

CURRICULUM VITAE

Name: Andrew D. Hardie, MD

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Citizenship and/or Visa Information: U.S. Citizen

Education:

1994-1998	University of Notre Dame, South Bend, IN	BS/1998	Pre-professional Studies
1998-2002	University of Cincinnati College of Medicine, Cincinnati, OH	MD/2002	Medicine

Internship:

7/2002-6/2003 Medical University of South Carolina, Charleston, SC, Preliminary Medicine Internship

Residencies or Post Doctoral:

2003-2007	University of Virginia Health System, Charlottesville, VA, Diagnostic Radiology Residency
2007-2008	New York University, New York, NY, Fellowship in Cardiovascular and Body MRI

Specialty/Board Certification:

American Board of Radiology	Date: June 2007
USMLE Step 1	June 2000
USMLE Step 2	February 2002
USMLE Step 3	April 2003

Licensure:

South Carolina Medical License	Date: Expires 6/2015
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Military Service:

None

Faculty Appointments:

July 2008-Present	Assistant Professor of Radiology, MUSC, Charleston, SC.
October 2013-Present	Assistant Professor of Urology, MUSC, Charleston, SC.
January 2015-Present	Associate Professor of Radiology, MUSC, Charleston, SC.
January 2015-Present	Associate Professor of Urology, MUSC, Charleston, SC.

Administrative Appointments:

April 2011-Present	Director of ACR Magnetic Resonance Imaging Accreditation
July 2013-Present	Director of Body MRI Fellowship
October 2013-Present	Director of Resident Scholarly Activity
July 2015-Present	Clinical Director of Body MRI
	Vice-Chair Institutional Review Board (IRB-III)

Hospital Appointments/Privileges:

Andrew Hardie, MD
Curriculum Vitae

July 2008-Present Medical University of South Carolina, Charleston, SC.

Other Experience:

None

Membership in professional/scientific societies (include offices held):

International Societies:

2007 – 2014 International Society for Magnetic Resonance in Medicine (ISMRM)
2014 – Present European Society of Gastrointestinal and Abdominal Radiology (ESGAR)
- Elected Fellow of Society (2016)

National Societies:

2003 – Present American College of Radiology (ACR)
2003 – Present Radiologic Society of North America (RSNA)
2013 – Present Society of Computed Body Tomography and Magnetic Resonance (SCBTMR)
- Elected Fellow of Society (2015)
2013 – Present American Roentgen Ray Society (ARRS)

Local Societies

South Carolina Radiological Society presenter at the 2013, 2014 and 2016 annual meetings

Editorial Positions:

Associate Editor

2015-Present BMC Cancer

Manuscript Reviewer

2008-Present Emergency Radiology
2009-Present European Radiology
2009-Present Magnetic Resonance Imaging
2012-Present Acta Radiologica
2012-Present Korean Journal of Radiology
2013-Present Journal of Computer Assisted Tomography
2013-Present International Urology and Nephrology
2013-Present Clinical Imaging (Outstanding Reviewer 2015)
2013-Present Abdominal Imaging
2013-Present International Journal of Molecular Sciences
2013-Present Annals of Transplantation
2015-Present European Journal of Gastroenterology and Hepatology
2016-Present Journal of Medical Imaging and Radiation Oncology
2012(ad hoc) British Journal of Surgery
2009(ad hoc) American Journal of Neuroradiology

Extramural Grants/award amount (current and past):

1. Principle Investigator, Virtual Unenhanced Images of the Abdomen with 3rd generation dual-source dual-energy CT: Image Quality and Diagnostic Performance in Liver Lesion Detection. (4% effort; \$12,210 total award)

