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NORTHWESTERN  
UNIVERSITY

November 12, 2007

RE: Mentor Opportunity – MSSRP and RTP Programs

Dear Dr. Richard M. Green:

The purpose of this correspondence is to express my sincere interest in becoming a mentor for the MSSRP and RTP programs. While my lab has primarily focused on the technical and basic science development of oncologic and interventional imaging methodologies and applications, we are increasingly pursuing translational projects with the intention of ultimately bringing these methods to clinical fruition. We already have begun working very closely with clinicians in interventional radiology, hepatology, and medical oncology. Participation of medical student researchers would be a welcome addition to our group (in fact, interventional radiologist Dr. Reed Omary, one of my primary collaborators, already regularly involves medical students with our research). My interest in serving as a student mentor for the MSSRP and RTP programs is two-fold:

1. I feel that this arrangement could be mutually beneficial to both the medical students to be mentored as well as the graduate students already working in my lab. The different perspectives provided by these students truly offers a unique opportunity for productive and particularly relevant research and the technical expertise I can provide as a mentor will permit research opportunities not otherwise available to these medical students.
2. In order for our imaging and therapeutic methods to one day be used in the clinical setting, the next generation of physicians must become more comfortable in gaining these diverse basic science and technological competencies. Participation on research projects in my lab would provide these students important experiences to hopefully aid them in their future clinical and/or research endeavors.

Please see my attached Biosketch, CV, and research description and do not hesitate to contact me if additional information is deemed necessary. I am strongly supportive of this program and would be happy to serve as faculty mentor. I would also be happy to serve on a committee to evaluate applications for these programs.

Sincerely,

A handwritten signature in black ink, appearing to read "Andrew C. Larson".

Andrew C. Larson, PhD  
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Feinberg School of Medicine  
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## BIOGRAPHICAL SKETCH

Provide the following information for the key personnel and other significant contributors in the order listed on Form Page 2.  
Follow this format for each person. **DO NOT EXCEED FOUR PAGES.**

NAME Andrew C. Larson, PhD		POSITION TITLE Assistant Professor of Radiology and Biomedical Engineering	
eRA COMMONS USER NAME ANDREWLARSON			
EDUCATION/TRAINING <i>(Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)</i>			
INSTITUTION AND LOCATION	DEGREE <i>(if applicable)</i>	YEAR(s)	FIELD OF STUDY
Marquette University, Milwaukee, WI	B.S.	1999	Biomedical Engineering
Northwestern University, Evanston, IL	M.S.	2002	Biomedical Engineering
Northwestern University, Evanston, IL	Ph.D.	2004	Biomedical Engineering

### A. Positions and Honors

#### Positions and Employment

- 1997 Research Consultant, Channing Labs, Boston, MA
- 1997-1998 Software Engineer Co-op, Marquette Medical Systems (GE), Milwaukee, WI
- 1999 Graduate Research Intern, Siemens Medical Solutions, Cardiovascular MRI, Chicago, IL
- 2002-2004 Pre-IRTA Fellow, Laboratory of Cardiac Energetics, NHLBI/NIH, Bethesda, MD
- 2004-2005 Instructor of Radiology, Northwestern University, Feinberg School of Medicine, Chicago, IL
- 2005-present Assistant Professor of Radiology, Northwestern University, Feinberg School of Medicine, Chicago, IL
- 2005-present Adjunct Professor of Electrical Engineering and Computer Science, Northwestern University, Evanston, IL
- 2006-present Assistant Professor of Biomedical Engineering, Northwestern University, Evanston, IL
- 2006-present Associate Member, Robert H. Lurie Comprehensive Cancer Center, Northwestern Univ., Chicago, IL

#### Other Experience and Professional Memberships

- 2000 – present Member of International Society for Magnetic Resonance in Medicine (ISMRM)
- 2005 – present Member of the Society of Interventional Radiology
- Reviewer, Journal of Magnetic Resonance Imaging, Journal of Vascular and Interventional Radiology, Medical Physics, Magnetic Resonance in Medicine, Melanoma Research, Academic Radiology

#### Awards

2002 SIEMENS Cardiovascular Magnetic Resonance Imaging: Graduate Student Researcher of the Year

#### Patents

Method for Synchronizing Magnetic Resonance Imaging Data To Body Motion  
US Patent #6798199

#### **B. Selected Peer-reviewed Publications (in chronological order)**

1. Pope CA, Verrier RL, Lovett EG, **Larson AC**, Raizenne ME, Kanner RE, Schwartz J, Villegas GM, Gold DR, Dockery DW. Heart rate variability associated with particulate air pollution. *Am Heart J* 1999; 138(5 pt 1):890-7.
2. Gold D, Litonjua A, Schwartz J, Lovett E, **Larson AC**, Nearing B, Allen G, Verrier M, Cherry R, Verrier R. Ambient pollution and heart rate variability. *Circulation* 2000; 101:1267-1273
3. **Larson AC**, Simonetti O. Real-time cardiac cine imaging with SPIDER: Steady-state projection imaging with dynamic echo-train readout. *Magn Reson Med* 2001; 46:1059-1066
4. **Larson AC**, Simonetti O, Li D. Coronary MRA with 3D undersampled projection reconstruction TrueFISP. *Magn Reson Med* 2002 48:594-601
5. **Larson AC**, White R, Laub G, Li D, McVeigh E, Simonetti O. Self-Gated Projection Reconstruction Cardiac Cine Imaging. *Magn Reson Med* 2003 51:93-102

