

# ANDREW L. WENTLAND, MD, PhD

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## Education & Training

- 2016-2020    **Resident, Department of Radiology**  
Stanford University  
Program Director: Payam Massaband, MD
- 2015-2016    **Intern, Department of Surgery**  
University of Wisconsin School of Medicine & Public Health  
Program Director: Eugene Foley, MD
- 2007-2015    **Doctor of Medicine (MD)**  
University of Wisconsin School of Medicine & Public Health
- 2009-2013    **Doctor of Philosophy (PhD) in Medical Physics**  
University of Wisconsin School of Medicine & Public Health  
Dissertation: "Flow in Radially Acquired Magnetic Resonance Imaging: Methods and Applications in Atherosclerotic Disease"  
Advisors: Oliver Wieben, PhD & Thomas Grist, MD  
Committee Members: Charles Mistretta, PhD (chair), Frank Korosec, PhD, Tomy Varghese, PhD, Deane Mosher, MD
- 2009-2011    **Master of Science (MS) in Medical Physics**  
University of Wisconsin School of Medicine & Public Health  
Advisors: Oliver Wieben, PhD & Thomas Grist, MD
- 2001-2006    **Bachelor of Science (BS) in Biomedical Engineering**  
*Graduated with Distinction & Honors in Research*  
University of Wisconsin – Madison

## Honors & Awards

### *Medical/Graduate School*

- 2015            Dr. B.K. & Tomina Lovell Memorial Scholarship
- 2014            Summa Cum Laude Merit Award, International Society for Magnetic Resonance in Medicine
- 2013            Magna Cum Laude Merit Award, International Society for Magnetic Resonance in Medicine
- 2012            Scholarship, Introduction to Academic Radiology (ITAR) Program, RSNA/APSA (Radiological Society of North America/American Physician Scientists Association)
- 2012            Junior Fellow, International Society for Magnetic Resonance in Medicine
- 2011            Trainee Stipend, International MR Angiography Club
- 2011            Educational Stipend, International Society for Magnetic Resonance in Medicine

- 2011 NHLBI Ruth L. Kirschstein National Research Service Award for Individual Predoctoral MD/PhD Fellows (F30)
- 2009 Society of Uroradiology Research Award
- 2008 RSNA Research Medical Student Grant
- 2007 Educational Stipend, International Society for Magnetic Resonance in Medicine

*Pre-doctoral*

- 2006 University Bookstore Academic Excellence Award
- 2006 Educational Stipend, International Society for Magnetic Resonance in Medicine
- 2005 Induction, Phi Kappa Phi, University of Wisconsin – Madison
- 2005 Outstanding Senior Award, University of Wisconsin – Madison College of Engineering
- 2005 Scholarship for Outstanding Performance, University of Wisconsin – Madison Department of Biomedical Engineering
- 2005 Rita Schaffer Undergraduate Award, National Biomedical Engineering Society
- 2005 Hilldale Undergraduate/Faculty Research Fellowship
- 2005 Meyerhoff Undergraduate Excellence Award for Leadership, Scholarship, and Service
- 2005 Educational Stipend, International Society for Magnetic Resonance in Medicine
- 2005 Iron Cross Society, University of Wisconsin – Madison
- 2004 Scholarship for Outstanding Performance, University of Wisconsin – Madison Department of Biomedical Engineering
- 2004 Tau Beta Pi Engineering Honor Society, University of Wisconsin – Madison
- 2003 Scholarship for Outstanding Performance, University of Wisconsin – Madison Department of Biomedical Engineering

## Professional Experience

- 12/12-01/13 **Visiting Researcher**, Department of Radiology, Stanford University School of Medicine, Stanford, CA, USA
- 09/07-09/12 **Volunteer, MEDiC**, University of Wisconsin School of Medicine & Public Health, Madison, WI, USA
- 08/07-05/15 **Fellow, Medical Scientist Training (MD/PhD) Program**, University of Wisconsin School of Medicine & Public Health, Madison, WI, USA
- 07/06-08/07 **Research Specialist**, University of Wisconsin School of Medicine & Public Health, Departments of Radiology & Medical Physics, Madison, WI, USA
- 05/03-06/06 **Undergraduate Research Assistant**, University of Wisconsin School of Medicine & Public Health, Departments of Radiology & Medical Physics, Madison, WI, USA
- 05/04-08/04 **Magnetic Resonance Visualization Engineer**, GE Healthcare, Magnetic Resonance Division, Waukesha, WI, USA

## Research Projects (major projects only)

**Visiting Researcher**, Dept. of Radiology, Stanford University, Stanford, CA, USA

12/2012 – 07/2013 “Muscle Velocity and Inertial Force with Phase Contrast MRI”  
Advisor: Garry Gold, MD

**Graduate Research Assistant**, Depts. of Radiology & Medical Physics, University of Wisconsin School of Medicine & Public Health, Madison, WI, USA

10/2010 – 06/2013 “Wall Shear Stress and Aortic Pulse Wave Velocity in Swine”  
Advisors: Thomas Grist, MD & Oliver Wieben, PhD

02/2010 – 06/2013 “Pulse Wave Velocity Measurements with 4D Phase Contrast MRI”  
Advisors: Thomas Grist, MD & Oliver Wieben, PhD

10/2010 – 04/2012 “Accuracy of Abdominal Phase Contrast MR Flow Measurements”  
Advisors: Thomas Grist, MD & Oliver Wieben, PhD

