaluated over a 6-month period prior to the studies, and the system produced high quality radiopharmaceutical consistently throughout the study period.

Gallium-68 DOTA-tyr3-Octreotide (Ga-68 DOTATOC) PET Imaging

Somatostatin receptor scintigraphy with Indium-111 DTPA Octreotide (Octreoscan™) is used for localization, staging and detection of recurrence in patients with NET. Somatostatin receptor scintigraphy is also used to determine eligibility for targeted radiotherapy with radiolabeled somatostatin analogues. Despite its reasonably good accuracy, In-111 DTPA Octreotide has several shortcomings. Imaging with In-111 DTPA Octreotide is completed over 24 hours requiring 3 patient visits, one for the injection of the radiopharmaceutical and two for imaging. The relatively long half-life of In-111 (approximately 67 hours) also results in a higher radiation dose and furthermore the image resolution of In-111 DTPA Octreotide SPECT imaging is lower compared to PET. Ga-68 DOTATOC PET imaging provides significant advantages, including the convenience of completing the study in approximately 1½ hours, shorter half-life with lower radiation dose and the improved resolution of PET. In two head-to-head comparison studies from Europe, Ga-68 DOTATOC PET was shown to be superior to In-111 DTPA Octreotide SPECT in detection of NET, particularly in evaluating skeletal and pulmonary involvement (1, 2), Ga-68 DOTATOC PET also impacted the management of patients with NET compared to CT and/or MRI and In-111 DTPA Octreotide SPECT in the majority of
Sectional Update
Diagnostic Medical Sonography Program
by Stephanie Ellingson, BA, RDMS, RVT, RDMS, RT(R),
Director, Diagnostic Medical Sonography Program

The Diagnostic Medical Sonography (DMS) Program at the University of Iowa Hospitals and Clinics (UIHC) has a long tradition of excellence with commitment to quality patient care in sonographic diagnostic testing through comprehensive sonography education. The program was initially accredited by the Joint Review Committee on Education in Diagnostic Medical Sonography in 1988 in the general concentration (abdomen and OB/G). In September 1999, vascular and adult cardiac concentrations were added to the curriculum to provide sonography graduates with vascular and cardiac imaging skills for UIHC and the state of Iowa. The program has maintained continuous accreditation and is a component of the Baccalaureate Degree in Radiation Sciences offered by the University of Iowa through the Carver College of Medicine.

The longevity and dedication of the program instructors and staff are strengths of the program. Stephanie Ellingson, Program Director, has been teaching in the program for 21 years. Deborah Troyer has been teaching for 20 years, and Todd Woods has been teaching for 7 years. Prior to taking the position of Imaging Educator, Todd worked in the Radiology Ultrasound Lab for 11 years and in research for 4 years. Mary Huinker has provided administrative support for the program for 16 years. All of these individuals assist the DMS students in reaching their full potential.

The program is fortunate to have clinical education centers with very dedicated sonographers and physicians that play an important role in educating the students. The sonographers are truly interested in the students’ learning, they want the students to succeed and develop a passion for their profession. The physicians support the students in their daily clinical education and share their knowledge of medicine and imaging in multiple ways, from discussions in the reading room to conference lectures.

The program has strong outcomes data in all concentrations. Graduates are eligible for certification through the American Registry of Diagnostic Medical Sonographers (ARDMS) in the areas of abdominal, OB/G, vascular technology, neurosonography and adult cardiac sonography. The program has a 100% completion rate of ARDMS certification within one year of graduation. The program also has strong post-graduate survey results from both graduates and employers; with graduates rating the program at 86% Excellent and 14% Very good, and 100% of the employers indicating they would hire another graduate. A long-term survey conducted in 2002 of graduates working in the field for 6-12 years demonstrated that 38% were working in “upper level positions” which were defined as manager/supervisor, lead sonographer, program director, or commercial applications. Through March 2010, the program had a 100% employment rate of graduates within one year of graduation.

All those involved feel a sense of commitment and pride in the program. We enjoy seeing the success of the graduates and hearing from them as they continue in their careers. We look forward to continued success and growth in the program.

Molecular Imaging, continued from previous page

patients reported in two studies from Europe (3, 4).