6. Boll DT, Merkle EM, Seaman DM, Gilkeson RC, **Larson AC**, Simonetti OP, Duerk JL, Lewin JS. Comparison of ECG-gated rectilinear vs. real-time radial k-space sampling schemes in cine TrueFISP cardiac MRI. *J Cardiovasc Magn Reson* 2004 6(4):793-802.
7. Crowe M, **Larson AC**, Zhang Q, Carr J, White R, Li D, Simonetti O. Automated rectilinear self-gated cardiac cine imaging. *Magn Reson Med* 2004 52:782-788
8. Kellman P, **Larson AC**, Hsu L, Chung Y, Simonetti O, McVeigh E, Arai A. Motion corrected free-breathing delayed enhancement imaging of myocardial infarction. *Magn Reson Med* 2005 53:194-200
9. **Larson AC**, Kellman P, Arai A, Hirsch G, McVeigh E, Li D, Simonetti O. Preliminary investigation of respiratory self-gating for free-breathing segmented cine MRI. *Magn Reson Med* 2005 53:159-168
10. Bi X, Park J, **Larson AC**, Zhang Q, Simonetti O, Li D. Contrast enhanced 4D radial coronary artery imaging at 3T within a single breath-hold. *Magn Reson Med* 2005 Jul 19;54(2):470-475.
11. Schirf BE, Green JD, Sato K, **Larson AC**, Shaibani A, Salem R, Li D, Omary RA. Determination of optimal gadolinium concentration using SSFP for catheter-directed contrast-enhanced coronary MR angiography. *Acad Radiology* 2005 12(6):771-775.
12. Rhee TK, Salem R, Gates V, Mounajjed T, **Larson AC**, Barakat O, Sato KT, Mulcahy M, Gordon S, Lewandowski RJ, Omary RA. The effect of catheter-directed CT angiography on Yttrium-90 radioembolization treatment of hepatocellular carcinoma. *J Vasc Interv Radiol* 2005 16(8):1085-91
13. Park J, **Larson AC**, Zhang Q, Simonetti O, Li D. 4D radial coronary artery imaging within a single breath-hold: cine angiography with phase sensitive fat suppression (CAPS). *Magn Reson Med* 2005 53:833-840.
14. Sato KT, **Larson AC**, Rhee TK, Salem RA, Nemcek AA, Mounajjed T, Paunesku T, Woloschak G, Nikolaidis P, Omary RA. Real-time MRI monitoring of transcatheter hepatic artery contrast agent delivery in rabbits. *Acad Radiol.* 2005 12(10):1342-50.
15. Omary RA, Gehl JA, Schirf BE, Green JD, Lu B, Pereles FS, Huang J, **Larson AC**, Li D. Prospective randomized comparison of MRI versus x-ray guided renal angioplasty in swine. *Radiology* 238(2):489-96
16. Rhee TK, **Larson AC**, Prasad PV, Santos E, Sato KT, Salem R, Deng J, Paunesku T, Woloschak GE, Mulcahy MF, Li D, Omary RA. Feasibility of blood oxygen level dependent magnetic resonance imaging to monitor hepatic transcatheter arterial embolization in rabbits. *J Vasc Interv Radiol* 2005 16(11):1523-28
17. Park J, **Larson AC**, Zhang Q, Simonetti O, Li D. High-resolution steady-state free precession coronary magnetic resonance angiography within a breath-hold: Parallel imaging with extended cardiac data acquisition. *Magn Reson Med* 2005 45(5):1100-6
18. Deng J, Rhee TK, Salem R, Haines K, Paunesku T, Mulcahy MF, Miller FH, Omary RA, **Larson AC**. In vivo diffusion weighted imaging of liver tumor necrosis in the VX2 rabbit model at 1.5 Tesla. *Investigative Radiology* 2006 41(4):410-4
19. Deng J, Miller FH, Rhee TK, Sato KT, Mulcahy MF, Kulik LM, Salem R, Omary RA, **Larson AC**. Diffusion-weighted MRI for determination of Hepatocellular carcinoma response to Yttrium-90 radioembolization. *J Vasc Interv Radiol* 2006 17(7):1195-2000
20. **Larson AC**, Rhee TK, Deng J, Wang D, Sato KT, Salem R, Paunesku T, Li D, Omary RA. Comparison between intravenous and intraarterial contrast injection for dynamic 3D MRI of liver tumors in the VX2 rabbit model. *J Magn Reson Imag* 2006 24(1):242-7
21. Deng J, Miller FH, Salem R, Omary RA, **Larson AC**. Multi-shot diffusion-weighted PROPELLER MRI of the abdomen. *Investigative Radiology* 41(10):769-775
22. Siddiqi AJ, Chrisman HB, Vogelzang RL, Ryu RK, Nikolaidis P, Corpuz B, **Larson AC**, Milad MP, Omary RA. MR imaging evidence of reversal of uterine ischemia after uterine artery embolization for leiomyomata. *J Vasc Interv Radiol* 2006; 17:1535-1538.
23. Park JK, Rhee TK, Cashen TA, Shin W, Schirf BE, Gehl JA, **Larson AC**, Prasad PV, Li D, Carroll TJ, Omary RA. MRI assessment of renal function during percutaneous transluminal angioplasty of renal artery stenosis in swine – feasibility. *Radiology* 2007 244(1):144-50.
24. Rhee TK, Young JY, **Larson AC**, Haines GK, Sato KT, Salem R, Mulcahy MF, Kulik LM, Paunesku T, Woloschak GE, Omary RA. Effect of transcatheter arterial embolization on levels of hypoxia-inducible factor-1-alpha in rabbit VX2 liver tumors. *J Vasc Interv Radiol* 2006 May;18(5):639-45.
25. Wang D, Bangash AK, Rhee TK, Woloschak GE, Paunesku T, Salem R, Omary RA, **Larson AC**. Liver Tumors: Monitoring Embolization in Rabbits with VX2 Tumors Transcatheter Intraarterial First-Pass Perfusion MR Imaging. *Radiology.* 2007 Oct; 245(1):130-9.

26. Virmani S, Ryu RK, Sato KT, Lewandowski RJ, Kullik L, Mulcahy MF, **Larson AC**, Salem R, Omary RA. Impact of C-arm angiographic computed tomography on transcatheter arterial chemoembolization of liver tumors. *J Vasc Interv Radiol* 2007 Oct;18(10):1305-9.
27. Virmani S, Wang D, Harris KR, Ryu RK, Sato KT, Lewandowski RJ, Nemcek A, Szolc-Kowalska B, Woloschak G, Salem R, **Larson AC**, Omary RA. Comparison of transcatheter intraarterial perfusion (TRIP)-MRI and fluorescent microsphere perfusion measurements during transcatheter arterial embolization of rabbit liver tumors. *J Vasc Interv Radiol*. 2007 Oct;18(10):1280-6.
28. Vin AP, Rhee TK, Ryu RK, **Larson AC**, Nikolaidis P, Chrisman HB, Vogelzang RL, Omary RA. Use of a combined MRI-interventional radiology suite for intra-procedural monitoring of uterine artery embolization. *J Vasc Interv Radiol* 2007 Oct;18(10):1305-9.
29. Lewandowski R, Wang D, Gehl J, Atassi B, Ryu R, Sato K, Nemcek A, Miller F, Mulcahy M, Kulik L, **Larson AC**, Salem R, Omary RA. A comparison of chemoembolization endpoints using angiographic vs transcatheter intraarterial perfusion (TRIP) – MRI. *J Vasc Interv Radiol* 2007 (*in press*).
30. **Larson AC**, Wang D, Atassi B, Sato KT, Ryu RK, Lewandowski RJ, Nemcek Jr AA, Mulcahy MF, Kulik L, Miller FH, Salem R, Omary RA. Transcatheter Intraarterial Perfusion (TRIP) - MRI Monitoring of Chemoembolization for Hepatocellular Carcinoma: Feasibility of Initial Clinical Translation. *Radiology* (*in press*)

### **C. Research Support**

#### **Ongoing Research Support**

R01 HL038698 (PI: Li)

04/01/07 – 03/31/12

NIH/NHLBI

“Self-Gated, Motion-Resolved Whole-Heart Coronary MRA with Isotropic Resolution”

The purpose of this project is to develop magnetic resonance imaging (MRI) techniques for coronary artery angiography.

Role: co-investigator

R01 HL079148 (PI: Larson)

08/01/05 – 07/31/09

Source: NIH/NHLBI

“Self-gated Cardiac MRI”

The goal of this project is to develop and optimize cardiac and respiratory cycle synchronization techniques for free-breathing high-resolution cardiovascular magnetic resonance imaging.

Role: PI

Research Grant Program (PI: Omary)

02/01/06 – 01/31/2008

Source: American Cancer Society—Illinois Chapter

Functional MRI Assessment of Hepatic Artery Embolization

In the VX2 rabbit model of hepatocellular carcinoma, this study aims to a) measure the ability of an improved MRI technique to differentiate necrotic from viable tissue in liver tumors; and b) compare functional vs. anatomic MRI assessment of tumor response following transcatheter arterial embolization.