**Medical Student Researcher**, Dept. of Radiology, University of Wisconsin School of Medicine & Public Health, Madison, WI, USA

01/2008 – 03/2011 “MRI-Based Biomarkers of Renal Function in a Porcine Model”  
Advisors: Elizabeth Sadowski, MD & Sean Fain, PhD

05/2008 – 08/2008 “Fetal Origin of the Posterior Cerebral Artery on MRI Perfusion Imaging”  
Advisors: Howard Rowley, MD & Aaron Field, MD, PhD

**Research Specialist**, Dept. of Radiology, University of Wisconsin School of Medicine & Public Health, Madison, WI, USA

07/2007 – 08/2007 “MRI-Based Perfusion Measurements in Transplanted Kidneys”  
Advisors: Elizabeth Sadowski, MD & Sean Fain, PhD

**Undergraduate Research Assistant**, Depts. of Radiology & Medical Physics, University of Wisconsin School of Medicine & Public Health, Madison, WI, USA

05/2003 – 05/2006 “Phase Contrast MRI using Undersampled Projections”  
Advisors: Thomas Grist, MD & Frank Korosec, PhD

11/2004 – 05/2006 “Phase Contrast MR Measurements of CSF Flow”  
Advisors: Victor Haughton, MD & Frank Korosec, PhD

## Certifications

CPR and Basic Life Support for the Healthcare Provider, 2015  
Advanced Cardiovascular Life Support (ACLS), 2015

## Journal Papers

- 1) Fain SB, Panth SR, Evans MD, **Wentland AL**, Holmes JH, Korosec FR, O'Brien M, Fountaine H, Grist TM. Early Emphysematous Changes in Asymptomatic Smokers: Detection with  $^3\text{He}$  MR Imaging. *Radiology*. 239(3):875-883, 2006. Policy Exempt: Publication Prior to 04/07/08
- 2) **Wentland AL**, Korosec FR, Vigen KK, Wieben O, Fine JP, Grist TM. Cine Flow Measurements using Phase Contrast with Undersampled Projections: *in vitro* Validation and Preliminary Results *in vivo*. *Journal of Magnetic Resonance Imaging*. 24(4):945-951, 2006. Policy Exempt: Publication Prior to 04/07/08
- 3) Sadowski EA, Bennett L, Chan MR, **Wentland AL**, Garrett AL, Garrett RW, Djamali A. Nephrogenic Systemic Fibrosis: Risk Factors and Incidence Estimation in a Case Series of 13 Patients. *Radiology*. 243(1):140-147, 2007. Policy Exempt: Publication Prior to 04/07/08
- 4) **Wentland AL**, Sadowski EA, Djamali A, Grist TM, Becker BN, Fain SB. Quantitative MR Measures of Intrarenal Perfusion in the Assessment of Transplanted Kidneys: Initial Experience. *Academic Radiology*. 16(9):1077-85, 2009. PMID: PMC2749559
- 5) Sadowski EA, Djamali A, **Wentland AL**, Muehrer R, Becker BN, Grist TM, Fain SB. BOLD and Perfusion MRI: Detecting Differences in Oxygen Bioavailability and Blood Flow in Transplanted Kidneys. *Magnetic Resonance Imaging*. 28(1):56-64, 2010. PMID: PMC2891158
- 6) **Wentland AL**, Rowley HA, Vigen KK, Field AS. Fetal Origin of the Posterior Cerebral Artery Produces Left-Right Asymmetry on Perfusion Imaging. *American Journal of Neuroradiology*. 31(3):448-53, 2010. PMID: PMC2933401
- 7) **Wentland AL**, Wieben O, Korosec FR, Haughton VM. Accuracy and Reproducibility of Phase Contrast MR Measurements for CSF Flow. *American Journal of Neuroradiology*. 31(7):1331-6, 2010. PMID: PMC3818526
- 8) Artz NS, Sadowski EA, **Wentland AL**, Grist TM, Seo S, Djamali A, Fain SB. Arterial Spin Labeling MRI for Assessment of Perfusion in Native and Transplanted Kidneys. *Magnetic Resonance Imaging*. 29(1):74-82, 2011. PMID: PMC3005910
- 9) Biegling ET, Frydrychowicz A, **Wentland AL**, Landgraf BR, Johnson KM, Wieben O, François CJ. In vivo 3-Dimensional Magnetic Resonance Wall Shear Stress Estimation in Ascending Aortic Dilatation. *Journal of Magnetic Resonance Imaging*. 33(3):589-97, 2011. PMID: PMC3078726
- 10) Artz NS, **Wentland AL**, Sadowski EA, Djamali A, Grist TM, Seo S, Fain SB. Comparing Kidney Perfusion using Non-Contrast Arterial Spin Labeling MRI and Microsphere Methods in an Interventional Swine Model. *Investigative Radiology*. 46(2):124-31, 2011. PMID: PMC3368348
- 11) Artz NS, Sadowski EA, **Wentland AL**, Djamali A, Grist TM, Seo S, Fain SB. Reproducibility of Renal Perfusion MR Imaging in Native and Transplanted Kidneys using Non-Contrast Arterial Spin Labeling. *Journal of Magnetic Resonance Imaging*. 33(6):1414-21, 2011. PMID: PMC3098463