Andrew Hardie, MD
Curriculum Vitae

2. Co-Investigator, A Phase III Study to Demonstrate the Efficacy and Safety of RG1068 (Synthetic Human Secretin)-Enhanced Magnetic Resonance Cholangiopancreatography (MRCP) in the Evaluation of Subjects with a History of Acute or Acute Recurrent Pancreatitis. Christopher Lawrence MD, P.I. (1% effort)
3. Co-Investigator, A Phase 2 Assessment of the Diagnostic Accuracy of ^{99m}Tc-MIP-1404 Imaging in Men with High-Risk Prostate Cancer Scheduled for Radical Prostatectomy (RP) and Extended Pelvic Lymph Node Dissection (EPLND) Compared to Histopathology, Thomas Keane MD, P.I. (2% effort/contract amount \$7,630)
4. Co-Investigator, PHASE II STUDY OF NEOADJUVANT GEMCITABINE AND ABRAXANE CHEMOTHERAPY FOLLOWED BY SURGERY FOR PATIENTS WITH LOCALIZED, RESECTABLE ADENOCARCINOMA OF THE PANCREAS. Melanie Thomas MD, P.I. (1% effort)
5. Co-Investigator, PHASE II STUDY OF NEOADJUVANT FOLFIRINOX CHEMOTHERAPY FOLLOWED BY CAPECITABINE WITH CONCURRENT LIMITED FIELD RADIATION THERAPY IN PATIENTS WITH LOCALIZED PANCREATIC HEAD ADENOCARCINOMA. Melanie Thomas MD, P.I. (1% effort)
6. Co-Investigator, A PHASE III TRIAL OF 6 VERSUS 12 TREATMENTS OF ADJUVANT FOLFOX PLUS CELECOXIB OR PLACEBO FOR PATIENTS WITH RESECTED STAGE III COLON CANCER. Melanie Thomas MD, P.I. (1% effort)

Intramural Grants/amount of award:

1. Co-Investigator, Assessment of Chronic Medullary Hypoxia in Human Diabetic Kidney Disease By BOLD_MRI: A Pilot Study. Juan Carlos Velez MD, P.I. (2%)
2. Co-Investigator, Eovist-stimulated MR and MRCP to predict Sphincter of Oddi Dysfunction (SOD). Joseph Romagnuolo P.I. (1%)

Awards, Honors, Membership in Honorary Societies:

1998	University of Notre Dame: graduate with honors (Magna Cum Laude)
2000	Eugene Ferris Award: highest cumulative average first two years of Medical School
2000	William Wherry Award: highest cumulative average in Medical Microbiology course
2000	Society of Pathology Award: highest cumulative average in Medical Pathology course
2001	Election to Alpha Omega Alpha (junior year)
2006	RSNA Poster Presentation Award: Excellence in Design
2010	RSNA Educational Exhibit Award. Category 1 CME presentation
2015	Fellow of the Society of Computed Body Tomography and MR
2015	ESGAR Subspecialty Recognition – Level II

Academic Committee Activities (past 5 years):

National:

2013-Present Communications Committee Member: Society of Computed Body Tomography and

Andrew Hardie, MD
Curriculum Vitae

Magnetic Resonance (SCBT-MR): Head of Member in Training Subsection

University:

2013-Present Member: Institutional Review Board (IRB III)
-Appointed Vice Chair 2016

2012-Present Member: Hollings Cancer Center Protocol Review Committee (PRC)

College:

None

Department:

2011-Present Director: Committee for MRI Accreditation (American College of Radiology)

2013-Present Radiology Research Committee

Division:

N/A

Major Teaching Interests and Responsibilities (Current):

Undergraduate Medical Education:

Medical Students:

1. "The Abdominal Radiograph" (1 hour, 6-8 annually since 2008)
2. Radiology Interest Group: "Introduction to MRI" (1 hour, 1 session)
3. "Mock Tumor Board" Radiology/Oncology Interest Group (1 hour, 2 sessions)

Graduate Medical Education:

1. Into to Multidisciplinary Clinical Oncology (CGS742) "Diagnostic Radiology in Clinical Oncology" (3 hours, 1 session)

Diagnostic Radiology residents:

MRI Physics Curriculum:

1. "Body MRI 101" (45 minutes, 5 sessions)
2. "Basics of MRI Protocolling" (45 minutes, 5 sessions)
3. "MRI Physics Symposium – Body MRI" (90 minutes, 1 session)

Gastrointestinal Radiology Curriculum:

1. "Fluoroscopy Laboratory" (1 hour, 1 session)
2. "Basics of Abdominal Plain film (1 hour, 6 sessions)
3. "The Cirrhotic Liver" (90 minutes, 3 sessions)
4. "Imaging of the Spleen" (1 hour, 3 sessions)
5. "The CT Evaluation of Gastric Bypass Complications" (45 minutes, 2 sessions)
6. "Imaging of Pancreatitis and MRCP/Gallbladder" (90 minutes, 1 sessions)
7. "Pancreatic Imaging and ERCP" (1 hour, 1 session)
8. "Understanding Contrast Kinetics-How to Diagnose Liver Lesions" (90 minutes, 1 sessions)
9. "Imaging Evaluation of Pancreatitis" (90 minutes, 1 session)
10. "Gastrointestinal Journal Club" (90 minutes, 1 session)
11. "Cirrhosis and Related Conditions" (90 minutes, 1 session)