Role: co-investigator

#### **Completed Research**

R01 HL70859 (PI: Li)

05/01/03 – 04/30/07

Source: NIH/NHLBI

“MRI-Guided Angioplasty of Coronary Artery Stenosis”

The goal of the project is to develop MR techniques to guide angioplasty of coronary artery stenosis.

Role: co-investigator

## Andrew C. Larson

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**Home:** 21334 Andover Road  
Kildeer, IL 60047  
phone: (847)726-2375

**Citizenship:** USA **POB:** Auburn, WA, USA

### EDUCATION:

**Ph.D. Biomedical Engineering** Northwestern University, Evanston, IL 2004  
**M.S. Biomedical Engineering** Northwestern University, Evanston, IL 2002  
**B.S. Biomedical Engineering** Marquette University, Milwaukee, WI 1999

### FELLOWSHIPS:

**Pre-IRTA Fellowship** Laboratory of Cardiac Energetics (NIH/NHLBI) 2002-2004  
**Walter P. Murphy Graduate Fellowship** Biomedical Engineering (NWU) 1999-2000

### FACULTY POSITIONS:

**Instructor of Radiology** 2004-2005  
Northwestern University, Feinberg School of Medicine, Chicago, IL  
**Assistant Professor of Radiology (investigator tenure track)** 2005-present  
Northwestern University, Feinberg School of Medicine, Chicago, IL  
**Professor of Electrical Engineering and Computer Science (courtesy appointment)** 2005-present  
Northwestern University, Evanston, IL  
**Assistant Professor of Biomedical Engineering (affiliated faculty)** 2006-present  
Northwestern University, Evanston, IL  
**Robert H. Lurie Comprehensive Cancer Center Associate-Member** 2006-present  
Northwestern University, Chicago, IL

### CONSULTING:

**Guidant Corporation** Cardiac Rhythm Management Research 2005 – 2006

### PROFESSIONAL MEMBERSHIPS:

Member of the International Society for Magnetic Resonance in Medicine 2000-present

- Co-moderator, ISMRM 2007, Berlin, Germany, Scientific Session: Motion Artifact Suppression Techniques

Member of the Society of Interventional Radiology 2005-present

- SIR Oncology Task Force 2005-present

Member of the International MR Angiography Club 2005-present

- Co-moderator, MRA Club 2005, Beijing, China, Scientific Session: Interventional MRI

### PEER REVIEWER:

Magnetic Resonance in Medicine, Investigative Radiology, Journal of Magnetic Resonance Imaging, MAGMA  
Journal of Vascular and Interventional Radiology, Medical Physics, Academic Radiology, Melanoma Research

### RESEARCH TRAINING EXPERIENCE:

**National Institutes of Health**  
NHLBI Laboratory of Cardiac Energetics Research Fellowship, Bethesda, MD 2002-2004  
**Siemens Medical Solutions**  
Cardiovascular MRI Research Internship, Chicago, IL Summer 1999  
**Marquette Medical Systems**  
Software Engineering Coop, Milwaukee, WI 1996-1998

### **Channing Labs**

Software development consultant, Boston, MA Fall 1997

### **Harvard School of Public Health**

Research Assistant, Boston, MA Summer 1997

### **PUBLICATIONS:**

1. Lewandowski R, Wang D, Gehl J, Atassi B, Ryu R, Sato K, Nemcek A, Miller F, Mulcahy M, Kulik L, **Larson AC**, Salem R, Omary RA. *A comparison of chemoembolization endpoints using angiographic vs transcatheter intraarterial perfusion (TRIP) – MRI*. J Vasc Interv Radiol 2007 (*in press*)
2. **Larson AC**, Wang D, Atassi B, Sato KT, Ryu RK, Lewandowski RJ, Nemcek Jr A, Mulcahy MF, Kulik L, Miller FH, Salem R, Omary RA. *Transcatheter intraarterial perfusion (TRIP) - MRI monitoring of chemoembolization for hepatocellular carcinoma: feasibility of initial clinical translation*. Radiology 2007 (*in press*)
3. Virmani S, Ryu RK, Sato KT, Lewandowski RJ, Kullik L, Mulcahy MF, **Larson AC**, Salem R, Omary RA. *Impact of C-arm angiographic computed tomography on transcatheter arterial chemoembolization of liver tumors*. J Vasc Interv Radiol 2007 Oct;18(10):1305-9.
4. Virmani S, Wang D, Harris KR, Ryu RK, Sato KT, Lewandowski RJ, Nemcek A, Szolc-Kowalska B, Woloschak G, Salem R, **Larson AC**, Omary RA. *Comparison of transcatheter intraarterial perfusion (TRIP)-MRI and fluorescent microsphere perfusion measurements during transcatheter arterial embolization of rabbit liver tumors*. J Vasc Interv Radiol. 2007 Oct;18(10):1280-6.
5. Vin AP, Rhee TK, Ryu RK, **Larson AC**, Nikolaidis P, Chrisman HB, Vogelzang RL, Omary RA. *Use of a combined MRI-interventional radiology suite for intra-procedural monitoring of uterine artery embolization*. J Vasc Interv Radiol 2007 Oct;18(10):1305-9.
6. Lewandowski R, Wang D, Gehl J, Atassi B, Ryu R, Sato K, Nemcek A, Miller F, Mulcahy M, Kulik L, **Larson AC**, Salem R, Omary RA. *A comparison of chemoembolization endpoints using angiographic vs transcatheter intraarterial perfusion (TRIP) – MRI*. J Vasc Interv Radiol 2007 (*in press*).
7. Wang D, Bangash A, Rhee T, Woloschak GE, Paunesku T, Salem R, Omary RA, **Larson AC**. *Transcatheter intraarterial first-pass perfusion (TRIP) - MRI monitoring of liver tumor embolization in VX2 rabbits*. Radiology 2007 Oct; 175(1):130-9.
8. Rhee TK, Young JY, **Larson AC**, Haines GK, Sato KT, Salem R, Mulcahy MF, Kulik LM, Paunesku T, Woloschak GE, Omary RA. *Effect of transcatheter arterial embolization on levels of hypoxia inducible factor-1 alpha in rabbit VX2 liver tumors*. J Vasc Interv Radiol 2007 May;18(5):639-45.
9. Rhee TK, Ryu RK, Bangash AK, Wang D, Szolc-Kowalska B, Harris KR, Sato KT, Chrisman HB, Vogelzang RL, Paunesku T, Woloschak GE, **Larson AC**, Omary RA. *Rabbit VX2 tumors as an animal model of uterine fibroids and for uterine artery embolization*. J Vasc Interv Radiol 2007 18(3):411-418
10. Keppke AL, Salem R, Reddy D, Huang J, Jin J, **Larson AC**, Miller FH. *Imaging of hepatocellular carcinoma after treatment with Y-90 microspheres*. AJR 2007 188(3):768-75.
11. Dharmakumar R, Arumana JM, **Larson AC**, Chung Y, Wright GA, Li D. *Cardiac phase-resolved blood oxygen-sensitive steady-state free precession MRI for evaluating the functional significance of coronary artery stenosis*. Investigative Radiology 2006 42(3):180-188
12. Park JK, Rhee TK, Cashen TA, Shin W, Schirf BE, Gehl JA, **Larson AC**, Prasad PV, Li D, Carroll TJ, Omary RA. *MRI assessment of renal function during percutaneous transluminal angioplasty of renal artery stenosis in swine – feasibility*. Radiology 2007 244(1):144-50
13. Siddiqi AJ, Chrisman HB, Vogelzang RL, Ryu RK, Nikolaidis P, Corpuz B, **Larson AC**, Milad MP, Omary RA. *MR imaging evidence of reversal of uterine ischemia after uterine artery embolization for leiomyomata*. J Vasc Interv Radiol 2006; 17:1535-1538.
14. Deng J, Miller FH, Salem R, Omary RA, **Larson AC**. *Multi-shot diffusion-weighted PROPELLER MRI of the abdomen*. Investigative Radiology 2006 41(10):769-75
15. Deng J, Miller FH, Rhee TK, Sato KT, Mulcahy MF, Kulik LM, Salem R, Omary RA, **Larson AC**. *Diffusion-weighted MRI for determination of hepatocellular carcinoma response to Yttrium-90 radioembolization*. J Vasc Interv Radiol 2006 17:1195-1200
16. **Larson AC**, Rhee TK, Deng J, Wang D, Sato KT, Salem R, Paunesku T, Li D, Omary RA. *Comparison between intravenous and intraarterial contrast injection for dynamic 3D MRI of liver tumors in the VX2 rabbit model*. J Magn Reson Imag 2006 24(1):242-7
17. Deng J, Rhee TK, Salem R, Haines K, Paunesku T, Mulcahy MF, Miller FH, Omary RA, **Larson AC**. *In vivo diffusion weighted imaging of liver tumor necrosis in the VX2 rabbit model at 1.5 Tesla*. Investigative Radiology 2006 41(4):410-4

