

CURRICULUM VITAE — SANDY NAPEL

January 2018

Home Address:

Work Address: Department of Radiology
James H. Clark Center
318 Campus Drive, Room S323
Stanford, CA 94305-5450

Date of Birth: February 23, 1952
Place of Birth: New York, USA
Citizenship: USA
Marital Status: Married

Degrees

1974	SUNY at Stony Brook B.S.	Engineering Sciences
1976	Stanford University M.S.	Electrical Engineering
1981	Stanford University Ph.D.	Electrical Engineering

Principal Positions Held — Academic

1972-74	Brookhaven National Laboratory Department of Applied Sciences Upton, New York USA	Research Assistant
1976-77	Stanford University Department of Electrical Engineering Stanford, California USA	Teaching Fellow
1978-79	Stanford University Department of Electrical Engineering Stanford, California USA	Acting Instructor
1977-81	Stanford University Department of Electrical Engineering Stanford, California USA	Research Assistant
1981-88	University of California Department of Radiology San Francisco, California USA	Adj. Asst. Professor
1988-91	University of Western Ontario, Dept. of Diagnostic Radiology and Nuclear Medicine London, Ontario Canada	Visiting Asst. Professor

1991-97	Stanford University Departments of Radiology, and Electrical Engineering (by courtesy) Stanford University Medical School Stanford, California USA	Assistant Professor
1997-03	Stanford University Departments of Radiology, and Electrical Engineering (by courtesy) Medicine (by courtesy) Stanford University Medical School Stanford, California USA	Associate Professor
2003-	Stanford University Departments of Radiology, and Electrical Engineering (by courtesy) Medicine (by courtesy) Stanford University Medical School Stanford, California USA	Professor

Principal Positions Held — Industrial

Imatron, Inc.
389 Oyster Point Blvd.
So. San Francisco, California 94080:

1981-83	Manager of Computer Systems
1983-84	Director of Computer Science
1984-86	Associate VP of Computer Science
1986-87	VP of Computer Science
1987-89	VP of Engineering

Honors and Awards

1972	Tau Beta Pi (SUNY Stony Brook Chapter President 1973-74)
1974	SUNY Stony Brook Engineering Commencement Valedictorian
1988-89	Medical Research Council of Canada: Visiting Scientist Award
1989-90	National Sciences and Engineering Research Council of Canada: Visiting Industrial Fellowship
1991	Society of Computed Body Tomography <i>Cum Laude</i> Award for Presentation: Optimization of Breath-held Pulmonary Magnetic Resonance Angiography
1992	Stanford University William M. Hume Faculty Scholar Award
1992	Radiological Society of North America <i>Magna Cum Laude</i> Award for Scientific Exhibit: Abdominal Spiral CT Angiography: A Minimally Invasive Three-Dimensional Alternative to Arteriography.

- 1992 Radiological Society of North America *Certificate of Merit* Award for Scientific Exhibit: SMaRT: A Computer-based MR Teaching File
- 1993 Society of Computed Body Tomography *Cum Laude* Award for Presentation: 3D CT Angiography of Renal Artery Stenosis
- 1994 Society of Computed Body Tomography *Cum Laude* Award for Presentation: MRI of Pulmonary Embolism using Intravascular Contrast-enhanced 3D Fast Gradient Echo Technique in a Canine Model
- 1994 Society of Computed Body Tomography *Cum Laude* Award for Presentation: Pre- Operative Assessment of Living Renal Donors: Spiral CT as an Alternative to Conventional Angiography and Intravenous Urography
- 1994-97 Radiology Editor's *With Distinction* Recognition Award
- 1995 Uroradiology Society *Grand Prize* for Presentation: Reformatted Non-contrast Spiral CT in the Evaluation of Renal Colic
- 1996 Society of Computed Body Tomography *Cum Laude* Award for Presentation: Optimization of CT Parameters for Virtual Colonoscopy
- 1998 Society of Computed Body Tomography *Hounsfield* Award for Outstanding Paper: Volumetric Quantification of the Aorta and Its Branches: A Unique Application for CT Angiographic Data
- 1998 Society of Computed Body Tomography *Cum Laude* Award for A Better Gold Standard for Evaluation of Visualization Modes in CT Colonography
- 1998 Giovanni Di Chiro Award (1997) for Outstanding Scientific Research for paper: Comparison and Evaluation of Retrospective Intermodality Brain Image Registration Techniques, *J Comput Assist Tomogr*, **21**(4):554-566, 1997.
- 1999 Society of Computed Body Tomography *Cum Laude* Award for Multidetector spiral CT Colonography: maintaining image quality with rapid acquisition.
- 1999 RSNA *Research Trainee Prize* for Helical Artifacts in 1-Slice and 4-Slice CT: Quantitative and Qualitative Effects of Scanning Parameters and Object Position on a Simulated Blood Vessel Phantom
- 2000 Society of Computed Body Tomography *Hounsfield Award for Outstanding Scientific Paper* : Computer-Aided Polyp Detection Improves Reading Efficiency in CT Colonography
- 2001 RSNA *Research Trainee Prize* for Curved Thin Slab Maximum Intensity Projections (CTS-MIP): Method and Evaluation for CT Angiography.
- 2002 SCBT/MR *Hounsfield Award for Outstanding Scientific Paper*: Automated Detection of Pulmonary Nodules
- 2006 Society of Nuclear Medicine "Image of the Year" award for article: 'Flying Through' and 'Flying Around' a PET/CT scan: Pilot Study and Development of 3D

- Integrated 18F-FDG PET/CT for Virtual Bronchoscopy and Colonoscopy, J Nucl Med **47**:1081-1087, 2006.
- 2006 SCBT/MR *Hounsfield Award for Outstanding Scientific Paper*: Knowledge-based Algorithm for Automated Centerline Interpolation through Femoro-Popliteal Artery Occlusions in Peripheral CT Angiography (CTA)
- 2007 SCBT/MR *In Training Award for Best Young Investigator*: Promises and Limitations of Dual-Energy CT in Lower Extremity CT Angiography
- 2007 Society of Nuclear Medicine “Best Clinical Article”: ‘Flying Through’ and ‘Flying Around’ a PET/CT scan: Pilot Study and Development of 3D Integrated 18F-FDG PET/CT for Virtual Bronchoscopy and Colonoscopy, J Nucl Med **47**:1081-1087, 2006.
- 2009 Elected to the College of Fellows of the American Institute for Medical and Biological Engineering (AIMBE).
- 2012 Academy of Radiology Research 2012 Distinguished Investigator Award

Memberships in Professional Organizations

- 1972- Institute for Electrical and Electronics Engineers (IEEE): Acoustics, Speech and Signal Processing Society Social Implications of Technology Society
- 1991- American Association of Physicists in Medicine (AAPM)
- 1991-95 Society of Magnetic Resonance in Medicine (SMRM)
- 1991-95 Society of Magnetic Resonance Imaging (SMRI)
- 1995-2005 International Society of Magnetic Resonance in Medicine (ISMRM) (merger of SMRM and SMRI)
- 1995- Radiological Society of North America (RSNA)

Committee Membership

National

- 1994 American Association of Physicists in Medicine, Local Arrangements Chairman
- 1996-2000 Member, Program Committee, AAPM
- 1998-2002 Member, Program Committee, RSNA
- 2001-2002 Chair: Physics subcommittee of the Program committee, RSNA
- 2000 CARS 2000 Executive Committee
- 2004-2009 American College of Radiology Imaging Network (ACRIN) National Lung Screening Trial (NLST) Computer-aided detection (CAD) Working Group

Local

- 1993 Radiation Producing Machine Committee, Stanford University School of Medicine
- 1993 Co-Chair Committee on Teleradiology - Department of Radiology, Stanford University School of Medicine
- 1997 Committee on Inter-School Collaboration and Future Alliances
- 1999 Steering Committee, Medicine Meets Virtual Reality at Stanford
- 2002- Radiology Department A&P Committee
- 2015- co-Chair, Radiology Department A&P Committee

Review Activities

Scientific Journals

- 1989- Referee for Medical Physics
- 1993- Referee for Radiology
- 1994- Referee for IEEE Transactions on Medical Imaging
- 1995- Referee for Journal of Computer Assisted Tomography
- 2000- Referee for IEEE Transactions on Biomedical Engineering
- 2002- Referee for Medical Image Analysis
- 2009- Associate Editor, Medical Image Analysis
- 2011- Associate Editor, Radiology
- 2014- Associate Editor, Journal of Medical Imaging

Abstracts for Scientific Meetings

- 1992,94 Referee for Siggraph Conference
- 1993-2005 Referee for Radiological Society of North America Conference
- 1994 Referee for Visualization in Biomedical Computing Conference
- 1995 Referee for Volume Visualization '96 Conference
- 1999 Referee for World Conference on Medical Physics 2000
- 2000, 2010- Referee for MICCAI program, workshops

Teaching

- 1976-80 EE 274: The Computer as a Laboratory Instrument. Department of Electrical Engineering, Stanford University. Full responsibility for course.
- 1989-90 Biophysics 515A: Medical Imaging. University of Western Ontario. Lecturer.
- 1989-90 Biophysics 516B: Imaging Principles. University of Western Ontario. Lecturer.
- 1989-90 Physics of Radiology for Radiology Residents. Department of Diagnostic Radiology and Nuclear Medicine, University of Western Ontario. Lecturer.
- 1992-2012 Physics for Radiology Residents—Board Review. Stanford University School of Medicine. Lecturer and course director.