Ga-68 DOTATOC is not approved for clinical use in the United States. Through the collaboration of the PET Center with the Neuroendocrine Tumor Program at the University, we were one of the first institutions in the United States to install the generator and the modular laboratory to compound Ga-68 DOTATOC for use in human research subjects. An initial study was conducted to evaluate the biodistribution and the reproducibility of uptake parameters of Ga-68 DOTATOC under an RDRC (Radiation Drug Research Committee) approval and initial results of this study were presented at the North American Neuroendocrine Tumor Society (NANETS 2011, Minneapolis, MN). We have also recently received a physician sponsored Investigational New Drug (IND) approval from the FDA for Ga-68 DOTATOC (IND sponsor: Sue O’Dorisio, MD, PhD). This will position us to be currently among the only two institutions in the US (University of Vanderbilt has an IND for a different analog, Ga-68 DOTATATE) that hold an IND for Ga-68 labeled octreotide imaging agents and will allow us to use this imaging technology in clinical trials. Our ultimate goal is to compound (continued on next page)
therapeutic analogues of these radiopeptides for treatment of patients with metastatic or unresectable NET, who have limited therapeutic options. The University of Iowa has been a key site for the early clinical trials of therapeutic radiopeptides in the US (5, 6) and is well positioned to bring this treatment modality to our patients, who currently have to travel to Europe to receive these therapies (7).

Acknowledgments: The radiolabeled peptide PET imaging and peptide receptor radionuclide therapy initiative at The University of Iowa is organized by the Neuroendocrine Tumor Program, directed by Dr. Thomas O’Dorisio. Dr. Thomas O’Dorisio’s and Dr. Sue O’Dorisio’s enthusiastic support have made it possible to bring this technology to the University. Drs. David Bushnell, John Sunderland, Laurie Ponto, Mark Madsen and Michael Graham from the Nuclear Medicine/PET Center have been working diligently to make this technology available to our patients in Iowa.

References

A Letter from the UI Foundation
Partners in Supporting the Department of Radiology

It has almost been a year since my appointment as the Development Officer for the Department of Radiology. I have had the pleasure of meeting many engaging faculty, staff, alumni and friends of the department and I have discovered a common thread they all share, a thread that is simply referred to as “the Iowa way.” Whether it was a kind welcome, a dedicated faculty member or personalized patient care, the Iowa way makes you feel like you are always in the right place and among friends. There are many more stories to be told and memories to be revisited. I welcome the opportunity to have you share with me your personal experience with “the Iowa Way.”

As you consider your philanthropic priorities, consider supporting the UI Department of Radiology. Private support is as important as ever right now. What areas would be most meaningful for you to support? Is it the brilliant, young students? Cutting edge research? Dedicated faculty?

Below are some of the most common ways you can support the UI Department of Radiology, often while realizing tax benefits. No matter how – or how much – you give, your generosity will make a difference in the lives and work of UI students, educators, and all whom the University serves.

• Annual Giving – Ongoing, sustaining gifts that enable UI areas to embrace opportunities and meet challenges
• Planned Giving – Gifts carefully planned to help you meet your philanthropic and financial goals
• Corporate and Foundation Relations - Relationships with corporations and foundations that result in philanthropic benefit for The University of Iowa
• Matching Gifts – A way to multiply your generosity through your employer’s matching gift program
• Honorary and Memorial Gifts – Honoring someone special with a gift supporting the UI
• Stock Gifts – Supporting the UI with gifts of appreciated stocks and mutual funds
• Cash gifts – Outright gifts made via cash, check, credit card, or other means
• Real and personal property – Real estate and marketable items of personal property
• Online giving – Gifts made through www.givetoiowa.org

To learn more about The University of Iowa Foundation, and how gifts from alumni and friends support students and faculty in the UI Department of Radiology, please visit www.uifoundation.org or contact me at heather-ropp@uiowa.edu, (319) 335-3305 or toll-free (800) 648-6973.
David W. Dick, PhD, Clinical Assistant Professor, joined the Nuclear Medicine division as Chief of Radio-nuclide Production & Clinical PET Radiochemistry. Dr. Dick received his PhD from the University of Wisconsin in Madison, and prior to his appointment at The University of Iowa served as Head of Cyclotron Physics at Stanford University from 2004-2011. His prior research included designing and implementing radionuclidic methods for C-11 and F-18 research radiotracers.

Parren S. McNeely, MD, Associate, joined the Nuclear Medicine Division in the Department of Radiology after completing a PET fellowship at University of Iowa Hospitals & Clinics. Prior to his training at UIHC, Dr. McNeely also did fellowship training in PET CT in Brain and Body imaging at the Medical College of Wisconsin; where he likewise completed residencies in both Family Medicine and Nuclear Medicine.