- 12) **Wentland AL**, Artz NS, Fain SB, Grist TM, Djamali A, Sadowski EA. MR Measures of Renal Perfusion, Oxygen Bioavailability, and Total Renal Blood Flow in a Porcine Model. *Nephrology Dialysis Transplantation*. 27(1):128-35, 2012. PMID: PMC3350337
- 13) **Wentland AL**, Wieben O, François CJ, Boncyk C, Munoz Del Rio A, Johnson KM, Grist TM, Frydrychowicz A. Aortic Pulse Wave Velocity Measurements with Undersampled 4D Flow-Sensitive MRI: Comparison to 2D and Algorithm Determination. *Journal of Magnetic Resonance Imaging*. 37(4):853-9, 2013. PMID: PMC3566322
- 14) Kramer JH, Arnoldi E, François CJ, **Wentland AL**, Nikolaou K, Wintersperger BJ, Grist TM. Dynamic and Static Magnetic Resonance Angiography of the Supra-aortic Vessels at 3.0 T: Intraindividual Comparison of Gadobutrol, Gadobenate Dimeglumine, and Gadoterate Meglumine at Equimolar Dose. *Investigative Radiology*. 48(3): 121-8, 2013. PMID: PMC3818529
- 15) **Wentland AL**, Grist TM, Wieben O. Repeatability and Internal Consistency of Abdominal 2D and 4D Phase Contrast MR Flow Measurements. *Academic Radiology*. 20(6): 699-704, 2013. PMID: PMC3897393
- 16) **Wentland AL**, Grist TM, Wieben O. Review of MRI-Based Measurements of Pulse Wave Velocity: A Biomarker of Arterial Stiffness. *Cardiovascular Diagnosis and Therapy*. 4(2): 193-206, 2014. PMID: PMC3996237
- 17) Bell LC, Johnson KM, Fain SB, **Wentland A**, Drees R, Johnson RA, Bauman G, François CJ, Nagle SK. Simultaneous MRI of Lung Structure and Perfusion in a Single Breath-Hold. *Journal of Magnetic Resonance Imaging*. 41(1): 52-9, 2015. PMID: PMC4065224
- 18) **Wentland AL**, Wieben O, Shanmuganayagam D, Krueger CG, Meudt JJ, Consigny D, Rivera L, McBride PE, Reed JD, Grist TM. Measurements of Wall Shear Stress and Aortic Pulse Wave Velocity in Swine with Familial Hypercholesterolemia. *Journal of Magnetic Resonance Imaging*. 41(5): 1475-85, 2015. PMID: PMC4276731
- 19) **Wentland AL**, McWalter EJ, Pal S, Delp SL, Gold GE. Muscle Velocity and Inertial Force from Phase Contrast Magnetic Resonance Imaging. *Journal of Magnetic Resonance Imaging*. 42(2): 526-32, 2015. PMID: PMC4442766
- 20) Bruce R, **Wentland AL**, Haemel AK, Garrett RW, Sadowski DR, Djamali A, Sadowski EA. Incidence of Nephrogenic Systemic Fibrosis using Gadobenate Dimeglumine in 1423 Patients with Renal Insufficiency Compared with Gadodiamide. *Investigative Radiology*. 51(11): 701-5, 2016.

## Conference Papers

- 1) **Wentland AL**, Frydrychowicz A, Johnson KM, François CK, Grist TM, Wieben O. Estimation of Pulse Wave Velocity Derived from 2D and 4D Flow-Sensitive Magnetic Resonance Imaging. *Proceedings of the 2<sup>nd</sup> International Conference on Computational & Mathematical Biomedical Engineering*, Washington D.C., USA, March 30 – April 1, 2011, p.447-450.

## Conference Proceedings

- 1) **Wentland AL**, Korosec FR, Vigen KK, Grist TM. Fast PC Flow Measurements Using Undersampled PR: in vitro Validation and Preliminary Results in vivo. *Proceedings of the 13<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Miami Beach, FL, USA, May 7-13, 2005, 1736.
- 2) Wu Y, Fain SB, Korosec FR, Vigen KK, Gu T, **Wentland AL**, Haughton VM. Optimizing Phase Contrast MR for CSF Flow Analyses in Chiari Malformation. *Proceedings of the 13<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Miami Beach, FL, USA, May 7-13, 2005, 68.
- 3) Panth SR, Grist TM, Korosec FR, Evans MD, **Wentland AL**, Fountaine H, Fain SB. Early Detection of Emphysematous Changes in Smokers using Hyperpolarized <sup>3</sup>He MRI. *Proceedings of the 13<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Miami Beach, FL, USA, May 7-13, 2005, 1827.
- 4) Fain SB, Panth SR, **Wentland AL**, Evans MD, Holmes JH, Korosec FR, Fountaine H, Grist TM. He-3 MRI Detects Early Emphysematous Changes in Asymptomatic Smokers. *Proceedings of the 100<sup>th</sup> Annual American Thoracic Society*, San Diego, CA, USA, May 20-25, 2005, 652.
- 5) Wu Y, **Wentland AL**, Fain SB, Korosec FR, Vigen KK, Haughton VM. Optimizing Phase Contrast MR for CSF Flow Analyses. *Proceedings of the 43<sup>rd</sup> Scientific Meeting of the American Society of Neuroradiology*, Toronto, Canada, May 21-27, 2005, 481.
- 6) **Wentland AL**, Iskandar B, Korosec FR, Haughton VM. Using Phase Contrast MR, Accelerated with Radial Acquisitions, to Study the Effects of Physical and Physiologic Maneuvers on CSF Flow in Chiari I Malformation. *Proceedings of the 91<sup>st</sup> Scientific Assembly of the Radiological Society of North America*, Chicago, IL, USA, November 27-December 2, 2005, SSK14-09.
- 7) **Wentland AL**, Wieben O, Mistretta CA, Korosec FR, Haughton VM. A Technique for Acquiring MR Images of CSF Flow during a Breath Hold. *Proceedings of the 44<sup>th</sup> Scientific Meeting of the American Society of Neuroradiology*, San Diego, CA, USA, April 29-May 5, 2006, O-132.
- 8) **Wentland AL**, Korosec FR, Wieben O, Vigen KK, Grist TM. Fast PC Flow Measurements using Undersampled Projection Reconstruction: Preliminary Results in a Swine Model. *Proceedings of the 14<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Seattle, WA, USA, May 6-12, 2006, 873.
- 9) **Wentland AL**, Wieben O, Mistretta CA, Korosec FR, Haughton VM. Technique for Acquiring MR Images of CSF Flow during a Valsalva Maneuver. *Proceedings of the 14<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Seattle, WA, USA, May 6-12, 2006, 1525.
- 10) **Wentland AL**, Korosec FR, Wieben O, Grist TM. Renal Artery Flow Measurements using a 2D Phase Contrast MR Acquisition with Undersampled Radial Projections. *Proceedings of the ISMRM Workshop on Flow and Motion: Imaging Assessment of Cardiovascular and Tissue Mechanics*, New York City, NY, USA, July 13-16, 2006, 8.