- 1993-2012 Radiological Physics. Stanford University School of Medicine. Lecturer.
- 1993-2006 Current Concepts of Magnetic Resonance, Post-graduate course hosted by Stanford University Medical School and Duke Medical Center. Laguna Nigel, CA (1993) and Monterey, CA (1994-). Faculty.
- 1994 Diagnostic Imaging Update, Post-graduate course hosted by Stanford University Medical School. Maui, HI. Faculty.
- 1994 Vascular Disease 1994: Diagnosis and Treatment. Post-graduate course hosted by Stanford University Medical School. Monterey, CA. Faculty.
- 1995 American Association of Physicists in Medicine Summer School: CT and US Technology and Applications. New London, CT. Faculty.
- 1997 Computed Tomography Update, Post-graduate course hosted by Stanford University Medical School. Jackson Hole, WY. (Basic Principles of Spiral CT, Basic Principles of CT Angiography)
- 1997 Advances in Electron Beam Computed Tomography, Hilton Head, SC, October 3-5, 1997
- 1999-2014 Annual International Symposium on Multidetector-Row CT. (various lectures on Principles of Multi Detector-Row CT, Data Explosion, virtual colonoscopy, CAD, visualization, decision support, etc.)
- 1999 Computed Tomography Update, post-graduate course hosted by Stanford University Medical School. Jackson Hole, WY. (Basic Principles of Spiral CT, Basic Principles of Multidetector CT, Basic Principles of CT Angiography)
- 1999 Short Course in Medical Imaging and Image Processing, Erlangen, Germany, October 14, 1999. (Basics and Applications of Post-processing Methods)
- 2000 Stanford University Course MIS 210-B—Medical Imaging. Medical Image Visualization (1/19/2000)
- 2000 Southeast Area Chapter of the American Association of Physicists in Medicine: Spring Symposium—Spiral & Multi-slice CT: Physical Principles & Medical Physicist Responsibilities (Multidetector CT: Interpretation, Display, and 3D Imaging Considerations) (3/16/2000)
- 2000 Stanford University Course ME 187/388/CS 123/MIS 187/287—Biomedical Computation: Opportunities and Challenges. Medical Image Visualization (3/29/2000)
- 2002-8 Stanford University Course ME-284, Cardiovascular Bioengineering. Lecture: CT Imaging with Applications to Vascular Disease, Winter Qtr.
- 2003 Diagnostic Imaging Update, post-graduate course hosted by Stanford University Medical School and Keio University. Poipu Beach, Kauai, HI. (Volumetric CT: MDCT and Beyond, MDCT Data Explosion I: The Problem and Potential Solutions for Vascular CT, MDCT Data Explosion II: Potential Solutions for Cancer Detection), March 17-21.

- 2005 Diagnostic Imaging Update, post-graduate course hosted by Stanford University Medical School and Keio University. Poipu Beach, Kauai, HI. (Basic Principles of Multidetector CT: Four Slices and Beyond; Managing Image Overload using Advanced Visualization and Computer-Aided Navigation; CAD for CT: Concepts, Current Status, and Future Prospects), March 28-April 1.
- 2009 Diagnostic Imaging Update, post-graduate course hosted by Stanford University Medical School and Keio University. Wailea, Maui, HI. (CAD for CT: Concepts, Current Status, and Future Prospects, Imaging Informatics for Radiological Decision Support), March 23-27.
- 2010 RSNA 2010 Refresher Course on Decision Support in Clinical Practice: Automated Image Retrieval based on Lesion and Case Similarity. Chicago, November 2010.
- 2011-4 RSNA 2011-4 Refresher Course on Decision Support in Clinical Practice: Quantitative Image Analysis for Image Retrieval, Decision Support, and Knowledge Discovery. Chicago, November.
- 2013-5 RSNA 2013-5 Correlating Imaging with Human Genomics. Chicago, December.
- 2015-7 RSNA 2015-7 Radiomics Mini Course, From Image to Radiomics: Image Feature Computation and Considerations. Chicago, December
- 2016-7 RSNA 2016-7 Panel Discussion I: Imaging Integration with Cancer Genomics/Proteomics: Methodologies Leveraging the Cancer Imaging Archive

Graduate Student Supervision

*University of Western
Ontario:*

Brian Reid Ph. D. Medical Biophysics 1989-90
thesis area: Microscopic Computed Tomography

Stanford University:

H. Christian Davidson M.S. Medical Informatics* 1991-93
thesis area: Picture Archiving for Radiology

Smadar Shiffman Ph. D. Medical Informatics* 1992-99
thesis area: Segmentation of Blood Vessels for CT Angiography

Philippe G. Lacroute Ph. D. Electrical Engineering 1993-95
thesis area: Fast Volume Rendering Using a Shear-Warp Factorization of the Viewing Transform (3+ reader)

Chye H. Yan Ph. D. Electrical Engineering 1994-98
thesis area: Serial Registration of CT Scans for Quantitative Applications

Shin Y. Yen Ph. D. Electrical Engineering 1994-99
thesis area: Resolution in Spiral CT and Volume Visualization of Medical Images

David Paik	Ph. D.	Medical Informatics	1996-02
thesis area: Virtual Colonoscopy — Visualization, Path Planning, CAD			
Feng Zhuge	Ph. D.	Electrical Engineering	1999-06
thesis area: Quantification of structures in volumetric data			
Burak Gokturk	Ph. D.	Computer Science	1999-02
thesis area: Shape Recognition with Application to Medical Imaging (2 nd reader)			
Burak Acar	Post-doc	Radiology	1999-02
project: CAD of Colonic Polyps, Lung Nodules			
Kenneth Wang	Ph.D.	Mechanical Engineering	1999-01
thesis area: Level Set Methods for Computational Prototyping with Applications to Hemodynamic Modeling (2 nd reader)			
Grant M. Stevens	Ph.D.	Biophysics	1999-00
thesis area: Volumetric Tomographic Imaging (2 nd reader)			
Raghav Raman	Post-doc	Radiology	1999-03
project: Vascular Visualization and Quantitation			
Djamila Holmlund	M.S.	Visiting Student (Sweden)	2001-02
masters thesis: A Study on Radiological Visual Inspections and a User Study Focused on Ergonomic Input Devices.			
Ping Li	M.S.	Computer Science	2001-03
project: Virtual Colonoscopy Supine and Prone Matching, CAD			
Padma Sundaram	Ph.D.	Electrical Engineering	2001-07
thesis area: Virtual Colonoscopy CAD			
Michel Bilello	Post-doc	CS/Radiology	2002-03
project: CAD for Liver Lesions			
Joyoni Dey	post-doc	Radiology	2003-05
project: Interventional Room of the Future; registration, Human-computer interaction			
Markus Kukuk	post-doc	Radiology	2003-08
project: Advanced interventional visualization/registration			
Rong (Cindy) Shi	post-doc	Radiology	2003-07
project: Virtual Colonoscopy			
Shaohua Sun	Ph.D.	Electrical Engineering	2003-07
Thesis area: CAD lung and other cancer			
Anthony Sherbondy	Ph.D.	Electrical Engineering	2002-08
Thesis area: Advanced Visualization, Segmentation, CAD			
Tejas Rakshe	Ph.D.	Electrical Engineering	2003-08
Thesis area: Vascular Visualization			
Joong Ho Won	Ph.D.	Electrical Engineering	2004-09
Thesis area: Vascular Visualization			
Bindi-Pankhudi	M.S.	Computer Science	2004-06

A. J. Jayant Joshi	M.S.	Computer Science	2004-06
David Olsen	Ph.D.	School of Medicine	2006-07
Ushah K. K. Reddi	M.S.	Computer Science	2006-08
David Tran	M.D.	School of Medicine	2006-09
Jiajing Xu	Ph.D.	Electrical Engineering	2009-13
Thesis area: Quantitative Imaging			
Jessica Faruque	Ph.D.	Electrical Engineering	2007-14
Thesis area: Perception of Image Similarity, CBIR Systems			
Sebastian Echegaray	Ph.D.	Electrical Engineering	2013-17
Thesis area: Quantitative Imaging			
Shaimaa Bakr	M.S.	Electrical Engineering	2015-
Thesis area: Quantitative Imaging			
Austin Ray	M.S.	Computer Science	2015-6
Stephen Chu	M.S.	Computer Science	2015-6
Huafei Wang	M.S.	Computer Science	2015-6
Akshay Jaggi	undergrad	Computer Science	2016-

Grants—Current

NIH/NCI R01 CA160251-01 Principal Investigator 9/15/11 –12/31/17 (NCX)
Tools for Linking and Mining Image and Genomic Data in Non-Small Cell Lung Cancer
The goal of this project is to develop tools for creating an integrated database of imaging, clinical, and genomic features in non-small cell lung cancer and to mine it for relationships to prognosis.

