

## CURRICULUM VITAE

**Name:** Andrew D. Hardie, MD **Birth Date:** October 13, 1975

**Home Address:** 2017 Terrabrook Lane **Phone:** (843) 819-5069  
Charleston, SC 29412

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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:

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

### Licensure:

	<b>Date:</b>
South Carolina Medical License	Expires 6/2015

### 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  
April 2016-Present Vice-Chair Institutional Review Board (IRB-III)

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**Hospital Appointments/Privileges:**

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)
  - Abstract Review Committee
- 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)
  - Chair: Communications Committee
- 2013 – 2015      American Roentgen Ray Society (ARRS)
  - Abstract Review Committee
- 2014 - Present    Society of Abdominal Radiology (SAR)
  - Updates Committee

Local Societies:

- 2008 – Present    South Carolina Radiological Society

**Editorial Positions:**

Editorial Board Member

- 2018-Present    The Journal of the South Carolina Medical Association

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 (Abdominal Radiology)
- 2013-Present    International Journal of Molecular Sciences
- 2013-Present    Annals of Transplantation

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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). April 2013.
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). October 2011.
3. Co-Investigator, A Phase 2 Assessment of the Diagnostic Accuracy of 99mTc-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). June 2012.
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). January 2011.
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). January 2011.
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). July 2012.
7. 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. Paul O'Brien, P.I. (1% effort). September 2012.
8. Co-Investigator, Multicenter, open-label, randomized, controlled phase III clinical study of the efficacy and safety of photodynamic therapy using porfimer sodium for injection as treatment for unresectable advanced perihilar cholangiocarcinoma, Gregory Cote, P.I. (1% effort). June 2015.
9. Co-Investigator, PILOT STUDY OF NEOADJUVANT GEMCITABINE AND ABRAXANE CHEMOTHERAPY FOLLOWED BY SURGERY FOR PATIENTS WITH LOCALIZED, RESECTABLE ADENOCARCINOMA OF THE PANCREAS. Eric Kimchi, P.I. (1% effort). September 2012.
10. 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. Paul O'Brien, P.I. (1% effort). May 2013.

**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%). July 2011.
2. Co-Investigator, Eovist-stimulated MR and MRCP to predict Sphincter of Oddi Dysfunction (SOD). Joseph Romagnuolo P.I. (1%). August 2012.
3. Co-Investigator, Repair of Urethral diverticulectomy: Outcomes and techniques of diagnosis and treatment. Eric Rovner, P.I. (1% effort). September 2012.
4. Co-Investigator, Defining the molecular consequences of Metabolic Syndrome on Pancreatic Cancer. Ramsay Camp, P.I. (1% effort). March 2013.
5. Co-Investigator, Multi-Organ MRI Assessment In Sickle Cell Disease. Joseph Schoepf, P.I. (1% effort). July 2014.
6. Co-Investigator, A Traditional Feasibility study of Gemcitabine, Cisplatin, and 90Y TARE for Unresectable Intrahepatic Cholangiocarcinoma. Samuel Cooper, P.I. (1% effort). July 2015.

**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
2016	Fellow of European Society of Gastrointestinal and Abdominal Radiology

**Academic Committee Activities (past 5 years):**

National:

- 2012-Present Member: Medical Imaging Drugs Advisory Committee for the United States Food and Drug Administration (FDA) [Reappointed 2016]
- 2013-Present Member: Communications Committee of the Society of Computed Body Tomography and Magnetic Resonance (SCBT-MR)  
-Appointed Chair January 2017
- 2016-Present Member: Updates Committee of the Society of Abdominal Radiology

University:

- 2013-Present Member: Institutional Review Board (IRB III)

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-Appointed Vice Chair April 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

### **Mentoring Activities:**

Medical Students:

Summer Medical Student Research Assistant: Parker Leland  
Medical Scientist (MD PhD) Program (R21 proposal): Daniel Neitzke

Radiology Residents:

Mentor: Robert Hazelrigg, MD  
Mentor: Robert Egbert, MD  
Research/Scholarly Activity Mentor: Jonathan Perry, MD  
Research/Scholarly Activity Mentor: Amanda Schaefer, MD  
Research/Scholarly Activity Mentor: Janet Ter Louw, MD  
Research/Scholarly Activity Mentor: Carol Congeni, MD  
Research/Scholarly Activity Mentor: Jennifer Martin, DO

Fellows supervised as Fellowship Director:

Benjamin Kotinsky, MD  
Andrew Morgan, MD  
Dustin Johnson, MD  
Michael Klodnicki, MD  
Thomas Qualter, MD  
Kevin Gibbs, 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 separate tumor boards (Genitourinary, Hepatobiliary (Liver), and Gastrointestinal). In addition to

preparing cases for and attending these tumor boards I am frequently consulted outside of the formal tumor board regarding outside institution radiologic case interpretations and protocol questions which contribute to these same clinical services.