Changhyun Lee, MD, PhD, comes to the Department of Radiology from Seoul National University Hospital where he serves as both Assistant Professor of Thoracic Radiology and Chief Director of Gangnam Healthcare Center. Dr. Lee received his MD and completed a radiology residency at Kyungpook National University in Daegu, South Korea. His fellowship training in thoracic radiology was received at Seoul National University Hospital. Dr. Lee joins the Cardiothoracic Division as Visiting Associate and is also working with Eric Hoffman, PhD, in the Physiologic Imaging Lab.

Our New Residents

2011 New Faculty

Diagnostic Radiology
Left to right: Umar Chaudhry, MBBS, Army Medical College, Rawalpindi, Pakistan; Aaron Jones, MD, University of North Dakota School of Medicine and Health Sciences; Leandro Leite, MD, Universidade do Rio de Janeiro; Marius Pakalniskis, MD, Dartmouth Medical School; Lillian Lai, MD, University of California, San Diego, School of Medicine; Eric Carolan, MD, University of Iowa Roy J. and Lucille A. Carver College of Medicine; Sarah Averill, MD, State University of New York Upstate Medical University; Duy Bui, MD, Wayne State University School of Medicine

Nuclear Medicine
Saima Muzahir, MBBS, Nishtar Medical College, Multan, Pakistan
Jessica C. Sieren, PhD
Assistant Professor with the Physiologic Imaging Division, received her PhD in Biomedical Engineering from The University of Iowa. Prior to her appointment in Radiology, Dr. Sieren worked as Assistant Research Engineer for both the Departments of Internal Medicine and Biomedical Engineering at The University of Iowa. Her research interests include medical imaging of lung cancer; 3D micro-imaging and pathology; and the correlation between pathology and non-invasive imaging.

John D. Newell, Jr., MD, FACR
Professor in the Cardiac and Thoracic Radiology and Physiologic Imaging Divisions, assumed the position of Vice Chairman of Clinical Research in the Department of Radiology. In addition, Dr. Newell serves as Director of the Radiology Image Phenotyping Laboratory, and is Associate Director of both the Iowa Comprehensive Lung Imaging Center and the Iowa Institute of Biomedical Imaging. Dr. Newell’s prior appointments include serving as Professor of Radiology and Director of Advanced Imaging Technologies, Department of Academic Affairs, National Jewish Health, Denver, Colorado; and Medical Director of the Lung Imaging Center at the National Jewish Medical Center.

Kevin M. Schartz, PhD, MCS
joined the Perceptual Research Division as Research Assistant Professor. Dr. Schartz received his PhD in Experimental Psychology from The University of Iowa. He also received his Master of Computer Science degree, with an emphasis on software engineering. Prior to his appointment in Radiology, Dr. Schartz worked in Application Development & Support for both the Department of Radiology and the Law, Health Policy & Disability Center at the UI. His research interests include developing software tools to conduct observer performance and technology evaluation studies in diagnostic radiology.

In addition to our new faculty, we also welcomed the following 2011-2012 fellows:

Joshua Larson, MD
Brent Jacobson, MD
Lokesh Khanna, MBBS
Sami Sibai, MBBS
Ryan Reynolds, MD

“Best Doctors in America” has recognized the following members of the Radiology Department in its 2011-12 national database:

Monzer Abu-Yousef, MD
Thomas Barloon, MD
Lee Bennett, MD, MA
David Bushnell, MD
George El-Khoury, MD
Michael Graham, MD, PhD
Laurie Fajardo, MD, MBA
Minako Hayakawa, MD
Daniel Kahn, MD
David Kuehn, MD
Yusuf Menda, MD
Yutaka Sato, MD, PhD
Alan Stolpen, MD, PhD

Body Imaging
Chris Colling, MD
Brent Jacobson, MD
Lokesh Khanna, MBBS
Achint Singh, MBBS

Pediatric
Ryan Reynolds, MD
Honors & Awards. . .