NIH/NCI 5T32CA009695 3/01/93 – 2/28/18
Advanced Techniques in Cancer Imaging (Preceptor: 3/01/93-12/31/2011)
Advanced Techniques in Cancer Imaging (Program Director: 1/01/12-2/31/2013)
Stanford Cancer Imaging Training (SCIT) Program (Program Director: 3/01/13-2/28/2018)
The goal of this project is to train radiologists and scientists to contribute the to on-going development of cancer imaging techniques.

NIH/NCI U24 CA180927 Stanford subcontract PI 9/01/14 – 08/31/19
Informatics Tools for Optimized Imaging Biomarkers for Cancer Research & Discovery
(MGH prime)
Goal: To develop a cloud-based infrastructure for on-going quantitative comparison and evaluation of segmentation and characterization tools.

NIH/NCI U01 CA190214 co-Investigator 6/01/15 – 5/31/21
Qualification and Deployment of Imaging Biomarkers of Cancer Treatment Response

Goal: To develop an infrastructure for evaluating imaging biomarkers, repurposing imaging data to develop new image biomarkers, and facilitating the introduction of new imaging biomarkers into clinical trials.

NIH/NCI R01 EB020527 co-Investigator 2/15/15 – 1/31/19
Radiogenomics Framework for Non-Invasive Personalized Medicine
Goal: To build a system for integration of imaging, genomics, and clinical data for prediction of outcomes, response to therapy, and molecular variations of tumors.

NIH/NCI U01 CA187947-A1 Principal Investigator 9/01/15 – 8/31/20
Computing, Optimizing, and Evaluating Quantitative Cancer Imaging Biomarkers
Goal: To develop a cloud-based resource for generating image features of tumors and evaluating their absolute and relative efficacy for predicting dependent variables, such as response, survival, cancer genomics.

SPO 124869 ROYAL PHILIPS co-PI 9/01/16 –11/30/17 (NCX)
Advancing Precision Health
Goal: To develop new care paradigms generally at the intersection of advanced clinical monitoring/imaging, novel diagnostic mechanisms, and predictive/prescriptive analytics.

NIH/NCI U01 CA196405 Site PI (set aside) 9/1/16– 8/31/18
Radiomics and Deep Learning Approaches for Screen Detected Adenocarcinoma
Goal: To develop quantitative methods to classify CT screen detected lung nodules as aggressive vs. indolent.

NIH/NCI R01 CA222512-01 co-Investigator 2/1/18 –1/31/23
Multiregional imaging phenotypes and molecular correlates of aggressive versus indolent breast cancer
Goal: To develop associations linking imaging phenotypes to molecular subtypes with different prognoses.

Grants—Pending or to be Resubmitted

NIH/NCI co-Investigator 07/01/18 – 06/30/23
Deep learning framework for imaging genomics in oncology
PI: Gevaert
Goal: To develop a deep learning approach for predicting molecular profiles from imaging of lung and brain cancer, extendable to other cancers
Submitted: Nov 2017

NIH/NCI co-Investigator 10/1/2018 – 9/30/2023
Radiomic signature of biologically aggressive hepatocellular carcinoma
PI: Kothary & Gevaert
Goal: To develop a radiomic and radiogenomic predictor of microvascular invasion in patients with hepatocellular carcinoma.

Submitted: December 2017

NIH/NCI co-investigator 10/1/2018– 9/30/2023
Imaging and circulating tumor DNA markers to assess early treatment response in lung cancer
PI: Li

Goal: To characterize the imaging phenotype for lung cancer patients and, with the association of circulating tumor cells, to build a predictive model for treatment response.

Submitted: Feb 2018

NIH/NCI co-Investigator
MR imaging biomarkers to predict prognosis of invasive breast cancer
PI: Li

Goal: To develop imaging biomarkers for prognosis of invasive breast cancer
To be resubmitted

Comment [SN1]: Resubmitted in March 2017

NIH/NCI (R33) co-Investigator 9/1/18 – 8/31/23
Imaging and molecular signatures to improve prognostication in early stage lung cancer
PI: Li

Goal: To develop associations linking imaging phenotypes to molecular subtypes with different prognoses.

Submitted: Feb 2018

NIH/NCI co-Investigator
Quantitative imaging biomarkers of early treatment response in NSCLC
PI: Li

Goal: To develop a radiomics profile of predicting early treatment response to radiosurgery for NSCLC.

To be resubmitted

Comment [SN2]: Impact score 15 !! answer in summer

Grants—Completed

1. Medical Research Council of Canada
Visiting Scientist Award 1988-90
2. Natural Sciences and Engineering Research Council of Canada
Visiting Industrial Fellowship 1989-90
1990-91
3. Stanford University Office of Technology Licensing
Multimodality Image Fusion for Stereotaxic Surgical Treatment of Brain Tumors
Principal Investigator 1992-93
4. Whitaker Foundation
Multimodality Image Fusion for Stereotaxic Surgical Treatment of Brain Tumors
Principal Investigator 1993-96

5. Department of Veterans Affairs
Skeletal Changes After Spinal Cord Injury and Cast Immobilization
Co-investigator 1994-96
6. Society of Gastroenterology Research Award
Three-dimensional CT Virtual Colonoscopy
Co-investigator 1995-96
7. National Institutes of Health: 1R01 NS33926-01
Evaluation of Retrospective Image Registration
Co-investigator, Collaboration with Vanderbilt University
8. National Institutes of Health: 1R01 HL50305-01
Three Dimensional CT Angiography
Principal Investigator 1995-98
9. National Institutes of Health: R01 HL46347-04
Noninvasive Myocardial Motion Analysis using Magnetic Resonance Imaging
Co-Investigator 1996-99
10. Acuson Corporation
3D Ultrasound Project
Principal Investigator 1998-01
11. National Institutes of Health: 1P20GM064782-01
Planning the Stanford Center for Biocomputation
Co-Investigator 2001-04
12. National Institutes of Health: 1T32GM063495-01
Predoctoral Graduate Training in Bioinformatics and Computational Biology
Preceptor 2001-04
13. Stanford BIO-X Interdisciplinary Initiative
Imaging and Learning Techniques for the Detection of Anomalous Structures in
3D Medical Images
Co-Investigator 2000-2003
14. National Institutes of Health
Volumetric Analysis of the Aorta and Its Branches
Co-Investigator 1999-2003
15. National Institutes of Health
Center for Advanced MR Technology at Stanford
Investigator 2000-2005
16. National Institutes of Health: RO1 R01CA66785
Magnetic Resonance Imaging of Breast Cancer
Co-Investigator 2005-2005
17. R2 Technology, Inc.
Computer Aided Tracking and Analysis of Pulmonary Nodules Over Time
Principal Investigator 2003-2005
18. NIH/NHLBI RO1 HL67194
Efficient Interpretation of 3D Vascular Image Data
Principal Investigator 2001-2006