18. Rhee TK, **Larson AC**, Prasad PV, Santos E, Sato KT, Salem R, Deng J, Paunesku T, Woloschak GE, Mulcahy MF, Li Y, Omary RA. *Feasibility of blood oxygen level dependent magnetic resonance imaging to monitor hepatic transcatheter arterial embolization in rabbits.* J Vasc Interv Radiol 2005 16(11):1523-28
19. Omary RA, Gehl JA, Schirf BE, Green JD, Lu B, Pereles FS, Huang J, **Larson AC**, Li D. *Prospective randomized comparison of MRI versus x-ray guided renal angioplasty in swine.* Radiology 2006 238(2):489-9
20. Park J, **Larson AC**, Zhang Q, Simonetti O, Li D. *High-resolution steady-state free precession coronary magnetic resonance angiography within a breath-hold: Parallel imaging with extended cardiac data acquisition.* Magn Reson Med 2005 53:833-840
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22. Park J, **Larson AC**, Zhang Q, Simonetti O, Li D. *4D radial coronary artery imaging within a single breath-hold: cine angiography with phase sensitive fat suppression (CAPS).* Magn Reson Med 2005 53:833-40
23. Bi X, Park J, **Larson AC**, Zhang Q, Simonetti O, Li D. *Contrast enhanced 4D radial coronary artery imaging at 3T within a single breath-hold.* Magn Reson Med 2005 54:470-475
24. Schirf BE, Green JD, Sato K, **Larson AC**, Shaibani A, Salem R, Li D, Omary RA. *Determination of optimal gadolinium concentration using SSFP for catheter-directed contrast-enhanced coronary MR angiography.* Academic Radiology 2005 12(6):771-5.
25. Sato KT, **Larson AC**, Rhee TK, Salem RA, Nemcek AA, Mounajjed T, Paunesku T, Woloschak G, Nikolaidis P, Omary RA. *Real-time MRI monitoring of transcatheter hepatic artery contrast agent delivery in rabbits.* Acad Radiol. 2005 12(10):1342-50
26. **Larson AC**, Kellman P, Arai A, Hirsch G, McVeigh E, Li D, Simonetti O. *Preliminary investigation of respiratory self-gating for free-breathing segmented cine MRI.* Magn Reson Med 2005 53:159-168
27. Kellman P, **Larson AC**, Hsu L, Chung Y, Simonetti O, McVeigh E, Arai A. *Motion corrected free-breathing delayed enhancement imaging of myocardial infarction.* Magn Reson Med 2005 53:194-200
28. Crowe M, **Larson AC**, Zhang Q, Carr J, White R, Li D, Simonetti O. *Automated rectilinear self-gated cardiac cine imaging.* Magn Reson Med 2004 52:782-8
29. Boll DT, Merkle EM, Seaman DM, Gilkeson RC, **Larson AC**, Simonetti OP, Duerk JL, Lewin JS. *Comparison of ECG-gated rectilinear vs. real-time radial k-space sampling schemes in cine TrueFISP cardiac MRI.* J Cardiovasc Magn Reson 2004 6(4):793-802
30. **Larson AC**, White R, Laub G, Li D, McVeigh E, Simonetti O. *Self-gated projection reconstruction cardiac cine imaging.* Magn Reson Med 2003 51:93-102
31. **Larson AC**, Simonetti O, Li D. *Coronary MRA with 3D undersampled projection reconstruction TrueFISP.* Magn Reson Med 2002 48:594-601
32. **Larson AC**, Simonetti O. *Real-time cardiac cine imaging with SPIDER: steady-state projection imaging with dynamic echo-train readout.* Magn Reson Med 2001; 46:1059-1066
33. Gold D, Litonjua A, Schwartz J, Lovett E, **Larson AC**, Nearing B, Allen G, Verrier M, Cherry R, Verrier R. *Ambient pollution and heart rate variability.* Circulation 2000; 101:1267-1273
34. Pope CA, Verrier RL, Lovett EG, **Larson AC**, Raizenne ME, Kanner RE, Schwartz J, Villegas GM, Gold DR, Dockery DW. *Heart rate variability associated with particulate air pollution.* Am Heart J 1999; 138(5 Pt 1):890-7

## ABSTRACTS PRESENTED AT CONFERENCES

1. Lewandowski RJ, Tepper J, Atassi B, Saleem S, Ryu RK, **Larson AC**, Omary RA, Salem R. *Retraction of portal vein thrombus following Yttrium-90 treatment in patients with unresectable HCC.* CIRSE, Athens, Greece 2007
2. Ryu RK, Atassi B, Lewandowski RJ, Saleem S, Sato KT, **Larson AC**, Omary RA, Salem R. *Radioembolization of liver metastases from neuroendocrine primary: clinical response, survival, and toxicity.* CIRSE, Athens, Greece 2007
3. Lewandowski RJ, Ryu RK, Sato KT, Atassi B, **Larson AC**, Salem R, Omary RA. *Reproducibility of subjective angiographic endpoints during Transarterial chemoembolization (TACE).* CIRSE, Athens, Greece 2007
4. **Larson AC**, Gupta T, Ryu RK, Lewandowski RJ, Sato KT, Salem R, Omary RA. *MRI tracking of iron-labeled radioembolization TheraSphere: animal model feasibility studies.* CIRSE, Athens, Greece 2007
5. Omary RA, Virmani S, Wang D, Ryu RK, Sato KT, Lewandowski RJ, Salem R, **Larson AC**. *The accuracy of transcatheter intraarterial perfusion (TRIP)-MRI for detecting liver tumor perfusion changes during embolization of rabbit liver tumors.* CIRSE, Athens, Greece 2007
6. Omary RA, Atassi B, Sato KT, Ryu RK, Lewandowski RJ, Nemcek AA, Salem R, **Larson AC**. *Intra-procedural functional transcatheter intraarterial perfusion (TRIP)-MRI monitoring of chemoembolization.* CIRSE, Athens, Greece