- 11) **Wentland AL**, Korosec FR, Wieben O, Haughton VM. To Measure the Effect of the Valsalva Maneuver on CSF Flow in the Foramen Magnum. *Proceedings of the 92<sup>nd</sup> Scientific Assembly of the Radiological Society of North America*, Chicago, IL, USA, November 26-December 1, 2006, LL-NR4165-R01.
- 12) **Wentland AL**, Korosec FR, Wieben O, Grist TM. Evaluation of Renal Artery Blood Flow Measurements with 2D Phase Contrast MR using Undersampled Projections. *Proceedings of the 92<sup>nd</sup> Scientific Assembly of the Radiological Society of North America*, Chicago, IL, USA, November 26-December 1, 2006, SSQ11-05.
- 13) Sadowski EA, Bennett LK, Chan MR, **Wentland AL**, Reeder SB, Djamali A. Hot Topic: Gadolinium and Nephrogenic Fibrosing Dermopathy. *Proceedings of the 92<sup>nd</sup> Scientific Assembly of the Radiological Society of North America*, Chicago, IL, USA, November 26-December 1, 2006, SSE07-06.
- 14) **Wentland AL**, Sadowski EA, Djamali A, Becker BN, Korosec FR, Grist TM, Fain SB. Determining the Correlation of Cortical and Medullary Oxygenation and Perfusion in Transplanted Kidneys by Functional MRI. *Proceedings of the 15<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Berlin, Germany, May 19-25, 2007, 408.
- 15) **Wentland AL**, Sadowski EA, Bennett LK, Garrett AL, Garrett RW, Korosec FR, Djamali A. Gadolinium and the Development of Nephrogenic Fibrosing Dermopathy. *Proceedings of the 15<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Berlin, Germany, May 19-25, 2007, 740.
- 16) Roldán A, **Wentland AL**, Wieben O, Block WF, Klaers JL, Jung Y, Haughton TM, Osswald T. Numerical Modeling of CSF Flow in Patient-Specific Anatomical Models. *Proceedings of the 15<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Berlin, Germany, May 19-25, 2007, 1891.
- 17) Farhoud M, **Wentland AL**, Wieben O, Klaers JL, Block WF, Jung Y, Roldán A, Haughton VM. Physical Models of Cerebrospinal Fluid Flow in Patients with Chiari I Malformation. *Proceedings of the 15<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Berlin, Germany, May 19-25, 2007, 1890.
- 18) **Wentland AL**, Korosec FR, Wieben O, Vigen KK, Grist TM. Cine Flow Measurements using Phase Contrast with Undersampled Projections. *Proceedings of the ISMRM Workshop on Non-Cartesian MRI*, Sedona, AZ, USA, February 25-28, 2007, 17.
- 19) Roldán A, **Wentland AL**, Wieben O, Osswald T, Farhoud M, Haughton VM. CSF Flow in the Chiari I Malformation Modeled with Computational Flow Dynamics. *Proceedings of the 45<sup>th</sup> Scientific Meeting of the American Society of Neuroradiology*, Chicago, IL, USA, June 9-14, 2007, 262.
- 20) Roldán A, **Wentland AL**, Wieben O, Haughton VM, Osswald O, Chesler N. CFD Modeling for Patient-Specific Analysis of Cerebrospinal Fluid Flow. *Proceedings of the ASME Bioengineering Conference*, Keystone, CO, USA, June 20-24, 2007, 503-4.