19. NIH/NIBIB RO1 EB003524
Improved C-Arm CT for Interventional Procedures
Co-Investigator 2004-2007
20. Siemens Medical Solutions
Interventional Room of the Future
Co-Investigator 2002-2006
21. NSF ACI-205741
Simulation-Based Medical Planning for Cardiovascular Disease
Co-Investigator 2002-2007
22. NIH/NCI R01 CA72023
Three-Dimensional Spiral CT Colonography
Co-Principal Investigator 1996-2009
23. NIH 1 U54 GM072970-01
Physics-based Simulation of Biological Structures
Co-Investigator 2004-2009
24. BIO-X Interdisciplinary Initiatives Program #3
A Novel Transducer Array and Intelligent Software for Automated Detection of
Asymptomatic Carotid Artery Stenosis
Principal Investigator 2006-2009
25. NIH/SBIR 1R43RR02802001A1
Automated Bone Removal for Head and Neck CTA using Dual Energy CT
Stanford Principal Investigator 2009-2010
26. NSF CNS-0619926
MRI: Acquisition of a Hybrid Shared-Memory / Massively-Parallel Commodity
Cluster for Cost-Effective Super-Computing at Stanford.
Investigator 2006-2011
27. NIH R01 CA109089
Improving Radiologist Detection of Lung Nodules with CAD
Co-Principal Investigator 2005-2010
Principal Investigator 2010-2011
28. NIH/R01 CA134720
Co-Investigator 2009-2013
Miniaturized Real-Time Volumetric Ultrasound Imaging System
29. NIH/NCI U01CA142555
Co-Investigator 2010-2016
Computerized Quantitative Imaging Assessment of Tumor Burden
30. NIH/NIBIB R01 EB014955 2013-2017
subcontract PI (Kitware, Inc.)
Accelerating Community-Driven Medical Innovation with VTK

U.S. Patents

1. S.M-H. Song, S.A. Napel and N.J. Pelc: Flow measurement of incompressible fluid using divergence free constraint. (5,309,100) issued 5/3/1994.

2. T.S. Sumanaweera, S. Napel, G.H. Glover, and J.R. Adler: Method for correcting magnetic field inhomogeneity distortion in MRI images having disconnected regions (5,485,085) issued 1/16/1996.
3. C.H. Yan, R.T. Whalen, S. Napel: Method for Beam Hardening Correction in Quantitative Computed X-ray Tomography (6,324,240) issued 11/27/2001.
4. S. Shiffman, S. Napel: Object Segregation in Images (6,424,732) issued 6/23/2002.
5. J. A. Hossack, T. S. Sumanaweera, A. He, S. Napel, R. B. Jeffrey, Jr., D. Paik: Medical Diagnostic Ultrasound System and Method for Flow Analysis (6,503,202) issued 1/7/2003.
6. D.S. Paik, G.D. Rubin, C.F. Beaulieu, S. Napel, R.B. Jeffrey Jr.: Method For Detecting Shapes In Medical Images, (7,043,064), issued 5/9/2006.
7. D.S. Paik, S. Napel, G.D. Rubin, C.F. Beaulieu: Method For Characterizing Shapes In Medical Images (7,043,064 - Amendment), issued 5/9/2006.
8. R. Raman, S. Napel, G.D. Rubin: Curved Slab Maximum Intensity Projections, (7,170,517), issued 1/30/2007.
9. B. Acar, C.F. Beaulieu, S. Napel, R.B. Jeffrey, Jr., D.S. Paik: Method for Matching and Registering Medical Image Data (7,224,827), issued 5/29/2007.
10. B. Acar, C.F. Beaulieu, S. Napel, R.B. Jeffrey, Jr., D.S. Paik, S.B. Gokturk, C. Tomasi: Method for Detecting and Classifying a Structure of Interest in Medical Images, (7,272,251), issued 9/18/2007.
11. R. Raman, S. Napel, G.D. Rubin: Quantification of Aortoiliac Endoluminal Irregularity, (7,324,675), 1/29/2008.
12. R. Raman, B. Raman, S. Napel, G.D. Rubin: Quantification Method of Vessel Calcification (7,330,576), issued 2/12/2008.
13. S. B. Gokturk, C. Tomasi, B. Acar, C.F. Beaulieu, S. Napel, D. S. Paik: Three-Dimensional Pattern Recognition Method to Detect Shapes in Medical Images, (7,346,209), issued 3/18/2008.
14. R. Raman, S. Napel, G.D. Rubin: Quantification of Vascular Irregularity, (7,379,574), issued 5/27/2008.
15. R. Raman, S. Napel, G.D. Rubin: Curved Slab Maximum Intensity Projections, (7,471,814), issued 12/30/2008.
16. D.S. Paik, P. Sundaram, C.F. Beaulieu, S. Napel: Polyp Identification Through Subtraction of Models Of Medical Images, (7,616,800) Issued 11/10/2009.
17. S. Sun, S. Napel: Registration System and Method for Tracking Lung Nodules in Medical Images, (7,657,073) issued 2/2/2010.
18. B. Acar, E. Konukoglu, C. F. Beaulieu, S. Napel, D. S. Paik: Heat Diffusion Based Detection Of Structures Of Interest In Medical Images, (7,729, 739) issued 6/1/2010.
19. D. W. Lau, V. Yeluri, J. Hellinger, D. S. Paik, S. Napel, T. Gentles. "System and Method for Linking Current and Previous Images Based on Anatomy," (7,747,050) issued 6/29/2010.
20. S. Sun, F. Zhuge, S. Napel: Learning-Enhanced Simulated Annealing, (7,840,504) issued 11/23/2010.
21. P. Sundaram, A. Zomorodian, C. F. Beaulieu, S. Napel: Polyp Detection Using Smoothed Shape Operators," (8,055,047) issued 11/8/2011.

22. M. Kukuk, S. Napel: "System For Three-Dimensional Medical Instrument Navigation," (8,073,221) issued 12/6/2011.
23. M. Kukuk, S. Napel: "Rotational stereo roadmapping," (8,233,962) issued 7/31/2012.
24. M. Kukuk, S. Napel: "Apparatus and Method for Aligning a Light Pointer With a Medical Interventional Device Trajectory," (8,265,731) issued 9/11/2012.
25. E. J. Alexander, T. P. Andriacchi, P. Lang, S. A. Napel: Assessing the condition of a joint and preventing damage (8,265,730) issued 9/11/2012.
26. E. J. Alexander, T. P. Andriacchi, P. Lang, S. A. Napel: Assessing the condition of a joint and preventing damage (8,862,202) issued 10/14/2014.
27. M. Kukuk, S. Napel: "Needle Guidance with a Dual-Headed Laser," (9,370,627) issued 6/21/2016.
28. R. J. Gillies, S. A. Eschrich, R.A. Gatenby, P. Lambin, A. L.A.J. Dekker, S. A. Napel, S. K. Plevritis, D. L. Rubin, "Systems, Methods And Devices For Analyzing Quantitative Information Obtained From Radiological Images," (9,721,340) issued 8/1/2017.
29. R. Raman, B. Raman, S. Napel, G.D. Rubin: Bone Removal in Medical Images, PROV/S02-275/US filed Dec. 4, 2003.
30. E. Kokuloglu, B. Acar, S. Napel, C.F. Beaulieu: Polyp Enhancing Level Sets, PROV/S04-296/US Filed Feb. 4, 2005.
31. B. Raman, R. Raman, G.D. Rubin, S. Napel: "Method to identify arterial and venous vessels," (Application 20050256400 filed 11/17/2005).
32. S. Sun, S. Napel: A Semi-Rigid Method for Tracking Lung Nodules in Medical Images, PROV/S05-331/US Filed Nov. 23, 2005.
33. D. W. Lau, V. Yeluri, Y. Samara, D. S. Paik, R. J. Herfkens, S. Napel, T. Gentles, A. Vassa. "System and Method for Automatic Post Processing Image Generation," (Application 20070076929 filed 4/5/2007).
34. R. B. Jeffrey Jr., B. T. Khuri-Yakub, S. A. Napel, O. Oralkan: Automated Detection of Asymptomatic Carotid Stenosis, 12/380889 US filed March 3, 2009.
35. S. Napel, "Paired Dual Energy CT datasets-License Agreement," OTL Docket 11-040, 2/1/2010.
36. C. F. Beaulieu, S. Srivastava, S. Napel, W Brown, "Digital Anatomical Library Project," OTL Docket 11-073, 2/24/2011.

Peer-reviewed Publications

1. W.D. McCallum, C.S. Williams, S. Napel, R.E. Daigle, "Fetal Blood Velocity Waveforms." *American Journal of Obstetrics and Gynecology*, **132**: 425-429, 1978.
2. W. Berninger, L. Axel, D. Norman, S. Napel, R. Redington, "Functional Imaging of the Brain Using Computed Tomography." *Radiology*, **138**: 711-716, 1980.
3. H.G. Ringertz, C.G. Skioldebrand, H. Refsum, J.V. Tyberg, S.A. Napel and M.J. Lipton, "A Comparison Between the Information in Gated and Non-gated Cardiac CT Images." *Journal of Computer Assisted Tomography*, **6**:933-938, 1982.

