

BIOGRAPHICAL SKETCH

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NAME Dan Joseph Kadrmas	POSITION TITLE Associate Professor		
eRA COMMONS USER NAME DANKADRMAS			
EDUCATION/TRAINING (Begin with baccalaureate or other initial professional education, such as nursing, and include postdoctoral training.)			
INSTITUTION AND LOCATION	DEGREE (if applicable)	YEAR(s)	FIELD OF STUDY
Gustavus Adolphus College, St. Peter, MN	BA	1990	Physics
University of Iowa, Iowa City, IA	MS	1992	Physics
Duke University, Durham, NC		1993-4	Research Associate
The University of North Carolina at Chapel Hill, NC	PhD	1997	Biomedical Engineering
University of Utah, Salt Lake City, UT		1998	Postdoctoral Fellow

A. Positions and Honors.

1987-1990 Partners in Scholarship Research Fellowship, Gustavus Adolphus College
1988 Julian Crawford Scholarship, Gustavus Adolphus College
1989 Borneman Scholarship for Excellence, Gustavus Adolphus College
1990 Honorable Mention, NSF Fellowship for Graduate Study in Physics
1990 Honorary University of Iowa Alumni Association Scholarship
1990-1993 Research Fellowship, University of Iowa, PET imaging research
1993-1994 Research Associate, Duke University, SPECT imaging research
1994 Finalist, Computer and Instrumentation Young Investigators Competition, SNM
1994-1997 Research Assistant, UNC-Chapel Hill, SPECT imaging research
1996 Cray Research Fellow, UNC-Chapel Hill, High performance computing fellowship
1996 Finalist, Computer and Instrumentation Young Investigators Competition, SNM
1997-1998 Postdoctoral Fellow, University of Utah, Dynamic SPECT imaging research
1998-2000 Instructor of Radiology, University of Utah, PET and SPECT imaging research
2000 Finalist, 1st Decade Award—Early Professional Achievement, Gustavus Adolphus College
2000-2002 Research Assistant Professor of Radiology, University of Utah, PET imaging research
2002-2007 Assistant Professor of Radiology, Tenure Track, University of Utah, PET imaging research
2003-2004 Peer Review Member, Western Review Consortium, American Heart Association
2004-2006 Grant Reviewer, American Cancer Society
2005 Temporary Member, Biomedical Imaging Technology Study Section, NIH
2006 BMIT Special Emphasis Panel Scientific Review Group, NIH
2002-present Member, Huntsman Cancer Institute
2003-present Adjunct Assistant Professor of Bioengineering, University of Utah
2007 Tenured Associate Professor of Radiology, University of Utah, PET imaging research
2008-2010 elected member, IEEE Nuclear Medical and Imaging Sciences Council

B. Selected peer-reviewed journal articles (senior author underlined)

1. Hichwa RD, Kadrmas DJ, Watkins GL, Wollenweber SD, Maniam S, Boles Ponto LL, Richmond JCW, Koepfel JA, Vanadium-48: a renewable source for transmission scanning with PET. *Nucl Instr Meth Phys Res B* 99:804-806, 1995.
2. Kadrmas DJ, Jaszczak RJ, McCormick JW, Lim CB, Coleman RE, Truncation artifact reduction in transmission CT for improved SPECT attenuation compensation. *Phys Med Biol* 40:1085-1104, 1995.
3. Kadrmas DJ, Frey EC, Tsui BMW, An SVD investigation of modeling scatter in multiple energy windows for improved SPECT images. *IEEE Trans Nucl Sci* 43(4):2275-2284, 1996.
4. Kadrmas DJ, Frey EC, Tsui BMW, Analysis of the reconstructibility and noise properties of scattered photons in Tc-99m SPECT. *Phys Med. Biol.* 42(12):2493-2516, 1997.