7. Ryu RK, Atassi B, Lewandowski RJ, Saleem S, Sato KT, **Larson AC**, Omary RA, Salem R. *Radioembolization of unresectable hepatocellular carcinoma using intra-arterial Yttrium-90: long term follow-up*. CIRSE, Athens, Greece 2007
8. Lewandowski RJ, Atassi B, Saleem S, Ryu RK, Sato KT, **Larson AC**, Sale R. *Yttrium-90 radioembolization of metastatic colon cancer to the liver: survival and clinical response*. CIRSE, Athens, Greece 2007
9. Omary RA, Virmani S, Ryu RK, Sato KT, Lewandowski RJ, Nemcek AA, **Larson AC**, Salem R. *Impact of C-arm angiographic computed tomography on transcatheter arterial chemoembolization of liver tumors*. CIRSE, Athens Greece 2007
10. Gupta T, Virmani S, Szolc-Kowalska B, Salem R, Omary RA, **Larson AC**. *MRI tracking of iron-labeled radioembolization TheraSpheres: phantom and animal model feasibility studies*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
11. Yin X, Katsaggelos A, Deng J, Wang D, Omary RA, **Larson AC**. *Super-resolution for whole-body diffusion-weighted MRI*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
12. Wang D, Virmani S, Koktzoglou I, Mulcahy M, Omary RA, **Larson AC**. *Rapid dynamic 3D T1-mapping of the abdomen*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
13. Wang D, Bangash A, Rhee TK, Woloschak G, Paunesku T, Salem R, Omary RA, **Larson AC**. *Transcatheter intra-arterial first-pass perfusion (TRIP)-MRI monitoring of liver tumor embolization in VX2 rabbits*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
14. **Larson AC**, Wang D, Atassi B, Sato KT, Ryu R, Miller FH, Mulcahy M, Kulik L, Salem R, Omary RA. *Transcatheter intra-arterial first-pass perfusion (TRIP)-MRI monitoring of chemoembolization*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
15. Deng J, Young J, Sumeet S, Woloschak GE, Yang GY, Omary RA, **Larson AC**. *Quantification of liver tumor necrotic fraction using diffusion-weighted PROPELLER MRI*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
16. Deng J, Omary RA, **Larson AC**. *Multi-shot diffusion-weighted split-echo PROPELLER MRI of the abdomen*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
17. Nikolaidis P, Vin AP, Rhee TK, Chrisman HB, Ryu RK, Vogelzang RL, Fasanati C, **Larson AC**, Omary RA. *Intra-procedural monitoring of perfusion changes in targeted fibroids and surrounding uterine wall during uterine artery embolization*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
18. Deng J, Omary RA, **Larson AC**. *Multi-shot diffusion-weighted split-echo PROPELLER MRI of the abdomen*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
19. Lai P, Huang F, **Larson AC**, Carr JC, Li D. *Fast 4D coronary MRA with k-t GRAPPA*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
20. Lai P, **Larson AC**, Bi X, Jerecic R, Li D. *Accuracy evaluation of a two-projection respiratory self-gating technique for coronary MRA*. Proceedings of the 14th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Berlin, Germany, 2007
21. Young JY, Virmani S, Dharmakumar R, Zuehlsdorff S, **Larson AC**, Omary RA. *Real-time MR-guided biopsy in a liver phantom*. 32<sup>nd</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), Seattle, WA, March 2007
22. Virmani S, Ryu RK, Sato KT, **Larson AC**, Salem R, Omary RA. *Impact of C-arm angiographic computed tomography on transcatheter arterial chemoembolization of liver tumors*. 32<sup>nd</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), Seattle, WA, March 2007
23. Gupta T, Virmani S, Szolc-Kowalska B, Salem R, Omary RA, **Larson AC**. *Real-time MRI tracking of iron-labeled radioembolization TheraSpheres: phantom and animal model feasibility studies*. 32<sup>nd</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), Seattle, WA, March 2007
24. Deng J, Rhee TK, Young J, Virmani S, Omary RA, **Larson AC**. *Quantification of liver tumor necrotic fraction using diffusion-weighted PROPELLER MRI in the VX2 rabbit model*. 32<sup>nd</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), Seattle, WA, March 2007
25. **Larson AC**, Wang D, Sato KT, Ryu RK, Salem R, Omary RA. *Functional Transcatheter Intraarterial Perfusion Monitoring of Chemoembolization*. 32<sup>nd</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), Seattle, WA, March 2007

26. Nijm GM, Swiryn S, **Larson AC**, Sahakian AV. *Characterization of the magnetohydrodynamic effect as a signal from the surface electrocardiogram during cardiac magnetic resonance imaging*. Proceedings of the IEEE Computers in Cardiology Conference 2006;33:269-72.
27. Miller FH, **Larson AC**, Wang D, Atassi B, Sato K, Ryu R, Mulcahy MF, Kulik L, Salem R, Omary RA. *Functional transcatheter intraarterial first-pass perfusion MRI to evaluate transcatheter arterial chemoembolization of hepatocellular carcinoma*. Proceedings of the Society of Computed Body Tomography and Magnetic Resonance Annual Meeting, 2007
28. Deng J, **Larson AC**. ISMRM Workshop on MR of Cancer: Frontiers in Metabolic, Molecular, and Clinical Imaging, Pocono Manor, PA, 2006
29. Wang D, **Larson AC**. ISMRM Workshop on MR of Cancer: Frontiers in Metabolic, Molecular, and Clinical Imaging, Pocono Manor, PA, 2006
30. Lai P, **Larson AC**, Park J, Carr JC, Li D. *Respiratory self-gated 4D coronary MRA*. Proceedings of the Biomedical Engineering Society Annual Meeting, Chicago, IL 2006
31. Huang F, Lai P, Ge L, **Larson AC**, Li D. *Respiratory self-gated 4D coronary MRA with UNFOLD*. Proceedings of the Biomedical Engineering Society Annual Meeting, Chicago, IL 2006
32. **Larson AC**, Wang D, Bangash A, Rhee TK, Woloschak G, Paunesku T, Salem R, Omary RA. *Dynamic first-pass MRI with intra-arterial contrast injections for iterative monitoring of liver tumor perfusion during transcatheter arterial embolization*. Proceedings of the 2nd Annual World Conference of Interventional Oncology, (Lake Como), Italy, June, 2006
33. Omary RA, Deng J, Mucachy M, Rhee TK, Salem R, **Larson AC**. *Diffusion-weighted MRI for determination of hepatocellular carcinoma response to Yttrium-90 radioembolization*. Proceedings of the 2nd Annual World Conference of Interventional Oncology, (Lake Como), Italy, June, 2006
34. Deng J, Miller FH, Rhee TK, Sato KT, Mulcahy MF, Salem R, Omary RA, **Larson AC**. *Diffusion-weighted MRI for determination of hepatocellular carcinoma response to Yttrium-90 radioembolization*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
35. Deng J, Stemmer A, Miller FH, Rhee TK, Salem R, Li D, Omary RA, **Larson AC**. *Multi-shot diffusion-weighted PROPELLER MRI of the abdomen*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
36. Deng J, Rhee TK, Woloschak G, Paunesku T, Omary RA, **Larson AC**. *Multi-component apparent diffusion coefficients in the rabbit VX2 tumor model*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
37. Ge L, Lai P, **Larson AC**, Park J, Bi X, Li D. *Respiratory self-gated 4D coronary MRA with UNFOLD*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
38. Lai P, **Larson AC**, Park J, Carr JC, Li D. *Respiratory self-gated 4D coronary*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
39. Chalasani P, Sandman DN, Crowe M, Simonetti OP, Wu E, Carr JC, **Larson AC**. *Self-gated cine MRI for clinical wall motion abnormality studies*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
40. Dill K, Carroll T, **Larson AC**, Gleason T, Zhang A, Reiter G, Carr JC. *Tri-directional velocity-encoding phase contrast MRI in patients undergoing aortic valve-sparing root replacement*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
41. Dharmakumar R, Tang R, Harris K, **Larson AC**, Chung Y, Wright GA, Li D. *Cardiac BOLD imaging with cine 2D-balanced SSFP*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
42. Rhee TK, Park JK, Cashen TA, Shin W, Schirf BE, **Larson AC**, Prasad PV, Li D, Carroll TJ, Omary RA. *Comparison of intraarterial MRA at 3.0T with x-ray digital subtraction angiography to detect renal artery stenosis in swine*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
43. Lai P, **Larson AC**, Nielles-Vallespin S, Li D. *Feasibility study of a double self-gating technique for free-breathing time-resolved 3D imaging*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
44. Cashen TA, Park JK, Shin W, Rhee TK, Schirf BE, **Larson AC**, Prasad P, Li D, Carroll TJ, Omary RA. *MRI assessment of renal function during percutaneous transluminal angioplasty of renal artery stenosis in swine*. Proceedings of the 13th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Seattle, WA, 2006
45. Deng J, Miller FH, Barrett K, Omary RA, Salem R, **Larson AC**. *Diffusion-weighted MRI for determination of Yttrium-90 radioembolization response*. 31<sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), Toronto, Ontario, Canada, April 2006