4. R.J. Herfkens, L. Axel, M.J. Lipton, S. Napel, W. Berninger, R. Redington, "Measurement of Cardiac Output by Transmission Computed Tomography." *Invest Radiol*, **17**(6):550-553, 1982.
5. K.R. Peschmann, S.A. Napel, J.L. Couch, R.E. Rand, R. Alei, S.M. Ackelsberg, R.G. Gould, D.P. Boyd, "High Speed Computed Tomography, System and Performance." *Applied Optics*, **24**(23):4052, 1985.
6. S. Napel, B. Rutt, P. Pflugfelder, "3-D Images of the Coronary Arteries from UltraFast CT — Method and Comparison with 2-D Arteriography." *American Journal of Cardiac Imaging*, **4**(3):237-243, 1989.
7. S. Napel, S. Dunne, B.K. Rutt, "Fast Fourier Projection for MR Angiography." *Magnetic Resonance in Medicine*, **19**, 393-405, 1991.
8. S. Singh, B. K. Rutt, S. Napel, "Projection Presaturation II. Single-Shot Localization of Multiple Regions of Interest." *Journal of Magnetic Resonance*, **90**:313-329, 1990.
9. B. K. Rutt, S. Napel, "Magnetic Resonance Techniques for Blood Flow Measurement and Vascular Imaging." *Journal of the Canadian Association of Radiologists* **42**(1):21-30, 1991.
10. S. Dunne, S. Napel, B.K. Rutt, "Interactive Display of Volumetric Data by Fast Fourier Projection." *Computerized Medical Imaging and Graphics*, **16**:237-251, 1992.
11. S. Napel, D.H. Lee, R. Frayne, B.K. Rutt, "Visualizing Flow in 3D Using Simulated Streamlines and 3D Phase Contrast MR." *Journal of Magnetic Resonance Imaging*, **2**:143-153, 1992.
12. S. Napel, M.P. Marks, G.D. Rubin, R.B. Jeffrey, Jr., M.D. Dake, D.R. Enzmann, C.H. McDonnell, S.M-H. Song, "CT Angiography Using Spiral CT and Maximum Intensity Projections." *Radiology*, **185**(2):607-610, 1992. PMID: 1410382.
13. G.D. Rubin, M.D. Dake, S. Napel, C.H. McDonnell, R.B. Jeffrey, Jr., "Three-dimensional Spiral CT Angiography of the Abdomen: Initial Clinical Experience." *Radiology*, **186**(1):147-152, 1993.
14. M.P. Marks, S.A. Napel, J.E. Jordan, D.R. Enzmann, "Diagnosis of Carotid Artery Disease: Preliminary Experience with Maximum-Intensity-Projection Spiral CT Angiography." *American Journal of Neuroradiology*, **160**(6):1267-71, 1993.
15. S.M-H. Song, S.A. Napel, N.J. Pelc, G.H. Glover, "Noise Reduction of 3-D Phase Contrast MR Velocity Measurements." *Journal of Magnetic Resonance Imaging*, **3**:587-596, 1993.
16. G.D. Rubin, P.J. Walker, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., C.H. McDonnell, D. C. Miller, R.S. Mitchell, "3D Spiral CT Angiography: An Alternative Imaging Modality for the Abdominal Aorta and its Branches." *Journal of Vascular Surgery*, **18**:656-65, 1993.
17. S. Napel, G.D. Rubin, R.B. Jeffrey, Jr., "STS-MIP: A New Reconstruction Technique for CT of the Chest." *Journal of Computer Assisted Tomography*, **17**(5):832-838, 1993. PMID: 8370848.
18. G.D. Rubin, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., C. H. McDonnell, F.G. Sommer, L. Wexler, D.M. Williams, "Spiral CT of Renal Artery Stenosis: Comparison of Three-dimensional Rendering Techniques." *Radiology*, **190**:181-189, 1994.

19. S.M-H. Song, D.P. Boyd, R.M. Leahy, Bruce H. Brundage, S.A. Napel, "Determining Cardiac Velocity Fields and Intraventricular Pressure Distribution from a Sequence of Ultrafast CT Cardiac Images." *IEEE Transactions on Medical Imaging*, **13**(2):386-397, 1994.
20. T.S. Sumanaweera, G.H. Glover, S. M-H. Song, J.R. Adler, S. Napel, "Quantifying MRI Geometric Distortion in Tissue." *Magnetic Resonance in Medicine*, **31**(1):40-47, 1994.
21. S.M-H. Song, S.A. Napel, N.J. Pelc, "Phase Unwrapping of MR Phase Images using Poisson Equation." *IEEE Transactions on Image Processing*, **4**(5):667-676, 1995.
22. G.D. Rubin, R.J. Herfkens, N.J. Pelc, T.K. Foo, S.A. Napel, A. Shimakawa, R.M. Steiner, C.J. Bergin, "Single Breath-Hold Pulmonary MR Angiography: Optimization and Comparison of Three Imaging Strategies." *Investigative Radiology* **29**:766-772, 1994.
23. T.S. Sumanaweera, J.R. Adler Jr., S. Napel, G.H. Glover, "Characterization of Spatial Distortion in MRI and its Implications for Stereotactic Surgery." *Neurosurgery*, **35**(4):696-704 October 1994.
24. D. Katz, M.P. Marks, S. Napel, P. Bracci, S. Roberts, "Evaluation of the Circle of Willis with Spiral CT Angiography, MR Angiography and Conventional Angiography." *Radiology*, **195**(2):445-449, 1995.
25. P.F. Hemler, T.S. Sumanaweera, P.A. van den Elsen, S. Napel, J.R. Adler, "A System for Multimodality Image Fusion." *Proceedings IEEE Seventh Symposium on Computer-Based Medical Systems*, pp. 335-340, 1995.
26. T.S. Sumanaweera, G.H. Glover, P.F. Hemler, P.A. van den Elsen, D. Martin, J.R. Adler Jr., S. Napel, "MR Geometric Distortion Correction for Improved Frame-based Stereotaxic Target Localization Accuracy." *Magnetic Resonance in Medicine*, **34**:106-113, 1995.
27. P.F. Hemler, T.S. Sumanaweera, P.A. van den Elsen, S. Napel, J.R. Adler, "A Versatile System for Multimodality Image Fusion." *Journal of Image Guided Surgery*, **1**(1), 1995. PMID: 9079425.
28. F.G. Sommer, R.B. Jeffrey, Jr., G.D. Rubin, S. Napel, S.A. Rimmer, J. Benford, P.M. Harter, "Detection of Ureteral Calculi in Patients with Suspected Renal Colic: Value of Reformatted Non-contrast Helical CT," *American Journal of Roentgenology*, **165**:509-513, 1995.
29. P.F. Hemler, S. Napel, T.S. Sumanaweera, R. Pichumani, P.A. van den Elsen, D. Martin, J. Drace, I. Perakash I, J.R. Adler, "Registration Error Quantification of a Surface-based Multimodality Image Fusion System." *Medical Physics*. **22**(7):1049-1056, July 1995. PMID: 7565379.
30. T.S. Sumanaweera, J.R. Adler, G.H. Glover, P.F. Hemler, P.A. van den Elsen, D. Martin, S. Napel, "A Method for Correcting MR Distortion for Frame-Based Stereotactic Surgery with Preliminary Results." *Journal of Image Guided Surgery*, **1**:151-157, 1995.
31. G.D. Rubin, C.F. Beaulieu, V. Argiro, H. Ringl, A.M. Norbash, J.D. Feller, M.D. Dake, R.B. Jeffrey, Jr., S. Napel. "Perspective Volume Rendering of CT and MR Images: Applications for Endoscopic Viewing." *Radiology*, **199**(2):321-330, 1996. PMID: 8668772.