- 21) Houghton VM, **Wentland AL**, Wieben O, Osswald T, Roldán A. CSF Flow in the Chiari I Malformation Modeled with Computational Flow Dynamics. *Proceedings of the Syringomyelia Conference*, Rugby, United Kingdom, October 23-26, 2007.
- 22) Ehrhardt J, Garrett RW, Hinshaw M, **Wentland AL**, Adulla M, Agrawal G, Bennett LK, Djamali A, Sadowski EA. Incidence of NSF: Comparison between Gadodiamide and Gadobenate. *Proceedings of the 2008 Abdominal Radiology Course of the Society of Gastrointestinal Radiologists*, Rancho Mirage, CA, USA, February 17-22, 2008.
- 23) Garrett RW, Sadowski EA, Ehrhardt J, Hinshaw M, **Wentland AL**, Agrawal G, Bennett LK, Djamali A. Balancing the Risks and Benefits of Contrast Enhanced MR Imaging and NSF: Varying Experiences and Different Approaches. *Proceedings of the 94<sup>th</sup> Scientific Assembly of the Radiological Society of North America*, Chicago, IL, USA, November 30-December 5, 2008, LL-PP1042-D. **RSNA Certificate of Merit.**
- 24) Agrawal G, Sadowski EA, **Wentland AL**, Fain SB, Grist TM, Shinki K, Djamali A. Prolonged Persistence of Gadoteridol Compared to Gadodiamide in Normal Subjects during Functional Renal MRI Reproducibility Studies. *Proceedings of the 94<sup>th</sup> Scientific Assembly of the Radiological Society of North America*, Chicago, IL, USA, November 30-December 5, 2008, SSE23-04.
- 25) **Wentland AL**, Artz N, Djamali A, Grist TM, Agrawal G, Fain SB, Sadowski EA. Measurements of Renal Perfusion and Oxygenation in Swine: Preliminary Results. *Proceedings of the 17<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Honolulu, HI, USA, April 18-24, 2009, 2028.
- 26) Agrawal G, Fain SB, Artz N, **Wentland AL**, Grist TM, Djamali A, Sadowski EA. Blood-oxygen Level Dependent (BOLD) Imaging in Native and Transplanted Kidneys on 1.5T and 3T. *Proceedings of the 17<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Honolulu, HI, USA, April 18-24, 2009, 2027.
- 27) Artz N, **Wentland A**, Sadowski E, Wen Z, Grist T, Djamali A, Fain S. Comparing Kidney Perfusion using Arterial Spin Labeling and Microsphere Methods in an Interventional Swine Model. *Proceedings of the 17<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Honolulu, HI, USA, April 18-24, 2009, 1538.
- 28) Artz N, Sadowski E, **Wentland A**, Wen Z, Grist T, Djamali A, Fain S. Non-contrast Arterial Spin Labeling Approach to Kidney Perfusion: Assessing Reproducibility in Native and Transplanted Kidneys. *Proceedings of the 17<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Honolulu, HI, USA, April 18-24, 2009, 2038.
- 29) Garrett RW, **Wentland AL**, Djamali A, Agrawal G, Haemel A, Stanley E, Sadowski EA. Nephrogenic Systemic Fibrosis: Incidence Reduction with Screening and Use of Gadobenate Dimeglumine. *Proceedings of the 17<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Honolulu, HI, USA, April 18-24, 2009, 2512.
- 30) **Wentland AL**, Rowley HA, Vigen KK, Field AS. Fetal Origin of the Posterior Cerebral Artery Produces Asymmetry on MR Perfusion Imaging. *Proceedings of the 47<sup>th</sup> Scientific Meeting of the American Society of Neuroradiology*, Vancouver, British Columbia, Canada, May 16-21, 2009, O-284.

- 31) Artz N, Sadowski EA, **Wentland AL**, Huang Y, Grist TM, Djamali A, Fain SB. Non-Contrast Arterial Spin Labeling Approach to Kidney Perfusion: Assessing Reproducibility in Native and Transplanted Kidneys. *Proceedings of the 95<sup>th</sup> Scientific Assembly of the Radiological Society of North America*, Chicago, IL, USA, November 29-December 4, 2009, SSM22-02.
- 32) Artz NS, Sadowski EA, **Wentland AL**, Seo S, Fain SB, Djamali A. Non-invasive Evaluation of Perfusion in Native and Transplant Kidneys without a Contrast Agent. *Proceedings of the 42<sup>nd</sup> Annual Meeting of the American Society of Nephrology*, San Diego, CA, USA, October 27-November 1, 2009, SA-PO3061.
- 33) Artz NS, Sadowski EA, **Wentland AL**, Reese SR, Fain SB, Djamali A. Comparing Kidney Perfusion using MRI and Microsphere Methods in an Interventional Swine Model. *Proceedings of the 42<sup>nd</sup> Annual Meeting of the American Society of Nephrology*, San Diego, CA, USA, October 27-November 1, 2009, F-PO1725.
- 34) **Wentland AL**, Artz NS, Djamali A, Grist TM, Fain SB, Sadowski EA. Measurements of Renal Perfusion and Total Renal Blood Flow in Swine: Preliminary Results. *Proceedings of the ISMRM Workshop on Cardiovascular Flow, Function, and Tissue Mechanics*, Sintra, Portugal, September 11-13, 2009, 7.
- 35) Sadowski E, **Wentland A**, Fain S, Dance L, Djamali A, Artz N. Non-contrast MRI techniques: ASL Perfusion and BOLD MRI Measurements in Swine. *Proceedings of the Abdominal Radiology Course of the Society of Uroradiology*, Orlando, FL, USA, February 21-26, 2010.
- 36) Dance L, **Wentland A**, Artz N, Fain S, Djamali A, Sadowski E. Renal Perfusion and Oxygen Bioavailability in Swine: Comparing Isoflurane to Propofol. *Proceedings of the 18<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 1-7, 2010, 4678.
- 37) **Wentland AL**, Artz NS, Djamali A, Grist TM, Fain SB, Sadowski EA. Measurements of Renal Perfusion, Oxygenation, and Total Renal Blood Flow in Swine. *Proceedings of the 18<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 1-7, 2010, 2675.
- 38) **Wentland AL**, Biegging ET, Frydrychowicz A, Grist TM, Wieben O, François CJ. MRI Measurements of Wall Shear Stress in the Descending Aorta Downstream of an Ascending Aortic Aneurysm. *Proceedings of the 18<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 1-7, 2010, 1354.
- 39) **Wentland AL**, Biegging ET, Frydrychowicz A, Schiebler ML, Grist TM, Wieben O, François CJ. MRI Measurements of Wall Shear Stress in the Infrarenal Aorta in the Young and Old. *Proceedings of the 18<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 1-7, 2010, 1355.
- 40) Chang W, Wu Y, Johnson K, **Wentland A**, Kecskemeti S, Mistretta C, Turski P. Automated Calculation of Wall Shear Stress in the Middle Cerebral Arteries of Healthy Volunteering using PC-VIPR and Spline Interpolation. *Proceedings of the 18<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 1-7, 2010, 4428.