46. Rhee TK, Young JY, **Larson AC**, Hofmann LV, Salem R, Omary RA. *Effect of transcatheter arterial embolization on hypoxia inducible factor-1 alpha levels in rabbit VX2 liver tumors*. 31<sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), Toronto, Ontario, Canada, April 2006
47. Park J, Cashen TA, Shin W, Rhee TK, **Larson AC**, Carroll TJ, Omary RA. *3T MRI assessment of renal function during angioplasty of renal artery stenosis in swine*. 31<sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), Toronto, Ontario, Canada, April 2006
48. Ryu R, Rhee TK, Wang D, Sato K, Paunesku T, Woloschak G, **Larson AC**, Salem R, Omary RA. *Feasibility of a rabbit animal model for uterine fibroid embolization: a preliminary investigation*. 31<sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), Toronto, Ontario, Canada, April 2006
49. **Larson AC**, Rhee TK, Sato KT, Paunesku T, Salem R, Omary RA. *Feasibility of BOLD MRI to monitor transcatheter hepatic artery embolization of liver tumors in the VX2 rabbit model*. Proceedings of the 91<sup>st</sup> RSNA Meeting: Interventional Oncology Symposium, Chicago, IL 2005.
50. Omary RA, **Larson AC**, Rhee TK, Deng J, Sato KT, Salem R, Li D. *MRI monitoring of liver tumor embolization*. Proceedings of the 17<sup>th</sup> Annual International MRAngioClub Meeting, Beijing, China, 2005.
51. Lai P, **Larson AC**, Park J, Li D. *Respiratory self-gating for 4D coronary MRA*. Proceedings of the 17<sup>th</sup> Annual International MRAngioClub Meeting, Beijing, China, 2005.
52. Bi X, Park J, **Larson AC**, Zhang Q, Simonetti OP, Li D. *4D radial coronary artery imaging at 3T within a single breath-hold using contrast agent*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Miami, FL, 2005; 1955
53. Park J, **Larson AC**, Zhang Q, Simonetti OP, Li D. *4D radial coronary artery imaging within a single breath-hold: cine angiography with phase sensitive fat suppression (CAPS)*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Miami, FL, 2005; 706
54. Sandman DN, Carr JC, **Larson AC**, Crowe M, Kroeker RM, Pereles S, Simonetti OP. *Cartesian self-gated cine MRI: initial clinical experience*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Miami, FL, 2005; 1634
55. **Larson AC**, Rhee TK, Mounajjed T, Deng J, Sato KT, Haines GK, Paunesku T, Woloschak G, Li D, Omary RA. *Comparison between intravenous and intraarterial contrast injection for dynamic 3D MRI of liver tumors in the VX2 rabbit model*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Miami, FL, 2005; 2148
56. Köstler H, Ritter C, Baunach D, Beer M, **Larson AC**, Simonetti OP, Hahn D, Sandstede J. *Determination of the arterial input function in high dose radial myocardial perfusion imaging*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Miami, FL, 2005; 1624
57. **Larson AC**, Rhee TK, Mounajjed T, Deng J, Sato KT, Haines GK, Paunesku T, Woloschak G, Li D, Omary RA. *In vivo diffusion-weighted imaging of liver tumor necrosis in the VX2 rabbit model at 1.5 tesla*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Miami, FL, 2005; 2048
58. Park J, **Larson AC**, Zhang Q, Simonetti OP, Li D. *Self-calibrating sensitivity encoded image reconstruction using rescaled trajectory*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Miami, FL, 2005; 2423
59. Park J, **Larson AC**, Zhang Q, Simonetti OP, Li D. *SSFP coronary MRA at 3T: combining extended cardiac data acquisition with parallel imaging for high spatial resolution without motion artifacts*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Miami, FL, 2005; 248
60. **Larson AC**, Rhee TK, Mounajjed T, Sato KT, Salem R, Omary RA. *Comparison between intravenous and intraarterial contrast injection for dynamic 3D MRI of liver tumors in rabbits*. 30<sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), New Orleans, LA, April 2005
61. Sato KT, Rhee TK, Mounajjed T, **Larson AC**, Salem R, Omary RA. *Real-time MRI monitoring of transcatheter hepatic artery contrast agent delivery in rabbits*. 30<sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), New Orleans, LA, April 2005
62. Rhee TK, Salem R, Gates V, Mounajjed TM, **Larson AC**, Barakat O, Sato KT, Mulcahy M, Gordon S, Lewandowski RJ, Omary RA. *The effect of catheter-directed CT angiography on Yttrium-90 radioembolization treatment of hepatocellular carcinoma*. 30<sup>th</sup> Annual Scientific Meeting of the Society of Interventional Radiology (SIR), New Orleans, LA, April 2005
63. Omary RA, Green JD, Schirf BE, **Larson AC**, Carr J, Li D. *Catheter-directed gadolinium-enhanced magnetic resonance angiography*. 16th Annual International Magnetic Resonance Angiography Workshop, London, Ontario, Canada, 2004.