32. G.D. Rubin, S. Napel, A.N. Leung. "Volumetric Analysis of Volumetric Data: Achieving a Paradigm Shift." *Editorial, Radiology*, **200**(2):312-317, 1996.
33. K.C.P. Li, L.R. Pelc, S. Napel, M.L. Goris, D.T. Lin, C.K. Song, A.N. Leung, G.D. Rubin, M.D. Hollett, D.P. Harris. "MRI of pulmonary embolism using Gd-DTPA-polyethylene glycol polymers enhanced 3-D fast gradient echo technique in a canine model." *Magnetic Resonance Imaging*, **15**(5):543-550, 1997.
34. G.D. Rubin, S. Napel, "Helical CT Angiography of Renal Artery Stenosis," Letter to the Editor, *American Journal of Roentgenology*, **168**(1):1109, 1997.
35. S. Gilani, A.M. Norbash, H. Ringl, G.D. Rubin, S. Napel, D.J. Terris, "Virtual Endoscopy of the Paranasal Sinuses using Perspective Volume Rendered Helical Sinus Computed Tomography." *Laryngoscope*, **107**(1):25-9, 1997.
36. E.W. Olcott, F.G. Sommer, S. Napel, "Three-dimensional Spiral CT: Value for Linear Sizing, Volumetric Sizing, and Detection of Renal Calculi." *Radiology*, **204**(1):19-26, 1997.
37. S.Y. Yen, G.D. Rubin, S. Napel, "Sliding Thin Visualization of CT and MR Angiograms." *RSNA-EJ* (<http://ej.rsna.org>), **1**:1997.
38. J. West, J.M. Fitzpatrick, M.Y. Wang, B.M. Dawant, C.R. Maurer, Jr., R.M. Kessler, R.J. Maciunas, C. Barrilot, D. Lemoine, A. Collignon, F. Maes, P. Suetens, D. Vandermeulen, P.A. van den Elsen, S. Napel, T.S. Sumanaweera, B. Harkness, P.F. Hemler, D.L.Hill, D.J. Hawkes, C. Studholme, J.B. Maintz, M.A. Viergever, G. Malandain, R.P. Woods, et al., "Comparison and Evaluation of Retrospective Intermodality Brain Image Registration Techniques." *J Comput Assist Tomogr*, **21**(4):554-566, 1997. PMID: 9216759.
39. C.H. Yan, R.T. Whalen, G.S. Beaupre, T.S. Sumanaweera, S.Y. Yen, S. Napel, "A New Frame-based Registration Algorithm." *Medical Physics* **25**(1):121-8, 1998. PMID: 9472834.
40. G.D. Rubin, D.S. Paik, P.C. Johnson, S. Napel, "Measurement of the Aorta and its Branches using Helical CT," *Radiology* **206**:823-829, 1998.
41. D.S. Paik, C.F. Beaulieu, R.B. Jeffrey, Jr., G.D. Rubin, S. Napel, "Automated Flight Path Planning for Virtual Endoscopy." *Medical Physics* **25**(5):629-637, 1998.
42. C.F. Beaulieu, S. Napel, B.L. Daniel, I.Y. Chen, G.D. Rubin, I.M. Johnstone, R.B. Jeffrey, Jr., "Detection of Colonic Polyps in a Phantom Model: Implications for Virtual Colonoscopy Data Acquisition," *JCAT*, **22**(4):656-663, 1998.
43. S.F. Sheikh, D.S. Paik, C.F. Beaulieu, G. D. Rubin, R.B. Jeffrey, Jr., S. Napel, "Wide-Angle Virtual Endoscopy using Multiple-View Rendering: The Virtual Cockpit," *RSNA-EJ* (<http://ej.rsna.org>), **2**:1998.
44. S.Y. Yen, G.D. Rubin, C.H. Yan, S. Napel, "Longitudinal Aliasing in Spiral CT." *IEEE Transactions on Medical Imaging*, **18**(1):43-58, November 1998.
45. C.H. Yan, R.T. Whalen, G.S. Beaupre, S.Y. Yen, S. Napel, "Modeling of Polychromatic Attenuation using Computed Tomography Reconstructed Images." *Medical Physics* **26**(4):631-642, 1999.
46. E.L. Yuh, R.B. Jeffrey, Jr., R.L. Birdwell, B.H. Chen, S. Napel, "Virtual Endoscopy Using Perspective Volume-Rendered Three-Dimensional Sonographic Data: Technique and Clinical Applications," *AJR* **172**:1193-1197, 1999.

47. C.A. Karadi, C.F. Beaulieu, R.B. Jeffrey, Jr., D.S. Paik, S. Napel, "Visualization Modes for CT Colonography, Part I: Synthesis and Insertion of Polyps into Patient CT Data," *Radiology* **212**(1):195-201, 1999.
48. C.F. Beaulieu, R.B. Jeffrey, Jr., C.A. Karadi, D.S. Paik, S. Napel, "Visualization Modes for CT Colonography, Part II: Blinded Comparison of Axial CT, Virtual Endoscopy, and Panoramic View Volume Rendering," *Radiology* **212**(1):203-212, 1999.
49. C.H. Yan, R.T. Whalen, G.S. Beaupre, S.Y. Yen, S. Napel, "Reconstruction Algorithm for Polychromatic CT Imaging: Application to Beam Hardening Correction." *IEEE Transactions on Medical Imaging*, **19**(1):1-11, 2000.
50. M.T. Alley, S. Napel, Y. Amano, D.S. Paik, R.Y. Shifrin, A. Shimakawa, N.J. Pelc, R.J. Herfkens, "Fast 3D Cardiac Cine Imaging," *J. Magn. Reson. Imaging*, **9**(5): 751-755, 1999.
51. S.Y. Yen, G.D. Rubin, S. Napel, "Spatially-varying Longitudinal Aliasing and Resolution in Spiral CT," *Medical Physics* **26**(12): 2617-2625, 1999.
52. G. D. Rubin, M. C. Shiau, A. J. Schmidt, D. Fleischmann, L. Logan, A. N. Leung, R. B. Jeffrey, Jr., S. Napel, "CT Angiography: Historical Perspective and New State-of-the-Art Using Multi-Detector-row Helical CT," *J Comput Assist Tomogr* **23** (Suppl. 1):S83-S90, 1999.
53. D.S. Paik, C.F. Beaulieu, R.B. Jeffrey, Jr., C.A. Karadi, S. Napel, "Visualization Modes for CT Colonography using Cylindrical and Planar Map Projections." *J Comput Assist Tomogr* **24**(2):179-88, 2000.
54. G.D. Rubin, M.D. Armerding, M.D. Dake, S. Napel "Cost Identification Of Abdominal Aortic Aneurysm Imaging By Using Time And Motion Analyses," *Radiology* **215**(1):63-70, 2000.
55. D. Fleischmann, G.D. Rubin, D.S. Paik, S.Y. Yen, P.R. Hilfiker, C.F. Beaulieu, S. Napel, "Helical Stair-Step Artifacts in Single-Slice versus Multi-Slice CT," *Radiology* **216**(1):185-96, 2000.
56. R. M. Summers, C. F. Beaulieu, L. M. Pusanik, J. D. Malley, R. B. Jeffrey, Jr., D. I. Glazer, S. Napel, "Automated Polyp Detector for CT Colonography: Feasibility Study," *Radiology* **216**(1):284-90, 2000. PMID: 10887263.
57. S. Shiffman, G.D. Rubin, S. Napel, "Medical Image Segmentation Using Analysis of Isolabel Contour Maps," *IEEE Transactions on Medical Imaging*, **19**(11):1064-74, 2000.
58. M. Tillich, G. D. Rubin, B. B. Hill, D. S. Paik, K. Petz, S. Napel, C. K. Zarins, "Prediction of aortoiliac stent-graft length: Comparison of measurement methods," *Radiology* **220**(2):475-483, 2001.
59. S. B. Gokturk, C. Tomasi, B. Acar, C. F. Beaulieu, D. S. Paik, R. B. Jeffrey, Jr., J. Yee, S. Napel, "A Statistical 3D Pattern Processing Method For Computer-aided Detection of Polyps in CT Colonoscopy," *IEEE Transactions on Medical Imaging*, **20**(12):1251-1260, 2001. PMID: 11811825.
60. S. Napel, H. Xu, D. S. Paik, B. A. Ross, T. S. Sumanaweera, J. Hossack, R. B. Jeffrey, Jr., "Carotid Disease: Automated Analysis with Cardiac-gated Three-dimensional US Technique and Preliminary Results," *Radiology* **222**(2):560-3, 2002. PMID: 11818628.