Monzer M. Abu-Yousef, MD

- Honorable Mention from the American Roentgen Ray Society for the exhibit, Head to Toe: The Fetal Anatomic Survey with Correlative Pathology. May 1-6, 2011 Chicago, Illinois

Michael P. D’Alessandro, MD

- Delivered the 29th Annual Harvey White Memorial Lecture at Pediatric Grand Rounds at Children’s Memorial Hospital / Northwestern University School of Medicine on November 4th, 2011 entitled, Connecting Pediatric Learning to Clinical Practice: A Radiologist’s Vision for the Future of Pediatric Education

Georges Y. El-Khoury, MD

- Examiner at the ABR in November 2011
- Appointed Chairman of the Musculoskeletal Radiology Core Committee of the American Board of Radiology, 2012 – 2015
- Chairman, Committee for Annual Review of Proficiency of Faculty Members, Department of Radiology, December, 2011

Archana T. Laroia, MD

- Nominated and accepted for a 3-year appointment to the Medical Admissions Committee at the Carver College of Medicine

Toshio Moritani, MD, PhD

- Appointed to the American Society of Neuroradiology, Education Committee, 2011-2015
- Appointed Adjunct Associate Professor to the Department of Radiology, University of Rochester Medical Center, NY

Wendy R.K. Smoker, MS, MD

- Lecturer in Neuroradiology. American Institute for Radiologic Pathology, Silver Springs, MD

Awards Received at National Meetings

- Oh H, Jethwa S. Reede DL, Smoker WRK. Do you have the nerve? Identifying patterns of denervation atrophy in muscles of the face and neck:
  1) Radiological Society of North America 94th Annual Meeting, Chicago, IL, December 2010. CUM LAUDE AWARD
  3) American Roentgen Ray Society Annual Meeting, Chicago, IL, May 2011. CERTIFICARE OF MERIT AWARD
### DEPARTMENTAL TEACHING AWARDS 2010-2011

<table>
<thead>
<tr>
<th>Award</th>
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<tbody>
<tr>
<td>Gillies Award for Outstanding Senior Medical Student</td>
<td>Mark Van Tassell</td>
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<tr>
<td>Resident Teacher of the Year</td>
<td>Catherine Metz, MD</td>
</tr>
<tr>
<td>Resident Educator of the Year</td>
<td>Christine Walsh, MD</td>
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<tr>
<td>Ebbert Walsh Krabbenhoft Award for Excellence in Teaching</td>
<td>David Kuehn, MD; Yusuf Menda, MD</td>
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<tr>
<td>Faculty Teachers of the Year</td>
<td>Thomas Barloon, MD; Joan Maley, MD</td>
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### MEDICAL STUDENT TEACHING AWARDS

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<tr>
<td>Outstanding Senior Faculty Teacher of the Year</td>
<td>Monzer Abu-Yousef, MD</td>
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<tr>
<td>Outstanding Junior Faculty Teacher of the Year</td>
<td>Mark Papenfuss, MD</td>
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### RESIDENT AWARDS

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<th>Award</th>
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<tbody>
<tr>
<td>Resident Research Award</td>
<td>Ryan Reynolds, MD: “Pediatric Radiology Teaching File for Evaluation of Radiology Resident Knowledge Base”</td>
</tr>
<tr>
<td>Resident Teacher of the Year</td>
<td>Justin Boatsman, MD</td>
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<tr>
<td>Resident Award for Outstanding Clinical Service</td>
<td>Justin Boatsman, MD</td>
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### FACULTY AWARDS

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<td>Krabbenhoft Award for Excellence in Teaching</td>
<td>David Kuehn, MD; Yusuf Menda, MD</td>
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<tr>
<td>Faculty Teachers of the Year</td>
<td>Thomas Barloon, MD; Joan Maley, MD</td>
</tr>
<tr>
<td>Outstanding Departmental Service Awards</td>
<td>Thomas Barloon, Minako Hayakawa, MD</td>
</tr>
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### Years of Service Awards...

#### Five Years
Ashley Balliet, Stephanie Barker, Holly Bonfig, Nathan Burnette, Robert Burrett, Ahmed Halaweish, Mary Knopik, Archana Laroia, Sandeep Laroia, Joshua Lunsford, Jennifer Maires, Casey Neuhaus, Charlene Parks, Punam Saha, Michael Schultz, Jay Smith, Angela Spier, Jeffrey Yager

#### Ten Years
Trisha Bartz, Lee Bennett, Julie Denkman, Robin Exline, Ashley Heid, Susan Jeffrey-Wheeler, Nichole Jenkins, Janese Joecken, Jessica Johnston, Marla Kleingartner, Clint Mohring, Bao Nguyen, Kristin Niles, Melodie Robson, Jamie Rucker, Jane Ruplinger, Melissa Schaeqler, Kevin Schartz, Wendy Smoker, Bridgette Vasick, Michael Waughop, Kimberly Wiley, Catherine Yanacheak