- 41) Hernandez L, **Wentland AL**, Biegling ET, François CJ, Wieben O. Comparing Wall Shear Stress Measurements in the Descending Aorta using Different Velocity Encoding Values. *Proceedings of the 18<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 1-7, 2010, 1351.
- 42) Niles DJ, **Wentland AL**, Artz NS, Grist TM, Fain SB, Djamali A, Sadowski EA. ASL, BOLD, and Phase Contrast MRI Measurements in the Kidneys of Normotensive and Hypotensive Swine. *Proceedings of the 18<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 1-7, 2010, 2673.
- 43) Artz N, Sadowski E, **Wentland A**, Seo S, Djamali A, Fain S. An Arterial Spin Labeling Approach to Kidney Perfusion: Assessing Reproducibility in Native and Transplanted Kidneys. *Proceedings of the 18<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 1-7, 2010, 1777.
- 44) Artz N, **Wentland A**, Sadowski E, Grist T, Djamali A, Fain S. Comparing Kidney Perfusion using Arterial Spin Labeling and Microsphere Methods in an Interventional Swine Model. *Proceedings of the 18<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Stockholm, Sweden, May 1-7, 2010, 330.
- 45) Niles DJ, Sadowski EA, Artz N, **Wentland AL**, Vigen KK, Grist TM, Fain SB, Djamali A. Non-Contrast Functional MRI: Reproducibility of BOLD, ASL and Diffusion in Native and Transplanted Kidneys. *Proceedings of the American Transplant Congress*, San Diego, CA, USA, May 1-5, 2010, 440.
- 46) Chang W, **Wentland A**, Kecskemeti S, Johnson K, Wu Y, Mistretta C, Turski P. Calculating Wall Shear Stress in the Basilar Artery of Healthy Volunteers using Automated Spline Interpolation and PC-VIPR, a Fast Radial Undersampled 3D PC-MRA Technique. *Proceedings of the 48<sup>th</sup> Scientific Meeting of the American Society of Neuroradiology*, Boston, MA, USA, May 15-20, 2010, 840.
- 47) Niles DJ, Fain SB, Artz NS, **Wentland AL**, Huang Y, Vigen KK, Grist TM, Djamali A, Sadowski EA. BOLD MRI Measurements Pre-Transplantation and 3 Months Post-Transplantation in Donor-Recipient Pairs. *Proceedings of the 96<sup>th</sup> Scientific Assembly of the Radiological Society of North America*, Chicago, IL, USA, November 28-December 3, 2010, LL-GUS-TU3A.
- 48) Artz NS, Sadowski EA, **Wentland AL**, Niles DJ, Huang Y, Vigen KK, Grist TM, Djamali A, Fain SB. MR Perfusion Measurements Prior to Kidney Transplantation and 3 Months Post-transplantation in Donor-Recipient Pairs. *Proceedings of the 96<sup>th</sup> Scientific Assembly of the Radiological Society of North America*, Chicago, IL, USA, November 28-December 3, 2010, LL-GUS-TU3B.
- 49) Sadowski EA, Niles DJ, Artz NS, **Wentland AL**, Vigen KK, Grist TM, Fain SB, Djamali A. Non-Contrast Functional MRI of the Native and Transplanted Kidney. *Proceedings of the Society of Uroradiology Abdominal Radiology Course*, Carlsbad, CA, USA, March 20-25, 2011.
- 50) **Wentland AL**, Wieben O, Johnson KM, François CJ, Grist TM, Frydrychowicz A. Comparison of Pulse Wave Velocity Measurements from 2D PC Slices and Radially Undersampled 4D PC MR. *Proceedings of the 19<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Montréal, Québec, Canada, May 7-13, 2011, 1198.