61. P. W. Hung, D. S. Paik, S. Napel, J. Yee, R. B. Jeffrey, Jr., A. Steinauer-Gebauer, J. Min, A. Jathavedam, C. F. Beaulieu, "Quantification of Distention in CT Colonography: Development and Validation of Three Computer Algorithms," *Radiology*. **222**(2):543-54, 2002.
62. R. Raman, S. Napel, C. F. Beaulieu, E. S. Bain, R. B. Jeffrey Jr., G. D. Rubin, "Automated Generation of Curved Planar Reformations from Volume Data: Method and Evaluation," *Radiology*, **223** (1):275-80, 2002.
63. J.A. Hossack, T.S. Sumanaweera, S. Napel, J.S. Ha, "Quantitative 3-D Diagnostic Ultrasound Imaging Using a Modified Transducer Array and an Automated Image Tracking Technique," *IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control*, **49**(8):1029-1038, 2002.
64. B. Acar, C. F. Beaulieu, S. B. Gokturk, C. Tomasi, D. S. Paik, R. B. Jeffrey, Jr., J. Yee, S. Napel, "Edge Displacement Field Based-Classification for Improved Detection of Polyps in CT Colonography," *IEEE Transactions on Medical Imaging*, **21**(12):1461-7, 2002. PMID: 12588030.
65. R. Raman, S. Napel, G.D. Rubin, "Curved Slab Maximum Intensity Projections: Method and Evaluation," *Radiology*, **229**(1): 255-60, 2003.
66. S. Shiffman, G. D. Rubin, P. Schraedley-Desmond, S. Napel, "Semiautomated Segmentation of Blood Vessels using Ellipse Overlap Criteria: Method and Comparison to Manual Editing," *Medical Physics* **30**(10): 2572-83, 2003.
67. P. Sundaram, C. F. Beaulieu, D. S. Paik, P. Schraedley-Desmond, S. Napel, "CT Colonography: Does improved z resolution help computer-aided polyp detection?" *Medical Physics* **30**(10): 2663-74, 2003.
68. D. S. Paik, C. F. Beaulieu, G. D. Rubin, B. Acar, R. B. Jeffrey, Jr., J. Yee, J. Dey, S. Napel, "Surface Normal Overlap: A Computer-Aided Detection Algorithm with Application to Colonic Polyps and Lung Nodules in Helical CT " *IEEE Transactions on Medical Imaging* **23**(6):661-675, 2004. PMID: 15191141.
69. A. Mani, S. Napel, D. S. Paik, R. B. Jeffrey, Jr., J. Yee, E. W. Olcott, R. Prokesch, M. Davila, P. Schraedley-Desmond, C. F. Beaulieu, "CT Colonography: Feasibility of Computer-Aided Polyp Detection in a "First Reader" Paradigm," *Journal of Computer-assisted Tomography*, **28**:318-326, 2004. PMID: 15100534.
70. P. Li, S. Napel, B. Acar, D.S. Paik, R. B. Jeffrey, Jr., C.F. Beaulieu, "Automatic Registration of Colonic Polyps Between Supine and Prone Scans in CT Colonography," *Medical Physics* **31**(10):2912-23, 2004. PMID: 15543800.
71. M. Bilello, S. B. Gokturk, T. Desser, S. Napel, R. B. Jeffrey, C. F. Beaulieu, "Automatic Detection and Classification of Hypodense Hepatic Lesions on Contrast-Enhanced Venous-Phase CT," *Medical Physics* **31**(9):2584-93, 2004.
72. G. D. Rubin, J. Lyo, D. S. Paik, A. Sherbondy, L. Chow, A. N. Leung, R. Mindelzun, S. E. Zinck, D. P. Naidich, S. Napel, "Pulmonary Nodules in MDCT Scans: Impact of Computer-aided Detection," *Radiology* **234**(1):274-273, 2005. PMID: 15537839.
73. A. J. Sherbondy, D. Holmlund, P. K. Schraedley, G.D. Rubin, T. Winograd, S. Napel, "Alternative Input Devices for Efficient Navigation of Large CTA Studies," *Radiology* **234**(2):391-398, 2005.

74. F. Zhuge, S. Sun, G.D. Rubin, S. Napel, "An Abdominal Aortic Aneurysm Segmentation Method: Level Set with Region and Statistical Information," *Medical Physics* **33**(5):1440-1453, 2006.
75. R. Shi, P. Schraedley-Desmond, S. Napel, E. Olcott, R. B. Jeffrey, Jr., J. Yee, M. E. Zalis, D. Margolis, D. S. Paik, A. Sherbondy, P. Sundaram, C. F. Beaulieu, "Computer Aided Polyp Detection in CT Colonography: Influence of 3D Viewing and Polyp Candidate Features on Interpretation," *Radiology* **239**(3):768-776, 2006.
76. A. Quon, S. Napel, C. F. Beaulieu, S. S. Gambhir, "'Flying Through" and "Flying Around" a PET/CT Scan: Pilot Study And Development Of 3D Integrated 18F-FDG PET/CT Scanning for Virtual Bronchoscopy And Colonoscopy," *J Nucl Med* **47**:1081-1087, 2006. *Winner of "Image of the Year" (2006) and "Best Clinical Article" (2007), Society of Nuclear Medicine.*
77. J. Dey, S. Napel. "Targeted 2D/3D Registration using Ray Normalization and a Hybrid Optimizer," *Medical Physics* **33**(12):4730-4738, 2006. PMID: 17278825.
78. S. Sun, G. D. Rubin, D.S. Paik, F. Zhuge, R. Steiner, S. Napel, "Registration of Lung Nodules using a Semi-Rigid Model: Method and Preliminary Results," *Medical Physics* **34**(2):613-626, 2007. PMID: 17388179.
79. T. Rakshe, D. Fleischmann, J. Rosenberg, J. Roos, S. Napel, "Knowledge-Based Interpolation of Curves: Application to Femoropopliteal Arterial Centerline," *Medical Image Analysis* **11**(2):157-68, 2007.
80. R. Shi, S. Napel, J.K. Rosenberg, L.K. Shin, C.B. Freeman, M.A. Mogensen, A.J. Joshi, P. Pankhudi, C.F. Beaulieu, "Transparent Rendering of Intraluminal Contrast for 3D Polyp Visualization at CT Colonography," *J Comput Assist Tomogr.* **31**(5):773-9, 2007.
81. D. N. Tran, D. Fleischmann, T. Rakshe, J. E. Roos, J. Rosenberg, M. Straka, S. Napel, "Femoropopliteal Artery Centerline Interpolation using Contralateral Shape," *Medical Physics* **34**(9):3428-35, 2007.
82. F. Zhuge, S. Sun, G.D. Rubin, S. Napel, "A Directional Distance Aided Method for Medical Image Segmentation," *Medical Physics* **34**(12):4562-76, 2007. PMID: 18196822
83. E. Konukoglu, B. Acar, D.S. Paik, C.F. Beaulieu, S. Napel, "PELS: Polyp Enhancing Level-Set Evolution of the Colon Wall," *IEEE Transactions on Medical Imaging* **26**(12): 1640-1656, 2007.
84. S. Sun, F. Zhuge, J. Rosenberg, G. D. Rubin, S. Napel, "Learning-Enhanced Simulated Annealing: Method, Evaluation, and Application to Lung Nodule Registration," *International Journal of Applied Intelligence*, **28**(1):83-99, 2008.
85. P. Sundaram, A. J. Zamorodian, C. F. Beaulieu, S. Napel, "Colon Polyp Detection using Smoothed Shape Operators: Preliminary Results," *Medical Image Analysis* **12**(2):99-199, 2008. PMID: 17910934.
86. R. Raman, B. Raman, S. Napel, G. D. Rubin, "Improved Speed of Bone Removal in CT Angiography (CTA) Using Automated Targeted Morphological Separation: Method and Evaluation in CTA of Lower Extremity Occlusive Disease," *J Comput Assist Tomogr.* **32**(3):485-91, 2008. PMID: 18520561