#### Twenty Years
Stephen Baker, Judith Bontrager, Amy Rohret Bowman, Cynthia George, Kevin Hatfield, Julie Koeppel, Carol Mertens, Tracy Pettinger, Julie Anderson Riggert, Janet Roe, Janis Russell, Kelli Zimmerman

#### Twenty-Five Years

#### Thirty Years
Thomas Barloon, Kimberley Jeffers, Anthony Knight, Lea Fleener Weldon

#### Thirty-Five Years
Monzer Abu-Yousef, Denise Lange, Barbara Mayberry, Susan Small, Cindy Vest

#### Forty Years
David Owen
Publications

BOOK CHAPTERS


• Inaoka T, Ohashi K. Trauma Radiology. Imaging provides answers for variety of winter sports injuries. Diagnostic Imaging Asia-Pacific. 2010 Autumn;4, 5, & 7.


(continued on next page)


Scientific Presentations


Invited Speakers

- Abu-Yousef, MM. Mock Boards in OB ultrasound. Mayo Clinic, Department of Radiology, Rochester MN, May 10, 2011. [Visiting Professor]
- El-Khoury GY. Case Conference #1-#3 to Residents and Fellows. Baylor University School of Medicine, Houston, TX, May 9, 2011. [Visiting Professor]
- El-Khoury GY. Imaging of Arthropathies in Daily Practice. Houston Radiological Society Meeting, Houston, TX, May 9, 2011. [Invited Lecture]

(continued on next page)
Invited / Refresher Course Faculty

- Allareddy V. *CBCT in Dentistry*. ILOWA Dental Study Club, Davenport, IA, October 4, 2010.
- Allareddy V. *Cone Beam CT imaging*. University District Dental Society Meeting, Iowa City, IA, April 7, 2010.
- Allareddy V. *ICN course: Advanced Imaging in Dentistry: Cone Beam Computed Tomography (CBCT)*; Feb 11, 2011.

Invited Speakers, continued from previous page

Exhibits / Posters


New & Renewed Grants

PI: Laurie L. Fajardo, MD, MBA, FCR; Title: Centers of Quantitative Imaging Excellence; Sponsor: American College of Radiology Imaging Network; Amount: $9,000; Duration: 04/25/11 - 07/15/11

PI: Eric A. Hoffman, PhD; Title: Cardiopulmonary Structure and Function in the Multi-Ethnic Study of Atherosclerosis MESA LUNG II; Sponsor: Columbia University.; Amount: $837,990; Duration: 05/01/11 - 04/30/12

PI: Eric A. Hoffman, PhD; Title: Subclinical Interstitial Lung Disease in MESA; Sponsor: Columbia University; Amount: $141,339; Duration: 04/15/11 - 02/29/12

PI: Vincent A. Magnotta, PhD; Title: PTSD and Alcoholism; Sponsor: University of South Dakota; Amount: $30,495; Duration: 09/24/10 - 10/23/12

PI: Vincent A. Magnotta, PhD; Title: T1rho Imaging to Assess Brain pH Dynamics; Sponsor: Dana Foundation; Amount: $100,000; Duration: 07/01/2010 - 06/30/13

PI: Vincent A. Magnotta, PhD; Title: ARRA: University of Iowa - Whole Body 7T MRI Scanner; Sponsor: US Department of Health & Human Services, National Institutes of Health; Amount: $7,969,325; Duration: 07/01/2010 - 06/30/12

(continued on next page)
Grants, continued from previous page

PI: Carol Mertens, PhD; Title: Accelerated Accural Demonstration Project; Sponsor: American College of Radiology Imaging Network; Amount: $119,154; Duration: 01/01/11 - 12/31/11

PI: Punum K. Saha, PhD; Title: Cartilage, Bone and Marrow Interactions in Knee OA; Sponsor: New York University; Amount: $146,631; Duration: 07/15/10 - 04/30/12

PI: William Stanford, MD; Title: A Retrospective Chest X-Ray Image Collection Study for CAD Development; Sponsor: VuCOMP, Inc.; Amount: $20,000; Duration: 02/08/11 - 02/29/12

PI: Alan Stolpen, PhD; Title: A Multicenter Observational Study to Evaluate the Safety of MultiHance and Two other Commonly Used Gadolinium-based Contrast Agents (GBCAs) Retrospective Study; Sponsor: Bracco Diagnostics, Inc.; Amount: $14,986; Duration: 11/12/2010 - 1/31/2011