5. **Kadrmas DJ**, Frey EC, Tsui BMW, Application of reconstruction-based scatter compensation to Tl-201 SPECT. *IEEE Trans Med Imag* 17(3):325-333, 1998.
6. **Kadrmas DJ**, Frey EC, Karimi SS, Tsui BMW, Fast implementations of iterative reconstruction-based scatter compensation in fully 3D SPECT image reconstruction, *Phys Med Biol*, 43(4):857-873, 1998.
7. **Kadrmas DJ**, Frey EC, Tsui BMW, Simultaneous Tc-99m/Tl-201 SPECT imaging with model-based compensation for cross contaminating effects, *Phys Med Biol*, 44(7):1843-1860, 1999.
8. **Kadrmas DJ**, Di Bella EVR, Huesman RH, Gullberg GT, Statistically efficient estimation of kinetic parameters in dynamic SPECT: Effects of attenuation, detector response and scatter, *Phys Med Biol*, 44(8):1997-2014, 1999.
9. Bai C, Zeng GL, **Kadrmas DJ** and Gullberg GT, A Study of Apparent Apical Defects in Attenuation Corrected Cardiac SPECT, *IEEE Trans. Nucl. Sci.*, 46(6):2104-2110, 1999.
10. DiBella EVR, Khare HS, **Kadrmas DJ**, and Gullberg GT, SPECT Imaging of Teboroxime during Myocardial Blood Flow Changes, *IEEE Trans. Nucl. Sci.*, 47(3):982-988, 2000.
11. **Kadrmas DJ**, DiBella EVR, Khare HS, Christian PE, and Gullberg GT, Static versus Dynamic Teboroxime Myocardial Perfusion SPECT in Canines, *IEEE Trans. Nucl. Sci.*, 47(3):1112-1117, 2000.
12. DiBella EVR, Ross SG, **Kadrmas DJ**, Khare HS, Christian PE, McJames S, and Gullberg GT, Compartmental Modeling of Technetium-99m-Labeled Teboroxime with Dynamic SPECT: Comparison to Static Thallium-201 in a Canine Model, *Invest. Radiol.*, 36(3):178-185, 2001.
13. DiBella EVR, **Kadrmas DJ** and Christian PE, Feasibility of Dual-Isotope Coincidence/Single-Photon Imaging of the Myocardium, *J. Nucl. Med.*, 2001, 42:944-950, 2001.
14. **Kadrmas DJ** and Gullberg GT. 4D Maximum A Posteriori Reconstruction of Dynamic SPECT Using a Compartmental-Model Based Prior, *Phys. Med. Biol.* 46(5):1553-1574, 2001.
15. **Kadrmas DJ**, Statistically Regulated and Adaptive EM Reconstruction for Emission Computed Tomography, *IEEE Trans. Nucl. Sci.*, 48(3):790-798, 2001.
16. Khare HS, DiBella EVR, **Kadrmas DJ**, Christian PE, and Gullberg GT, Comparison of Static and Dynamic Cardiac Perfusion Thallium-201 SPECT, *IEEE Trans. Nucl. Sci.*, 48(3):774-779, 2001.
17. **Kadrmas DJ** and Christian PE, Comparative Evaluation of Lesion Detectability for 6 PET Imaging Platforms Using a Highly-Reproducible Whole-Body Phantom with ²²Na Lesions and Localization ROC Analysis, *J. Nucl. Med.*, 43(11):1545-1554, 2002. *Accompanying editorial
18. **Kadrmas DJ** and Rust TC, Converging Slat Collimators for PET Imaging With Large-Area Detectors, *IEEE Trans. Nucl. Sci.*, 50(1):17-23, 2003.
19. Rust TC and **Kadrmas DJ**, Survey of Parallel Slat Collimator Designs for Hybrid PET Imaging, *Phys. Med. Biol.*, 47(6):97-104, 2003.
20. **Kadrmas DJ**, LOR-OSEM: Statistical PET Reconstruction from Raw LOR Histograms, *Phys. Med. Biol.*, 49(10):4731-4744, 2004.
21. **Kadrmas DJ** and Rust TC, Feasibility of Rapid Multi-Tracer PET Tumor Imaging, *IEEE Trans. Nucl. Sci.*, 52(5):1341-1347, 2005.
22. Rust TC and **Kadrmas DJ**, Rapid Dual-Tracer PTSM + ATSM PET Tumor Imaging of Blood Flow and Hypoxia: A Simulation Study, *Phys. Med. Biol.*, 51(1):61-75, 2006.
23. Rust TC, Di Bella EVR, McGann CJ, Christian PE, Hoffman JM, and **Kadrmas DJ**, Rapid Dual-Injection Single-Scan ¹³N-ammonia PET for Quantification of Rest and Stress Myocardial Blood Flows, *Phys. Med. Biol.*, 51(21):5347-5362, 2006.
24. Black NF, McJames S, Rust TC, and **Kadrmas DJ**, Evaluation of Rapid Dual-Tracer ⁶²Cu-PTSM + ⁶²C-ATSM PET in Dogs with Spontaneously-Occurring Tumors, *Phys. Med. Biol.*, 53(1):217-232, 2008.
25. **Kadrmas DJ**, Rotate-and-Slant Projector for Fast LOR-Based Fully-3D Iterative PET Reconstruction, *IEEE Trans. Med. Imag.*, 27(8):1071-1083, 2008.
26. **Kadrmas DJ**, Casey ME, Black NF, Hamill JJ, Panin VY, Conti M, Experimental Comparison of Lesion Detectability for Four Fully-3D PET Reconstruction Schemes, *IEEE Trans. Med. Imag.*, 2008, in press.

C. Research Support.

ACTIVE

Statistical PET Reconstruction

NIH/NCI R01 CA107353

5/16/2005 – 4/30/2009

(PI = Kadrmas)

The objectives of this project are to investigate statistically-regulated and LOR-based reconstruction algorithms for PET. The new algorithms will be evaluated for both estimation and detection tasks.

Role: Principal Investigator

Multifunctional PET/CT Tumor Imaging

ACS Research Scholar Grant RSG-00-200-04-CCE

7/1/2004 – 6/30/2009

(PI = Kadrmas)

The overall goal of this project is to investigate rapid multi-tracer PET imaging of ^{18}F -FDG, ^{62}Cu -PTSM, and ^{62}Cu -ATSM. The major aims are to classify the separability of these and other tracers for near-simultaneous imaging; to establish the technical feasibility of rapidly imaging 2-3 PET tracers in a single scan; to develop dual- and triple-tracer imaging protocols for these three tracers; and to experimentally test rapid multi-tracer imaging performance in canines with spontaneously-occurring tumors.