2. **Magnetic Resonance Imaging:** As the Clinical Director of Body MRI, I am responsible for the design and adaptation of MRI methods (protocols) to address numerous clinical indications. Some of these are virtually unique in the local community to MUSC including MR enterography, MR urography, advanced prostate MRI, and non-contrast methods to image cirrhosis prior to transplantation. As the Director of MRI Accreditation, I also am the physician lead for the accreditation of all MRI units at MUSC.
3. **Dual Energy CT:** I have been a leader in and helped develop protocols for the clinical implementation of Dual Energy CT. This is a CT technique unique to MUSC in the local region and, in fact, MUSC is considered a national leader in the development and publication/education of this technique. Dual Energy CT has the ability to better diagnose disease and also reduce both the negative impacts of radiation and iodinated contrast exposure.
4. **Ultrasound procedures:** I have helped create and maintain 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.

## **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.
17. Society of Computed Body Tomography Annual Meeting 2016. Dual Energy CT Symposium: Material Separation. September 16, 2016.
18. South Carolina Urologic Association: Prostate MRI Interpretation and Fusion Biopsy September 24, 2016.
19. Society of Abdominal Radiology Annual Meeting 2017: Exploring the splendid spleen: review of normal anatomy and pathology of the spleen. March 30, 2017.
20. MUSC Transplant Service: Understanding LIRADS/UNOS for HCC in Hepatic Transplant. April 3, 2017.
21. Society of Computed Body Tomography Annual Meeting 2017. Multi Energy CT Symposium: Dual Source Multi Energy CT Workflow. September 9, 2017.
22. Society of Computed Body Tomography Annual Meeting 2017. Multi Energy CT Symposium: Material Separation and Quantification (Iodine and HU). September 9, 2017.
23. Society of Computed Body Tomography Annual Meeting 2017. Debate Panelist: CTE vs. MRE for IBD. September 9, 2017.
24. Society of Computed Body Tomography Annual Meeting 2017. Don't Let This Happen to You (Cases we would like to do over). September 10, 2017.
25. Society of Computed Body Tomography Annual Meeting 2017. Routine DECT Reconstructions for Clinical Use. September 10, 2017.

26. Bariatric Surgery: A Guide to Internal Hernias and Other Complications. Society of Abdominal Radiology Annual Meeting 2018. Scheduled for March 6, 2018.
27. Adding Dual Energy CT to Routine Emergency Department Workflow: Friend or Foe? Society of Abdominal Radiology Annual Meeting 2018. Scheduled for March 8, 2018.

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.
19. **Hardie AD**, Burchett P, Flemming B, Kovacs M, Sheafor D. Virtual Non-contrast CT: Effect on Size and Conspicuity of Liver Metastases from Breast Carcinoma. American Roentgen Ray Society (ARRS) Annual Meeting 2018.
20. Burchett P, Bracewell S+, De Cecco C+, Sheafor D, **Hardie AD**. Does Iterative Reconstruction Affect Texture Analysis in Liver Computed Tomography (CT)? American Roentgen Ray Society (ARRS) Annual Meeting 2018.
21. Martin J+, Kovacs M, Sheafor D, Picard M, Burchett P, **Hardie AD**. Potential for Differentiating Biliary Cystadenomas from Benign Hepatic Cysts. American Roentgen Ray Society (ARRS) Annual Meeting 2018.
22. Burchett P, **Hardie AD**, Picard M, Kovacs M, Sheafor D. Impact of low kVp scan technique on oral contrast density at abdominopelvic CT. American Roentgen Ray Society (ARRS) Annual Meeting 2018.

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.” 92<sup>nd</sup> 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. 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. SCBT-MR 2015.
30. Senvil S, Taber DJ, **Hardie AD**, Mcgillicuddy, JW. Assessment of fat fraction on MRI as a Sensitive and Reliable Predictor of Sarcopenia in Liver Transplant Recipients. Presenter: Senvil S. Annual Meeting of the Southeastern Surgical Congress 2017.
31. **Hardie AD**, Kovacs MD, Picard MM, Sheafor DH. Does that renal lesion enhance? Added value of routine clinical use of iodine map reconstructed from dual energy CT Data. Society of Abdominal Radiology (SAR) Annual Meeting 2017.
32. Sheafor D, **Hardie A**, Kovacs M, Picard M, Burchett P, Adams M. Dual Energy and Low kV Techniques: Impact On Oral Contrast Density At Helical CT. American College of Radiology (ACR) Annual Meeting 2017.
33. Mastrodicasa D, De Santis D, Sabahee P, **Hardie A**, Sheafor D, Schoepf J, De Cecco C. Iodine quantification accuracy with dual-energy CT: direct comparison among three different CT scanners. SCBT-MR 2017.
34. Burchett P, De Cecco C+, Sheafor D, Flemming B, **Hardie AD**. Does Iterative Reconstruction Affect Texture Analysis in Liver Computed Tomography (CT)? Society of Abdominal Radiology (SAR) Annual Meeting 2018.
35. Bracewell S, Congeni C and **Hardie AD**. Intrahepatic Bile Duct Narrowing: It's Not Always What You Think. Scheduled for Presentation at American Roentgen Ray Society (ARRS) 2018.

**Extramural Professional Activities:**

None

**Faculty Development:**

Attended the RSNA Workshop "Writing a Competitive Grant Proposal": January 2009

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Attended the Association of University Radiologists (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.
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