64. **Larson AC**, Kellman P, Arai A, Hirsch G, McVeigh E, Simonetti O. *Respiratory self-gating for free-breathing segmented cine MRI*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Kyoto, Japan, 2004; 1955
65. Kellman P, **Larson AC**, Chung Y, Simonetti O, McVeigh E, Arai A. *Motion corrected free-breathing delayed enhancement imaging of myocardial infarction*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Kyoto, Japan, 2004; 169
66. Kellman P, Zhang Q, **Larson AC**, Simonetti O, McVeigh E, Arai A. *Cardiac first-pass perfusion MRI using 3D TrueFISP parallel imaging using TSENSE*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Kyoto, Japan, 2004; 310
67. Kellman P, **Larson AC**, Zhang Q, Simonetti O, Arai A, McVeigh E. *Cardiac cine 3D TrueFISP parallel imaging using auto-calibrating 2D-TSENSE*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Kyoto, Japan, 2004; 2120
68. Crowe M, **Larson AC**, Zhang Q, Kasztejna M, Carr J, White R, Simonetti O. *Automated rectilinear self-gated cardiac cine imaging*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Kyoto, Japan, 2004; 2558
69. Cashen T, Carr J, **Larson AC**, Kroeker R, Carroll T. *Angularly undersampled PR-TRICKS for the determination of pulmonary transit time*. Proceedings of the 12th Annual International Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Kyoto, Japan, 2004; 1863
70. Crowe M, **Larson AC**, Zhang Q, Simonetti O. *Rectilinear self-gated cardiac cine imaging*, Proceedings of the 7th Annual Society of Cardiovascular Magnetic Resonance (SCMR) Meeting, Barcelona, Spain, 2004; 495
71. Kellman P, **Larson AC**, Chung Y, Simonetti O, McVeigh E, Arai A. *Multi-slice delayed hyperenhancement imaging of myocardial infarction using SENSE accelerated phase sensitive inversion recovery TrueFISP*. Proceedings of the 7th Annual Society of Cardiovascular Magnetic Resonance (SCMR) Meeting, Barcelona, Spain, 2004; 264
72. Johnson T, Simonetti O, **Larson AC**, Fogel M. *Self-gating in pediatric cardiac magnetic resonance imaging*. Proceedings of the 7th Annual Society of Cardiovascular Magnetic Resonance (SCMR) Meeting, Barcelona, Spain, 2004; 501
73. Simonetti O, White R, Choi M, **Larson AC**, Crowe M, Salanitri J, Stillman A, Pereles S. *Radial self-gated cine MRI: initial clinical experience*. Proceedings of the 7th Annual Society of Cardiovascular Magnetic Resonance (SCMR) Meeting, Barcelona, Spain, 2004; 532
74. **Larson AC**, Simonetti O, White R, Laub G, McVeigh E. *Cardiac and respiratory self-gated projection reconstruction cine imaging* Proceedings of the 89th Scientific and Annual Assembly of RSNA, Chicago, IL, 2003; 591
75. **Larson AC**, Simonetti O, White R, Laub G. *Self-gated projection reconstruction cardiac cine imaging*. Proceedings of the 11th Annual Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Toronto, Canada, 2003; 379
76. Boil D, Seaman D, **Larson AC**, Simonetti O, Merkle E, Duerk J, Lewin J. *Is there an improvement of cardiac functional parameters with increase in temporal resolution?* Proceedings of the 4th Annual Society of Cardiovascular Magnetic Resonance Meeting (SCMR), Orlando, FL, 2003; 387
77. **Larson AC**, Simonetti O. *Using UNFOLD To Remove Radial Streak Artifact In Undersampled Projection Reconstruction Cine Imaging*. Proceedings of the 10th Annual Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Honolulu, HI, 2002; 77
78. **Larson AC**, Simonetti O, Deshpande V, Shea S, Li D. *Coronary MRA with 3D Undersampled Projection Reconstruction TrueFISP*. Proceedings of the 10th Annual Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Honolulu, HI, 2002; 111
79. Shea S, **Larson AC**, Green J, Deshpande V, Finn JP, Li D. *Coronary Artery Imaging with a Reduced Field-Of-View*. Proceedings of the 10th Annual Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Honolulu, HI, 2002; 1585
80. Finn JP, **Larson AC**, Moore J, Simonetti O. *Sub-Second 3D Contrast-Enhanced MRA of the Thorax with Radial k-Space Sampling*. Proceedings of the 10th Annual Society of Magnetic Resonance in Medicine (ISMRM) Meeting, Honolulu, HI, 2002; 1779
81. **Larson AC**, Simonetti O, Shea S, Li D. *Coronary MRA with 3D undersampled projection reconstruction TrueFISP*. Proceedings of the 5th Annual Society of Cardiovascular Magnetic Resonance (SCMR) Meeting, Lake Buena Vista, FL, 2002; 135
82. **Larson AC**, Simonetti O. *Using UNFOLD to remove streak artifact in undersampled projection reconstruction cine imaging*. Proceedings of the 5th Annual Society of Cardiovascular Magnetic Resonance (SCMR) Meeting, Lake Buena Vista, FL, 2002; 163
83. Shea S, **Larson AC**, Green J, Deshpande V, Finn J, Li D. *Coronary artery imaging with a reduced field-of-view*. Proceedings of the 5th Annual Society of Cardiovascular Magnetic Resonance (SCMR) Meeting, Lake Buena Vista, FL, 2002; 254

84. **Larson AC**, Simonetti O. *Real-Time Cardiac Cine Imaging with SPIDER: Steady-State Projection Imaging with Dynamic Echo-Train Readout*. Proceedings of the International Society of Magnetic Resonance in Medicine (ISMRM) Minimum Data Acquisition Techniques Workshop, Marcos Island, FL, 2001
85. **Larson AC**, Simonetti O. *A Comparison of Rectilinear Reduced FOV TrueFISP Cine Imaging Techniques*. Proceedings of the 3rd Annual Society of Cardiovascular Magnetic Resonance Meeting (SCMR), Atlanta, GA, 2000
86. **Larson AC**, Simonetti O, Shea S, Li D. *Coronary MRA with 3D undersampled projection reconstruction TrueFISP*. Proceedings of the Annual North American Society of Cardiovascular Imaging (NASCI) Meeting, Chicago, IL, 2001
87. **Larson AC**, Simonetti O. *Steady-state projection imaging with dynamic echo-train readout*. Proceedings of the Annual North American Society of Cardiovascular Imaging (NASCI) Meeting, Chicago, IL, 2001

#### **BOOK CHAPTERS:**

1. **Larson AC**, Li D, Simonetti OP. *Cardiac Imaging Techniques*. In: Edelman R, Hesselink JR, Zlatkin MB, ed. Clinical Magnetic Resonance Imaging, Third Edition: Saunders 2005
2. Li D, **Larson AC**. *New MRI techniques for cardiovascular imaging*; in Magnetism in Medicine – A Handbook; W. Andrae and H. Nowak eds. Wiley-VCH

#### **RESEARCH SUPPORT (awarded):**

RO1 HL079148 (PI: **Larson**)

Source: NIH/NHLBI

"Self-Gated Cardiac MRI"

Start date: 08/01/05-07/31/09

Role: principle investigator

RO1 HL70859 (PI: Li)

Source: NIH/NHLBI

"MRI-Guided Angioplasty of Coronary Artery Stenosis"

05/01/03-04/30/07

Role: co-investigator

Research Grant Program (PI: Omary)

Source: American Cancer Society - Illinois Chapter

"Functional MRI Assessment of Hepatic Artery Embolization"