Genitourinary Radiology Curriculum:

Andrew Hardie, MD
Curriculum Vitae

1. "MRI of the Adrenal Gland" (45 minutes, 2 sessions)
2. "Basics of Prostate MRI" (1 hour, 1 session)
3. "Prostate MRI for the Radiology Resident" (90 minutes, 4 sessions)
4. "Renal MRI" (45 minutes, 3 sessions)
5. "The Peritoneum" (45 minutes, 1 session)
6. "Genitourinary Journal Club (90 minutes, 1 session)

Resident In-service Test and Board Preparation Curriculum:

1. "Brant and Helms Review Course: Liver and Biliary" (90 minutes, 4 sessions)
2. "Brant and Helms Review Course: Pancreas and Spleen" (90 minutes, 4 sessions)
3. "Introduction to Radiology Boards –descriptive modifiers/forming an impression" (90 minutes, 2 sessions)
4. "Radiology Resident Oral Board Review" (1 hour, 13 sessions)

Gastrointestinal Medicine Fellows:

1. "MRCP and ERCP" (1 hour, 2 sessions)

Radiation Oncology Residents:

1. "The Role of Prostate MRI in Radiation Oncology" (1 hour, 1 session)

Graduate Studies Education:

1. Judge: MUSC Research Day (October 8, 2013)

Continuing Medical Education:

1. South Carolina Radiological Society: Prostate MRI (March 2013), Incidental liver lesions (March 2014)

Mentoring Activities:

Radiology Resident Mentor: Robert Hazelrigg, MD
Radiology Resident Mentor: Robert Egbert, MD

Faculty Sponsor for Visiting Radiology Rotation:
Eva Marie Suarez, M.D. (Radiation Oncology)
Robert Reynolds, M.D. (Radiation Oncology)
Ebony J. Hilton M.D. (Anesthesiology)

Major Clinical Interests and Responsibilities:

1. Hollings Cancer Center Tumor Boards: Responsible for imaging consultation for three (3) separate tumor boards (Genitourinary, Hepatobiliary (Liver), and Gastrointestinal). As the primary radiology consultant at Genitourinary tumor board, I attend 45-50 sessions per year. I have shared responsibility for Liver (15-25 sessions per year) and Gastrointestinal (20-30 sessions per year). I have also infrequently been asked to attend Hematopoietic/Lymphoma tumor board.
2. Body MRI: Responsible for design and adaptation of MRI methods (protocols) to address numerous clinical indications, several of which never previously performed at MUSC including MR enterography, MR urography, and Prostate MRI.

3. Ultrasound procedures: Helped create a service line for specialty interventional procedures (fluid drainage, biopsies) which could safely be performed with ultrasound with primary goals of reduced cost and improved patient access.
4. Radiation reduction for CT scans: Responsible for working with the medical physics department in the implementation of several new CT techniques which allow for reduced radiation dose while maintaining excellent image quality. Continue to actively monitor radiation dose limitation strategies.
5. Safe use of intravenous contrast agents: As part of contrast committee, instituted policies for appropriate guidelines and methods for administration of gadolinium based intravenous MR contrast agents.

Major Research Activities and Responsibilities:

1. Hepatocellular cancer and liver transplant: Established a database for research by standardizing MRI methods and helping to establish MRI as a primary clinical tool for pre-transplant assessment. 4 publications in major peer-reviewed journals and research presented at national and international meetings.
2. MRI methods which do not need intravenous contrast: Published methods which have shown nearly comparable diagnostic performance to contrast enhanced MRI. Also, developed and published a novel MRI method for hepatocellular cancer detection when intravenous contrast cannot be administered (T2* weighted MRI).
3. Prostate Cancer: Established a database for research by introducing MRI methods new to MUSC for evaluation of prostate cancer (diagnosis, local and metastatic staging, and treatment planning for radiotherapy). First published report of a combination imaging method for identifying lymph node metastases in prostate cancer. Presentation at national urologic meeting on the performance of MRI (including the high value of MRI derived prostate gland volume measurement) in determining the presence of prostate cancer in patients with high clinical suspicion but negative biopsies.
4. Radiation reduction for CT scans: Established a database for research thru numerous clinical initiatives aimed at implementing new CT techniques for reduced radiation dose. Published manuscripts and presented at national meetings on radiation dose savings techniques.
5. Dual Energy CT: Initiated the first clinical implementation and database of Dual Energy CT for Body Imaging at MUSC. Initiated a collaborative group with researchers in Dual Energy CT at Mannheim Germany and Duke University.

Lectures and Presentations

Invited lectures and presentations:

1. Magnetic Resonance Enterography: Present Uses and Future Goals. Update on Inflammatory Bowel Disease. Charleston SC. October 10, 2009.
2. Technical Principles of Cardiac MRI. Cardiac Imaging: The Charleston Course at the Sanctuary. February 21-24 2010.

3. MRI of Valves and Myocardial Dysfunction. Cardiac Imaging: The Charleston Course at the Sanctuary. February 21-24 2010.
4. Cardiac Perfusion Imaging with MR. Cardiac Imaging: The Charleston Course at the Sanctuary. February 21-24 2010.
5. Research in Body MRI at MUSC. Siemens Research Day at Medical University of South Carolina Department of Radiology. February 22, 2011.
6. MRI of the Female Pelvis: New Applications. Medical University of South Carolina Obstetrics and Gynecology Department Grand Rounds. March 1, 2011.
7. Appropriate Use of Oral Contrast Agents in Emergency Radiology. Medical University of South Carolina Emergency Department Grand Rounds. March 31, 2011.
8. Magnetic Resonance Cholangio-pancreatography. Medical University of South Carolina Department of Gastrointestinal Medicine Morning Report. July 13, 2011.
9. Prostate MRI: Increasing Role in the Management of Prostate Cancer. South Carolina Radiological Society Annual Meeting. Charleston SC. March 23, 2013.
10. The Incidental Liver Lesion. South Carolina Radiological Society Annual Meeting. Charleston SC. March 19, 2014.
11. Radiological Society of North America (RSNA) Scientific Session Moderator - Genitourinary: Male Pelvis with Lymph Node Characterization. December 2, 2014.
12. Primary Care Practices Research Network (PPRNet): Primary Care 2015. Appropriate Radiologic Imaging Choices in the Era of Evidence Based Medicine. August 23 and August 26, 2016
13. Society of Computed Body Tomography Annual Meeting 2015. DECT (Dual Energy CT): Artifacts and Pitfalls. October 11, 2015.
14. South Carolina ACR Annual Meeting: Tips for Reading Prostate MRI. March 20, 2016.
15. Medical University of South Carolina Department of Urology Grand Rounds: Basic Interpretation of Genitourinary MRI. April 19, 2016.
16. Evidence and Value Based Primary Care 2016: Integrating Radiologic Image Screening. May 30 and 31, June 3 and 4, 2016

Submitted presentations (e.g., abstract or paper presentations):

Scientific Oral Presentations:

1. **Hardie AD**, Ruzsics B, Kalpatthi R, Gebregziabher M, Disco D, and Schoepf UJ. Does Hepatic Iron Load Correlate with Cardiac Iron Deposition in Sickle Cell Disease: A Quantitative MRI Analysis. Radiological Society of North America (RSNA) 2009.
2. Romano P, Stephenson M, Hanley M, and **Hardie A**. MR Imaging of Organ Iron Deposition: Physical Principles and Clinical Utility. American Roentgen Ray Society (ARRS) 2009.
3. Boulter DJ, Huda W, and **Hardie AD**. Dose and Image Quality for High Pitch Dual Source CT versus Standard Single Source CT Scanners in Abdominal and Pelvic Imaging. Radiological Society of North America (RSNA) 2010.
4. Koonce J, **Hardie A**, Moore B, Tipnis S, and Huda W. Age and Sex-Specific Radiation Risks at Abdominal CT. American Roentgen Ray Society (ARRS) 2010.
5. Koonce J, **Hardie A**, Moore B, Tipnis S, and Huda W. How Does Patient Size Affect Radiation Doses at Abdominal CT with Automatic Exposure Control? American Roentgen Ray Society (ARRS) 2010.
6. Kizziah K and **Hardie AD**. Diffusion-weighted MR Imaging for Hepatocellular Carcinoma as a Standard Alone Sequence Compared with Liver Explantation. American Roentgen Ray Society (ARRS) 2011.
7. Mayes N and **Hardie AD**. High Pitch, Dual Source CT of the Abdomen and Pelvis – A Feasibility Study. American Roentgen Ray Society (ARRS) 2011.
8. **Hardie AD**. Accuracy of Diffusion-weighted MR Imaging for Hepatocellular Carcinoma compared with Liver Explantation. European Society of Gastrointestinal and Abdominal Radiology (ESGAR) 2011.
9. **Hardie AD** and Mayes N. Ultra High Pitch CT for Trauma Imaging of the Chest, Abdomen, and Pelvis. American Society of Emergency Radiology Annual Postgraduate Course and Scientific Meeting (ASER) 2011.
10. Boulter DB, Horst N, Huda W, and **Hardie AD**. How does the choice of reference mAs in CareDose 4D affect radiation dose and image quality at abdominopelvic CT? American Roentgen Ray Society (ARRS) 2011.
11. Horst N, Mayes N and **Hardie AD**. Preliminary Evaluation of High Pitch, Dual Source Computed Tomography Enterography for Radiation Exposure Reduction. American Roentgen Ray Society (ARRS) 2012.
12. Young M, Levey R, Rosoff J, Smith J, Ghareeb G, Lane B, **Hardie AD**, Keane T and Savage S. Is MRI with diffusion weighted imaging effective in detecting prostate cancer in men with previous negative biopsies? American Urologic Association (AUA) Annual Meeting 2013.
13. **Hardie AD** and Nelson RM. Optimized Settings of SAFIRE Iterative Reconstruction for Abdominal CT: Effect of Reader Experience. American Roentgen Ray Society (ARRS) 2014.
14. **Hardie AD** and Rieter WJ. Subjective Image Quality Does Not Correlate with Image Noise in Sinogram Affirmed Iterative Reconstruction Algorithm (SAFIRE) for Abdominal CT. American Roentgen Ray Society (ARRS) 2014.

15. Currin M, DeRosa A, Rosoff, J, Roebel J, Jaenicke M, **Hardie AD** and Prasad S. Sarcopenia as Measured by Psoas and Erector Spinae Muscle Density is Associated with Higher Incidence of Postoperative Complications Following Radical Cystectomy for Bladder Cancer. American Urologic Association (AUA) Annual Meeting 2014.
16. DeCecco C, Spearman J, Schoepf UJ, Canstein C, Meinel F, Costello P, **Hardie AD**. Virtual Unenhanced Images of the Abdomen with Third-Generation Dual-Source Dual-Energy CT and Third-Generation Iterative Reconstruction: Image Quality, Attenuation and Radiation Dose. Radiological Society of North America (RSNA) 2014.
17. DeCecco C, Spearman J, Schoepf UJ, Canstein C, Meinel F, Costello P, **Hardie AD**. Value of an Advanced Image-Based Technique to Calculate Virtual Monoenergetic CT Images Using Third-Generation Dual-Energy Dual-Source CT to Improve Contrast-to-Noise Ratio in Liver Examinations. Radiological Society of North America (RSNA) 2014.
18. Schaefer AS, **Hardie AD**. Portal Phase Dual-Energy CT Improves Visualization of Hypo-enhancing Liver Lesion. Oral Poster Presentation. SCBT-MR 2016.

Scientific Poster Presentations and Educational Exhibits:

1. **Hardie AD**, Diaz FL, Wineman B, Nandalur KR, Hagspiel KD. The Spectrum of Acute Aortic Pathology on CT and MR Angiography. Radiological Society of North America (RSNA) 2006.
2. **Hardie AD**, Diaz FL, Nandalur KR, Hagspiel KD. The Role of MR Pulmonary Angiography (MRPA) in the Emergency Department Setting for Evaluation of Pulmonary Embolus. Radiological Society of North America (RSNA) 2006.
3. Diaz FL, **Hardie AD**, Ahmed HK, Hagspiel KD. Aortoenteric Fistulas: Diagnosis with CT and MR Angiography. Radiological Society of North America (RSNA) 2006. Award: Excellence in Design.
4. **Hardie AD**. The Radiologic Assessment of the Acute Abdomen in the Pregnant Patient: What Are the Risks and What Do I Need to Know? Radiological Society of North America (RSNA) 2007.
5. Lim RP, **Hardie AD**, Hecht EM, Kim DC, Xu J, Storey P, Mulholland TP, Kim S, Babb JS, Lee VS. Non Contrast Enhanced MRA of the Lower Extremities Using an ECG-gated Variable Flip Angle 3D Fast Spin Echo Sequence. International Society for Magnetic Resonance in Medicine (ISMRM) 2008.
6. **Hardie AD**, Naik M, Hecht EM, Chandarana H, Lee VS, Taouli B. Diagnosis of Liver Metastatic Lesions: Performance of Diffusion-weighted Imaging Compared to Contrast-Enhanced T1-weighted Imaging. International Society for Magnetic Resonance in Medicine (ISMRM) 2008.
7. Storey P, Ko JP, Nonaka D, Pass H, **Hardie AD**, Moses D, Megorty K, Reid J, Zhang JL, Zhang K, Chen Q. Dynamic 3D Contrast-enhanced Perfusion Imaging of Lung Cancer with One-second Temporal Resolution. International Society for Magnetic Resonance in Medicine (ISMRM) 2008.

8. Naik M, **Hardie AD**, Chandarana H, Hajdu C, Lee VS, Taouli B. Diffusion-weighted Imaging for Detection and Staging of Urothelial Neoplasms. International Society for Magnetic Resonance in Medicine (ISMRM) 2008.
9. **Hardie AD** and Kim S. Single Voxel Respiratory Triggered Proton MR Spectroscopy: Technical Considerations and Practical Applications in the Abdomen and Pelvis. Radiological Society of North America (RSNA) 2008.
10. Ruzsics B, **Hardie AD**, Kalpatthi R, Gebregziabher M, Disco D, and Schoepf UJ. Magnetic Resonance T2* Measurement of Myocardial Iron Deposition in Sickle Cell Disease: Relationship with Cardiac Function. Radiological Society of North America (RSNA) 2009.
11. **Hardie AD**. Quantification of iron deposition in chronic liver disease. International Society for Magnetic Resonance in Medicine (ISMRM) 2009.
12. **Hardie AD** and Romano PB. Use of iron sensitive T2* MR imaging as a novel method to diagnose hepatocellular carcinoma. International Society for Magnetic Resonance in Medicine (ISMRM) 2009.
13. Enterkin J and **Hardie AD**. Leaks, Obstructions, Fistulas, and Hernias: A Resident's Guide to Fluoroscopy of Bariatric Surgery. Association of University Radiologists (AUR) 2009.
14. Romano PB and **Hardie AD**. MR Imaging of Organ Iron Deposition: Physical Principles and Clinical Utility. American Roentgen Ray Society (ARRS) 2009.
15. **Hardie AD**. Evaluation of a non-enhanced MRI protocol compared to gadolinium-enhanced MRI for hepatocellular carcinoma. International Society for Magnetic Resonance in Medicine (ISMRM) 2010.
16. **Hardie AD**. The Utility of Prostate MRI using Diffusion and Dynamic Enhanced Imaging in the Evaluation of Patients Previously Biopsy Negative for Cancer. International Society for Magnetic Resonance in Medicine (ISMRM) 2010.
17. **Hardie AD**. Pain Following Gastric Bypass Surgery: Is it an Internal Hernia? A review of the Different Types of Gastric Bypass Procedures and the Expected Appearance of Internal Hernias. Radiological Society of North America (RSNA) 2010 Educational Exhibit. Category 1 CME presentation.
18. Fortney JA, Hannah J, **Hardie AD**, and Marshall DT. Comparison of Intrafractional Prostate Motion with and without Endorectal Balloon Using Cine-MRI." 92nd Annual Meeting of the American Radium Society 2010.
19. **Hardie AD**. Using MR Enterography to Differentiate Medically Treated Vs. Surgically Treated Crohn's Disease. International Society for Magnetic Resonance in Medicine (ISMRM) 2011. Educational Exhibit.
20. **Hardie AD**. How to Differentiate Medically Treated Vs. Surgically Treated Crohn's Disease on MR Enterography. European Society of Gastrointestinal and Abdominal Radiology (ESGAR) 2011. Educational Exhibit.