Role: Principal Investigator

Corporate Research Contract

Siemens Medical Systems

10/1/2003 – 9/30/2009

(PI = Kadrmas)

This research contract is focused on evaluating image quality for Siemens PET scanners and guiding development of future instruments with improved imaging capabilities.

Role: Principal Investigator

Sunitinib for Metastatic Renal Cell Cancer with Imaging Biomarker Assessment for the Early Prediction of Tumor Response

National Comprehensive Cancer Network

4/1/2007 – 3/31/2009

(PI = Hoffman)

This exploratory clinical trial evaluates a set of imaging derived tumor biomarkers (metabolism with ^{18}F -FDG; proliferation with ^{18}F -FLT; and blood flow with ^{15}O -water and DCE-MRI) and assesses which of these parameters alone or in combination predict early response to the drug Sunitinib in metastatic renal cell cancer.

Role: Co-Investigator

Ultra-fast whole-heart CT using z-motion of the X-ray source

NIH/NIBIB R01 EB007236-01A2

7/1/2008 – 6/30/2012

(PI=Noo)

The goal of this project is to evaluate the performance of CSHW scans for CT imaging of the coronary arteries from x-ray cone-beam data. CSHW stands for "Complete Single-beat Whole-Heart". A CSHW scan is a data-acquisition scheme that yields cone-beam data that is complete for CT imaging of the entire heart within a single heart beat; this scheme requires non-planar (z) motion of the x-ray source relative to the patient.

Role: Co-Investigator

Efficient snap-shot CT imaging of the entire heart using staggered circular scans

NIH/NIBIB R21 EB009168-01

12/1/08-11/30/2010

(PI=Noo)

The goal of this project is to investigate CT imaging of the coronary arteries from x-ray cone-beam data collected on staggered circular scans. Staggered circular scans are obtained using circular (planar) motion of a number of x-ray sources relative to the patient.

Role: Co-Investigator

COMPLETED (last 5 yrs)

Dynamic MRI for Myocardial Perfusion and Viability

NIH/NIBIB R01 Grant EB000177

Role: Co-Investigator

4/7/2003 – 1/31/2007

(PI = DiBella)

Corporate Research Contract

General Electric Medical Systems

This research contract is focused on comparatively evaluating 2D and fully-3D acquisition mode on the GE Advance PET scanner for whole-body cancer imaging.

Role: Principal Investigator

1/1/2002 - 12/31/2006

(PI = Kadrmas)

Cancer Center Pilot Project Grant

Under NIH P30 CA42014

Dual-Tracer ¹¹C-Acetate + ¹⁸F-FDG PET Imaging of Prostate Cancer

This is a pilot project with the objective of synthesizing ¹¹C-acetate and performing dual-tracer PET imaging studies in a canine model.

Role: Principal Investigator

7/1/2003 – 4/30/2004

(PI = Kadrmas)

University of Utah Benning Trust Seed Grant Program

Multifunctional PET/CT Imaging

The goal of this pilot project is to acquire preliminary data on multi-tracer PET/CT imaging of cancer.

Role: Principal Investigator

7/1/2002 – 6/30/2004

(PI = Kadrmas)

Volume-of-Interest Tumor Imaging with Coincidence-Detection PET

ACS Research Project Grant #RPG-00-200-01-CCE

The major goals of this project are to (1) investigate improved methods of collimating large-area dedicated and hybrid PET cameras, (2) develop improved fully-3D reconstruction algorithms for PET, (3) utilize co-registered CT data to improve PET images, and (4) evaluate these methods experimentally and clinically.

Role: Principal Investigator

7/1/2000 – 6/30/2003

(PI = Kadrmas)

Biomedical Information Science and Technology Initiative

NIH

Role: Co-Investigator in Program for Computational Bioimaging and Visualization

6/1/2001 – 5/31/2004

(PI = CR Johnson)

NIH/NHLBI R01 HL50663

Dynamic Cardiac SPECT Imaging

(PI = G.T. Gullberg; Utah subcontract PI = EVR Di Bella)

The objective of this research is to investigate quantitative dynamic cardiac SPECT imaging.

Role: Co-Investigator

5/1/1999 – 4/30/2003

Improved Cardiac SPECT with Convergent Hole Collimators

NIH/NHLBI R01 Grant HL039792

Role: Co-Investigator

1997 - 2003

(PI=Gullberg)

Myocardial Perfusion Imaging with Rubidium-82 and

Coincidence-Detection Gamma Cameras

AHA Beginning Grant-in-Aid 9960021Y

The major goals of this project are to investigate the feasibility of imaging generator-produced myocardial perfusion agents on coincidence-detection gamma cameras.

Role: Co-Investigator

7/1/1999 – 6/30/2002

(PI = Kadrmas)