02/01/06-01/31/2007

Role: co-investigator

#### **RESEARCH SUPPORT (pending):**

RO1 response to PA-05-137 (PI: **Larson**)

Source: NCI

"Prediction of Radioembolization Response with Anatomic and Functional MRI"

Proposed dates: 12/01/07-11/30/12

Role: principle investigator

#### **GRANT REVIEW SERVICE:**

NIH Biomedical Imaging Technology Study Section, Council BMIT, 2/09/06, Rosen SRA

#### **PATENTS:**

**Method for Synchronizing Magnetic Resonance Imaging Data To Body Motion**

09/28/04 US Patent #6798199

#### **HONORS/AWARDS:**

**SIEMENS Cardiovascular MRI:** Graduate Student Researcher of the Year (2002)

**Roscoe Miller Award** (Best Scientific Paper): National Meeting of the Society of Gastrointestinal Radiologist and Society of Uroradiology (co-author) 4/20/2007

#### **Principle faculty advisor to recipients of following awards:**

- **Twinkle Gupta**, NWU Richard W. Jones Biomedical Engineering Research Poster Award 2007
- **Dingxin Wang**, William G. Negendank Poster Award: ISMRM Cancer Study Group Workshop 2006

- **Jie Deng**, Robert H. Lurie Comprehensive Cancer Center Malkin Scholarship 2005-2006

#### DEPARTMENTAL PUBLICATIONS / INTERVIEWS:

1. 'DW-MRI for Body Imaging', (Miller FH and **Larson AC** interview) IMAGES of Northwestern University Radiology. March 2006
2. **Larson AC** 'MRI Advances in Cardiovascular Disease and Liver Cancer', IMAGES of Northwestern University Radiology. March 2005

#### INDUSTRY INTERVIEWS:

1. Bucsko JK 'Managing Respiratory Motion', (**Larson interview**), Radiology Today 5(23):33 November 2004
2. 'Siemens receives new patent for cardiac MRI technology', (**Larson interview**), Health Imaging and Information Technology, November 2004
3. 'Siemens patent for new cardiac MRI technology', (**Larson interview**), Medical Imaging, February 2005

#### INDUSTRY PRESENTATIONS AND COMMITTEE SERVICE:

1. Eighth Annual Siemens Interventional Cardiovascular (Etc) MRI Workshop, Potsdam, Germany, 05/25/07
  - o MR Guided Cell/Drug-Delivery Discussion Panel (Arepally A, **Larson AC**, Ozturk A)
  - o MR Guided Oncologic Procedures Discussion Panel (Kahn T, Kahrar D, **Larson AC**, Stafford J)
  - o Interventional MRI Suite Design Discussion Panel (McVeigh E, Guttman M, Hagspiel K, **Larson AC**, Kahrar D)
2. **Larson AC**, Carr J, Omary RA. *Northwestern University Radiology: Interventional MRI Update*, Seventh Annual Siemens Interventional Cardiovascular MRI Workshop, Orcas Island, WA, 05/14/06
3. Omary RA, **Larson AC**, Rhee TK, Salem R, Li D. *MRI Monitoring of Liver Tumor Embolization in the VX2 Rabbit Model*, Sixth Annual Siemens Interventional Cardiovascular MRI Workshop, Peebleshire, Scotland, 07/10/05
4. **Larson AC**, *Cardiovascular Magnetic Resonance Imaging*, Guidant Corporation, Minneapolis, MN, 08/04/05 (international web-cast)
5. **Larson AC**, Crowe M, Simonetti OP, *Advances in Cardiac and Respiratory Self-Gating*, Siemens Cardiovascular MRI Ambassadors Meeting, Rottach-Egern, Germany, 06/25/04
  - Co-moderator, Sequence and k-space Working Group

#### INVITED ACADEMIC LECTURES:

1. **Larson AC**, *Diffusion and Perfusion MRI*, Northwestern Memorial Hospital, 2<sup>nd</sup> Annual Radiology Residents MRI Physics Lecture Series, 9/19/2007
2. **Larson AC**, Miller FH. *Liver MRI: Practical, Fast Approach*. NWU Department of Biomedical Engineering, Advanced MRI Course, 5/15/2007
3. **Larson AC**, *Intra-procedural and Post-procedural MRI Monitoring of Liver-Directed Therapies for Hepatocellular Carcinoma*, Robert H. Lurie Comprehensive Cancer Center, Tumor Biology Seminar, 3/22/2007
4. **Larson AC**, *Diffusion and Perfusion MRI*, Northwestern Memorial Hospital, 1<sup>st</sup> Annual Radiology Residents MRI Physics Lecture Series, 9/20/2006
5. **Larson AC**, *Self-Gating for Cardiovascular MRI*, Northwestern Memorial Hospital, Radiology Residents Cardiovascular Imaging Lecture Series, 6/12/2006
6. **Larson AC**, *Functional MRI Monitoring of Liver-Directed Therapy*, Robert H. Lurie Comprehensive Cancer Center, Oncology Imaging Symposium, 4/19/2006
7. **Larson AC**, *Cardiac and Respiratory Self-Gating for Cardiovascular MRI*, IUPUI 12/12/2005

#### MEETING ORGANIZATION:

North American IDEA Users Group Meeting 7/14/05-07/16/05  
Conference Organizer and Scientific/Social Coordinator

#### SUMMARY OF TEACHING EXPERIENCE:

##### Principle mentor/PhD advisor for Biomedical Engineering graduate students:

Jie Deng, MS 2004-present  
Dingxin Wang, MS 2005-present

Twinkle Gupta, BS 2005-present  
Ning Jin, BS 2006-present

**Principle mentor/PhD advisor for Electrical Engineering and Computer Science student:**  
Xiaoming Ling, BS 2005-present

**Principle advisor post-doctoral research assistant:**  
Pavani Chalasani, MD 2005

**NWU Biomedical Engineering Doctoral Qualification Examination Committee Service:**  
03/23/2007  
09/21/2006

**Doctoral Dissertation Committee Service:**

Grace Nijm, ECE 2009 *title pending*  
Jaseok Park, BME 2005 "MRA of the Coronary Arteries Using Parallel Data Acquisition"  
Xiaoming Bi, BME 2005 "High-Resolution Coronary MRA at 3 Tesla"  
Ty Cashen, BME 2006 "Intracranial 3D Time-Resolved Contrast-Enhanced MR Angiography"  
Ioannis Koktzoglou, BME 2006 "Methods for Vascular Wall and Atherosclerosis MRI"  
Peng Lai, BME 2005 "Self-Gating for Four-Dimensional Coronary MRA"  
Lang Ge, BME 2009 *title pending*

**CURRENT RESEARCH INTERESTS:**

The use of contrast enhanced, diffusion-weighted, and first-pass perfusion functional MRI techniques for liver tumor detection, characterization, and therapy administration. Utilization of VX-2 rabbit tumor model and native HCC rat model for the evaluation of novel imaging strategies and innovative therapies. The use of fast MR pulse sequences, undersampled projection reconstruction techniques, and parallel imaging techniques for temporally constrained cardiovascular imaging applications. Such applications include real-time cardiac cine imaging, breath-hold coronary MRA, and first-pass contrast enhanced myocardial perfusion imaging.

**REFERENCES:**

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