21. **Hardie AD.** Understanding Post Surgical Complications of Roux en-Y Gastric Bypass Surgery. European Society of Gastrointestinal Radiology European Society of Gastrointestinal and Abdominal Radiology (ESGAR) 2012. Educational Exhibit.
22. **Hardie AD** and Kershi B. Incidence of Intravenous Contrast Extravasation: Comparing Rates in Outpatients, Inpatients, and Emergency Department Patients, with a Focus on Deep Brachial Access. Association of University Radiologists (AUR) 2014.
23. Hungerford J and **Hardie AD.** Spectrum of findings in groove pancreatitis. ACR Annual Meeting and Chapter Leadership Conference (AMCLC) 2014.
24. **Hardie AD** and Rissing MS. Contribution of Ancillary Features on MRI to HCC Assessment by LIRADS Criteria and A Proposed Modification of LIRADS Classification Schema. Society of Body Computed Tomography and Magnetic Resonance (SCBTMR) 2014.
25. **Hardie AD,** Roebel J and Prasad S. Predicting Risk of Postoperative Complications Following Cystectomy Based on CT Metrics of Muscular Atrophy. Society of Body Computed Tomography and Magnetic Resonance (SCBTMR) 2014.
26. **Hardie AD,** Egbert R and Rissing MS Improved Differentiation Between Hepatic Hemangioma and Metastases on Diffusion Weighted MRI by Measurement of Standard Deviation of Apparent Diffusion Coefficient. Society of Body Computed Tomography and Magnetic Resonance (SCBTMR) 2014. ORAL POSTER
27. **Hardie AD,** DeCecco C and Schoepf UJ. Assessment of a Novel Image-Based Technique to Generate Virtual Monoenergetic CT Images Using Third-Generation Dual-Energy, Dual-Source CT for Liver Imaging. Society of Body Computed Tomography and Magnetic Resonance (SCBTMR) 2014.
28. **Hardie AD,** Picard MM, Camp ER, Perry JD, Suranyi P, De Cecco CN, Schoepf UJ, Wichmann JL. Application of an Advanced Image-Based Virtual Monoenergetic Reconstruction of Dual Source Dual-Energy CT Data at Low keV Increases Image Quality for Routine Pancreas Imaging. Presenter: Jonathan D. Perry. Poster Presentation SCBT-MR 2015.
29. **Hardie AD,** Perry JD, Bradshaw ML, Picard MM. Increased Renal Cyst Density on Abdominal CT at 100-kVp compared with 120-kVp: A Preliminary Evaluation. Presenter: Jonathan D. Perry. Poster Presentation SCBT-MR 2015

Extramural Professional Activities:

None

Faculty Development:

RSNA Workshop: Writing A Competitive Grant Proposal. January 2009

AUR Academic Faculty Development Program: April 2015

Attended numerous national and international radiologic meetings in order to gain additional education in clinical and research methods and develop professional contacts (list upon request)

Community Service:

Charleston Area Justice Ministry: an organization of community members and leaders committed to equitable opportunities for education and assuring fair treatment under the law for all persons in our region.

NOTE: Please use the following symbols to identify names of
Medical students*
Graduate students#
Residents+
who appear as co-authors on publications.

Publications: Number and list in chronological order publications under the following headings in the order shown.

Peer Reviewed Journal Articles: Published or accepted for publication in final form