- 51) Artz N, Sadowski E, Niles D, **Wentland A**, Djamali A, Grist T, Fain S. Renal Perfusion Measured Pre- and Post-Transplantation with ASL MRI in Donor-Recipient Pairs. *Proceedings of the 19<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Montréal, Québec, Canada, May 7-13, 2011, 447.
- 52) Anderson AG, **Wentland AL**, Wieben O. On the Advantages of Retrospectively Gated Radial Acquisitions for Cine Phase Contrast Flow Imaging. *Proceedings of the 19<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Montréal, Québec, Canada, May 7-13, 2011, 2621.
- 53) **Wentland AL**, Wieben O, Johnson KM, François CJ, Grist TM, Frydrychowicz A. Pulse Wave Velocity Measurements from 2D PC Slices and Radially Undersampled 4D PC MR. *Proceedings of the 23<sup>rd</sup> Annual Meeting of the MR Angio Club*, Banff, Alberta, Canada, September 25-28, 2011, 13.7.
- 54) **Wentland A**, Grist TM, Wieben O. Repeatability and Internal Consistency of Abdominal 2D and 4D PC MR Flow Measurements. *Proceedings of the ISMRM Workshop on Exploring New Dimensions of Cardiovascular Flow & Motion*, Orlando, FL, USA, February 1-2, 2012, W13.
- 55) Frydrychowicz A, **Wentland AL**, Johnson KM, François CJ, Grist TM, Wieben O. Pulse Wave Velocity Measurements in 5-point Velocity Encoded Radially Undersampled 4D Phase Contrast MR Data (PC-VIPR). *Proceedings of the Annual Meeting of the European Society of Radiology*, Vienna, Austria, March 1-5, 2012.
- 56) **Wentland AL**, Wieben O, Grist TM, Johnson KM. McKinnon-Bates Sparsification for Accelerated Phase Contrast Imaging. *Proceedings of the 20<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Melbourne, Victoria, Australia, May 5-11, 2012, 3860.
- 57) **Wentland AL**, Sweitzer NK, Wieben O, Sadowski EA, Grist TM, François CJ. Oxygen Bioavailability and Pulse Wave Velocity in Patients with Metabolic Syndrome. *Proceedings of the 20<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Melbourne, Victoria, Australia, May 5-11, 2012, 4093.
- 58) **Wentland AL**, Djamali A, Reese SR, Fain SB, Grist TM, François CJ, Kolterman AJ, Sadowski EA. Renal Oxygen Bioavailability in Healthy Volunteers and Patients with Well-Functioning and Diseased Renal Transplants. *Proceedings of the 20<sup>th</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Melbourne, Victoria, Australia, May 5-11, 2012, 4059.
- 59) Frydrychowicz A, **Wentland AL**, Johnson KM, François CJ, Grist TM, Wieben O. Evaluation of PWV-Quantification Based on Radially Undersampled 4D Flow MRI (PC-VIPR). *Proceedings of the 93<sup>rd</sup> Annual Meeting of the German X-Ray Society*, Hamburg, Germany, May 16-19, 2012.
- 60) Frydrychowicz A, **Wentland AL**, Johnson KM, François CJ, Grist TM, Wieben O. Evaluation of PWV-Quantification Based on Radially Undersampled 4D Flow MRI (PC-VIPR). *Proceedings of the 4<sup>th</sup> German Days of Cardiac Diagnostics*, Leipzig, Germany, February 9-11, 2012.

- 61) Akhtar Z, **Wentland AL**, Artz NS, Fain SB, Djamali A, Sadowski EA. Changes to Renal Perfusion and Oxygen Bioavailability in Swine when Exposed to Propofol and Isoflurane Anesthesia. *Proceedings of the Kidney Week of the American Society of Nephrology*, San Diego, CA, USA, October 30 – November 4, 2012, PUB484.
- 62) Nagle SK, **Wentland AL**, Johnson KM, François CJ, Schiebler ML, Fain SB. Breath-Held MRA Compared with Free-Breathing UTE for Assessment of Pulmonary Arteries and Other Intrathoracic Structures. *Proceedings of the 24<sup>th</sup> Annual Meeting of the MR Angio Club*, Utrecht, The Netherlands, September 19-21, 2012.
- 63) **Wentland AL**, Grist TM, Shanmuganayagam D, Krueger CG, McBride PE, Meudt JJ, Reed JD, Wieben O. Evaluation and Validation of Pulse Wave Velocity Measurements from 2D and 4D PC MRI in Swine with Familial Hypercholesterolemia: Initial Results. *Proceedings of the 21<sup>st</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, USA, April 20-26, 2013, 65. **Magna Cum Laude award.**
- 64) François CJ, Roldán-Alzate A, **Wentland AL**, Kelliham HB, Chesler NC, Wieben O. 4D Flow-Sensitive MRI Pulmonary Artery Pulse Wave Velocity in Pulmonary Arterial Hypertension. *Proceedings of the 21<sup>st</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, USA, April 20-26, 2013, 1356.
- 65) Kramer H, Arnoldi E, François CJ, **Wentland AL**, Nikolaou K, Wintersperger BJ, Reiser M, Grist TM. Dynamic and Static MR Angiography of the Supraaortic Vessels at 3.0 T: Intraindividual Comparison of Gd-Based Contrast Agents at Single Dose. *Proceedings of the 21<sup>st</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Salt Lake City, UT, USA, April 20-26, 2013, 4460.
- 66) **Wentland AL**, McWalter EJ, Pal S, Delp SL, Gold GE. Non-Invasive in vivo Measurements of Inertial Forces in Muscle using Phase Contrast Magnetic Resonance Imaging. *Proceedings of the 22<sup>nd</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Milan, Italy, May 10-16, 2014, 828. **Summa Cum Laude award.**
- 67) Smits ML, Daniel BL, Clarke SE, McKenney J, **Wentland A**, Saranathan M, Shin L, Sung K, Hargreaves B, Saritas EU, Nishimura DG, Sommer G. Accuracy of Multiparametric MRI for Mapping Prostate Cancer by Gleason Score. *Proceedings of the 22<sup>nd</sup> Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine*, Milan, Italy, May 10-16, 2014, 4102.