1. Nandalur KR+, **Hardie AH+**, Bollampally SR+, Parmar JP+, Hagspiel KD. Accuracy of computed tomography in the characterization of pleural fluid: an ROC study. *Acad Radiol.* 2005 Aug;12(8):987-91.
2. Nandalur KR+, **Hardie AD+**, Raghavan P, Schipper MJ, Baskurt E, Kramer CM. Composition of the stable carotid plaque: insights from a multidetector computed tomography study of plaque volume. *Stroke.* 2007 Mar;38(3):935-40.
3. **Hardie AD+**, Kramer CM, Raghavan P, Baskurt E, Nandalur KR+. The impact of expansive arterial remodeling on clinical presentation in carotid artery disease: a multidetector CT angiography study. *AJNR Am J Neuroradiol.* 28:1067-1070, June-July 2007.
4. **Hardie AD+**, Wineman RW+, Nandalur KR+. The natural history of acute non-traumatic aortic diseases. *Emerg Radiol.* 2009 Mar;16(2):87-95.
5. Kim S, Salibi N, **Hardie AD**, Xu J, Lim RP, Lee VS, Taouli B. Characterization of adrenal pheochromocytoma using respiratory-triggered proton MR spectroscopy: initial experience. *AJR Am J Roentgenol.* 2009 Feb;192(2):450-4.
6. **Hardie AD** and Romano PB+. The use of T2*-weighted multi-echo GRE imaging as a novel method to diagnose hepatocellular carcinoma compared with gadolinium-enhanced MRI: a feasibility study. *Magn Reson Imaging.* 2010 Feb;28(2):281-5.
7. **Hardie AD**, Naik M, Hecht EM; Chandarana H, Mannelli L, Babb JS, Taouli B. Diagnosis of liver metastases: value of diffusion-weighted MRI compared with Gadolinium-enhanced MRI. *Eur Radiol.* 2010 Jun;20(6):1431-41.
8. **Hardie AD**, Nance J*, Boulter D+, and Kizziah MK+. Assessment of the Diagnostic Accuracy of T2*-Weighted MR Imaging for Identifying Hepatocellular Carcinoma with Liver Explant Correlation. *Eur J Radiol.* 2011 Dec;80(3):e249-52.
9. **Hardie AD**, Kizziah MK+, Rissing MS+. Can the patient with cirrhosis be imaged for hepatocellular carcinoma without gadolinium?: Comparison of combined T2-weighted, T2*-

- weighted, and diffusion weighted MRI with gadolinium-enhanced MRI using liver explantation standard. *J Comput Assist Tomogr.* 2011 Nov-Dec;35(6):711-5. PMID: 22082541
10. **Hardie AD**, Kizziah MK+, Boulter DJ+. Diagnostic accuracy of diffusion-weighted MRI for identifying hepatocellular carcinoma with liver explant correlation. *J Med Imaging Radiat Oncol.* 2011 Aug;55(4):362-7.
 11. **Hardie AD**, Mayes N+, Boulter DJ+. Use of high-pitch dual-source computed tomography of the abdomen and pelvis to markedly reduce scan time: clinical feasibility study. *J Comput Assist Tomogr.* 2011 May-Jun;35(3):353-5.
 12. **Hardie AD**, Horst ND+, Mayes N+. Preliminary evaluation of ultra-high pitch computed tomography enterography. *Acta Radiol.* 2012 Dec 1;53(10):1088-91.
 13. **Hardie AD**, Rieter WJ*, Bradshaw ML, Gordon LL, Young MA+, Keane TE. Improved performance of SPECT-CT In-111 capromab pendetide by correlation with diffusion-weighted magnetic resonance imaging for identifying metastatic pelvic lymphadenopathy in prostate cancer. *World J Urol.* 2013 Dec;31(6):1327-32.
 14. Rosenkrantz AB, Haghighi M, Horn J, Naik M, **Hardie AD**, Somberg MS, Melamed J, Xiao GQ, Huang WC, Taouli B. Utility of Quantitative MRI Metrics for Assessment of Stage and Grade of Urothelial Carcinoma of the Bladder: Preliminary Results. *AJR Am J Roentgenol.* 2013 Dec;201(6):1254-9.
 15. **Hardie AD**, Tipnis SV, Rieter WJ*, Rissing MS+, De Cecco CN. Physician Preference Between Low Dose CT with a Sinogram Affirmed Iterative Reconstruction Algorithm and Routine Dose CT with Filtered Back Projection in Abdominopelvic Imaging. *J Comput Assist Tomogr.* 2013 Nov-Dec;37(6):932-6.
 16. **Hardie AD**, Kereshi B+. Incidence of intravenous contrast extravasation: increased risk for patients with deep brachial catheter placement from the emergency department. *Emerg Radiol.* 2014 Jun;21(3):235-8.
 17. Craig DH, Ruddy JM, Pullatt RC, **Hardie AD**, Camp ER. The Diagnostic Significance of a Mucocele of the Appendix. *J S C Med Assoc.* 2014 Mar-Apr;110(1):12-3. PMID: 27125005
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