## Invited Presentations

- 1) Flow in Radially Acquired Magnetic Resonance Imaging: Methods and Applications in Atherosclerotic Disease. Presented to the Department of Medical Physics, University of Wisconsin School of Medicine & Public Health, Madison, WI, USA, November 2012.
- 2) Biomarkers of Atherosclerosis with 4D Phase Contrast MRI. Presented to the Radiological Sciences Laboratory, Stanford University, Stanford, CA, USA, January 2013.
- 3) Biomarkers of Atherosclerosis with 4D Phase Contrast MRI. Presented to the Magnetic Resonance Systems Research Laboratory, Stanford University, Stanford, CA, USA, January 2013.

- 4) Derivation of Force from Phase Contrast Magnetic Resonance Imaging. Presented to the Body Magnetic Resonance Group, Stanford University, Stanford, CA, USA, January 2013.
- 5) PhD Defense or: How I Learned to Stop Worrying and Work in California. Presented to the Medical Scientist Training Program, University of Wisconsin School of Medicine & Public Health, Madison, WI, USA, February 2013.
- 6) BME, Graduate School, and Medical School: A Wonderful Journey. Presented to the Biomedical Engineering Society, University of Wisconsin, Madison, WI, USA, March 2013.

## Professional Activities

### *Committees and Organizations*

- Physician Scholar, Stanford Society of Physician Scholars, 2016 - Present
- Committee Member, Anatomy Working Group, UW School of Medicine & Public Health, 2014 – 2015
- Observing Member, ISMRM Annual Meeting Program Committee, 2012 – 2014
- President, UW School of Medicine Radiology Interest Group, 2009 – 2015
- Panelist, UW Engineering Career Services Medical School Panel, 2011
- Admissions Committee Member, UW Medical Scientist Training Program, 2011 – 2013

### *Society Memberships*

- American Board of Radiology (ABR), 2016 – Present
- American College of Radiology (ACR), 2016 – Present
- American Physician Scientists Association (APSA), 2012 – Present
- Association of University Radiologists (AUR), 2012 – Present
- International Society for Magnetic Resonance in Medicine (ISMRM), 2004 – Present
- Radiological Society of North America (RSNA), 2004 – Present

### *Editorial Positions:*

- Journal of Magnetic Resonance Imaging, Associate Editor, 2016 – Present

### *Reviewing (ad hoc): Journals*

- Atherosclerosis
- Clinical Journal of the American Society of Nephrology
- European Radiology
- Hypertension
- Journal of Biomechanics
- Journal of Magnetic Resonance Imaging
- Magnetic Resonance Imaging
- Medical Engineering & Physics
- Nephrology Dialysis Transplantation
- Neuroradiology

### *Reviewing: Conferences*

- International Society for Magnetic Resonance in Medicine (ISMRM), Flow and Motion Section

*Reviewing: Funding Agencies*

- Swiss National Science Foundation

**Grants**

MR Biomarkers for the Noninvasive Evaluation & Early Detection of Atherosclerosis

Granting Agency: National Institutes of Health, NHLBI

Principle Investigator: **Wentland AL**

Grant Number: 1F30HL108539-01

06/01/11 – 05/31/15 Total: \$157,103

MR Biomarkers for the Noninvasive Evaluation & Early Detection of Atherosclerosis

Granting Agency: University of Wisconsin Department of Radiology R&D Committee

Principal Investigator: **Wentland AL**

Co-Investigators: Wieben O, Grist TM, Krueger C

01/01/11 - 12/31/12 Total: \$20,478

Calculating Pulse Wave Velocity and Testing Optimized Cardiovascular Sequences using VIPR at 2D and 4D at 3T

Granting Agency: University of Wisconsin Department of Radiology R&D Committee

Principal Investigator: François CJ

Co-Investigators: **Wentland AL**, Frydrychowicz A, Johnson KM, Wieben O

03/01/10 - 09/30/11 Total: \$27,000

Non-Contrast Perfusion MRI Techniques: Validation in Swine and Correlation with BOLD MRI Measurements

Granting Agency: Society of Uroradiology

Principal Investigator: Sadowski EA

Co-Investigators: **Wentland AL**, Fain SB, Grist TM, Artz N, Djamali A

01/13/09 - 08/01/10 Total: \$10,000

Magnetic Resonance Imaging (MRI) Perfusion: Validation in Swine and Correlation with MR BOLD Measurements

Granting Agency: Radiological Society of North America Medical Student Research Grant

Principal Investigator: **Wentland AL**

Co-Investigators: Fain SB, Sadowski EA

05/01/08 - 08/01/09 Total: \$3,000

MR Perfusion Techniques: Validation in Swine and Correlation with MR BOLD Measurements

Granting Agency: University of Wisconsin Department of Radiology R&D Committee

Principal Investigator: Sadowski EA

Co-Investigators: Djamali A, Artz N, **Wentland AL**, Fain SB

08/01/07 - 08/01/10 Total: \$9,500