87. R. Raman, B. Raman, S. Napel, G. D. Rubin, "Semi-automated Quantification of the Mass and Distribution of Vascular Calcification using Multidetector CT: Method and Evaluation," *Radiology* **247**(1):241-50, 2008. PMID: 18292472
88. T. Rakshe, D. Fleischmann, J. Rosenberg, J. Roos, M. Straka, S. Napel, "An Improved Algorithm for Femoropopliteal Artery Centerline Restoration using Prior Knowledge of Shapes and Image Space Data," *Medical Physics*, **35**(7):3372-82 2008. PMCID: PMC2673553
89. A. J. Sherbondy, R. F. Dougherty, M. Ben-Shachar, S-H Cheung, S. Napel, B. A. Wandell, "ConTrack: Finding the Most Likely Pathways Between Brain Regions," *Journal of Vision*, **8**(9):15 (<http://journalofvision.org/8/9/15/>), 2008. PMID 18831651; PMCID: PMC2696074.
90. J. Pu, J. Roos, C. A. Yi, S. Napel, G. D. Rubin, D. S. Paik, "Adaptive border marching algorithm: Automatic lung segmentation on chest CT images," *Comput Med Imaging Graph*, **32**:452-462, 2008. PMID: 18515044. PMCID: PMC2536655.
91. A. J. Sherbondy, R. F. Dougherty, S. Napel, B. A. Wandell, "Identifying the Human Optic Radiation Using Diffusion Imaging And Fiber Tractography," *Journal of Vision* **8**(10):12, <http://journalofvision.org/8/10/12>, 2008. 19146354, PMCID: PMC2759943.
92. D. N. Tran, M. Straka, J. E. Roos, S. Napel, D. Fleischmann, "Dual-Energy CT Identification of Iodine and Calcium: Experimental Results and Implications for Lower Extremity CT Angiography," *Acad Radiol.* **16**(2), 160-71, 2009. PMID: 19124101
93. J. E. Roos, T. Rakshe, D. N. Tran, J. Rosenberg, M. Straka, T. El-Helw, M.C. Sofilos, S. Napel, D. Fleischmann, "Lower extremity CT Angiography (CTA): Initial Evaluation of a Knowledge-based Centerline Estimation Algorithm for Femoro-Popliteal Artery (FPA) Occlusions," *Acad. Radiol.* **16**(6), 646-53, 2009. PMID: 19427978
94. J. E. Roos, D. S. Paik, D. A. Olsen, E. G. Liu, L. C. Chow, A. N. Leung, R. Mindelzun, K.R. Choudhury, S. Napel, G. D. Rubin, "Computer-aided detection (CAD) of lung nodules on CT: Radiologist performance and reading time with incremental CAD assistance," *Eur Radiol.* **20**(3), 549-57, 2010. PMID: 19760237, PMCID: PMC4669889.
95. J.H. Won, J. Rosenberg, G. D. Rubin, S. Napel, "Uncluttered Single-Image Visualization of the Abdominal Aortic Vessel Tree: Method and Evaluation," *Medical Physics* **36**(11):5245-5260, 2009. PMID: 19994535. PMCID: PMC2774353
96. K.R. Choudhury, D.S. Paik, C.A. Yi, S. Napel, J. Roos, G.D. Rubin, "Assessing Operating Characteristics Of CAD Algorithms In The Absence Of A Gold Standard," *Medical Physics*, **37**(4):1788-1795, 2010. PMID: 20443501.
97. S. Napel, C.F. Beaulieu, C. Rodriguez, J. Cui, J. Xu, A. Gupta, D. Korenblum, H. Greenspan, Y. Ma, D.L. Rubin, "Automated Retrieval of CT Images of Liver Lesions Based on Image Similarity: Method and Preliminary Results," *Radiology*, **256**(1):243-252, 2010. PMID: 20505065. PMCID: PMC2897688
98. B. Raman, R. Raman, S. Napel, G. D. Rubin, "Automated Quantification of Aortoortic and Aortoiliac Angulation for CT Angiography (CTA) of Abdominal

- Aortic Aneurysms (AAA) Prior to Endovascular Repair," *J Vasc Interv Radiol* 21(11):1746-50, 2010. PMID: 20932776. PMCID: PMC2966507
99. C.B. Akgul, D.L. Rubin, S. Napel, C.F. Beaulieu, H. Greenspan, B. Acar, "Content Based Image Retrieval in Radiology: Current Status and Future Directions," *J Digit Imaging* 24(2):208-22, 2011. PMID: 20376525. PMCID: PMC3056970.
 100. D.L. Rubin, S. Napel, "Imaging Informatics: Toward Capturing and Processing Semantic Information in Radiology Images," *Yearb Med Inform*, 34-42, 2010. PMID: 20938568.
 101. D. Korenblum, D.L. Rubin, S. Napel, C. Rodriguez, C.F. Beaulieu, "Managing Biomedical Image Metadata for Search and Retrieval of Similar Images," *J Digit Imaging* 24(4):739-48, 2011. PMID: 20844917. PMCID: PMC3138941.
 102. B. Raman, R. Raman, G. D. Rubin, S. Napel, "Automated Tracing of the Adventitial Contour of Aortoiliac and Peripheral Arterial Walls in CT Angiography (CTA) to Allow Calculation of Non- Calcified Plaque Burden," *J Digit Imaging*. 24(6):1078-86, 2011. PMID: 21547519. PMCID: PMC3222556
 103. J. Xu, H. Greenspan, S. Napel, D. L. Rubin, "Automated Temporal Tracking and Segmentation of Lymphoma on serial CT Examinations," *Med Phys*. 38(11):5879, 2011. PMID: 22047352. PMCID: PMC3210189
 104. J. Xu, J.S. Faruque, C.F. Beaulieu, D.L. Rubin, S. Napel, "A Comprehensive Descriptor of Shape: Method and Application to Content-Based Retrieval of Similar Appearing Lesions in Medical Images," *J Digit Imaging*. 25(1):121-8, 2012. PMID: 21547518. PMCID: PMC3264721.
 105. M. Tall, K. Roy Choudhury, S. Napel, J. E. Roos, G. D. Rubin, "Accuracy of a Remote Eye Tracker for Radiologic Observer Studies: Effects of Calibration and Recording Environment," *Acad Radiol*. 19(2):196-202, 2012. PMID: 22212422.
 106. O. Gevaert, J. Xu, C. D. Hoang, A. N. C. Leung, Y. Xu, A. Quon, D. L. Rubin, S. Napel, S. K. Plevritis, "Non-small cell lung cancer: identifying prognostic imaging biomarkers by leveraging public gene expression microarray data--methods and preliminary results," *Radiology*, 264(2):387-96, 2012. PMID: 22723499. PMCID: PMC3401348.
 107. J. Xu, S. Napel, H. Greenspan, C. F. Beaulieu, N. Agrawal, D. L. Rubin, "Quantifying the margin sharpness of lesions on radiological images for content-based image retrieval," *Med Phys*. 38(9):5405-18, 2012. PMID: 22957608. PMCID: PMC3432101.
 108. V. S. Nair, O. Gevaert, G. Davidzon, S. Napel, E. E. Graves, C. D. Hoang, J. B. Shrager, A. Quon, D. L. Rubin, S. K. Plevritis "Prognostic PET ¹⁸F-FDG Uptake Imaging Features are Associated with Major Oncogenomic Alterations in Patients With Resected Non-Small Cell Lung Cancer," *Cancer Research*, 72(15):3725-34, 2012. PMID: 22710433 PMCID: PMC3596510.
 109. J. H. Won, J. Rosenberg, G. D. Rubin, S. Napel, "Uncluttered Single-Image Visualization of Vascular Structures Using GPU and Integer Programming," *IEEE Transactions on Visualization and Computer Graphics*, 19(12):81-93, 2013. PMID: 22291148. PMCID: PMC3758916.

110. F. Gimenez, J. Xu, Y. Liu, T. Liu, C.F. Beaulieu, D. L. Rubin, S. Napel, "Automatic Annotation of Radiological Observations in Liver CT Images," *AMIA Annu Symp Proc.* 2012; 2012: 257-263. PMID: 23304295. PMCID: PMC3540508.
111. J. S. Faruque, D. L. Rubin, C. F. Beaulieu, S. Napel, "Modeling Perceptual Similarity Measures in CT Images of Focal Liver Lesions," *J Digit Imaging*, 25(1): 121-128, 2013. PMID: 23254627. PMCID: PMC3705003.
112. C. Kurtz, C. F. Beaulieu, S. Napel, D. L. Rubin, M.D., "A Hierarchical Knowledge-based Approach for Retrieving Similar Medical Images Described with Semantic Annotations," *Journal of Biomedical Informatics*, 49:227-44, 2014. PMID: 24632078. PMCID: PMC4058405.
113. G. D. Rubin, J. Leipsic, U. J. Schoepf, D. Fleischmann, S. Napel, "CT Angiography after 20 years: A Transformation in Cardiovascular Disease Characterization and Still Advancing," *Radiology* 271(3):633-52, 2014. PMID: 24848958. PMCID: PMC4669887.
114. J. Xu, S. Napel, H. Greenspan, C. F. Beaulieu, N. Agrawal, D. L. Rubin, "Quantifying the margin sharpness of lesions on radiological images for content-based image retrieval," *Med Phys.* 38(9):5405-18, 2012. PMID: 22957608. PMCID: PMC3432101.
115. A. Depeursinge, C. Kurtz, C. F. Beaulieu, S. Napel, D. L. Rubin, "Predicting Visual Semantic Descriptive Terms from Radiological Image Data: Preliminary Results with Liver Lesions in CT," *IEEE Transactions on Medical Imaging*, Epub May 2014, PMID: 24808406. PMCID: PMC4129229.
116. C. Kurtz, A. Depeursinge, C. F. Beaulieu, S. Napel, D. L. Rubin, "On combining image-based and ontological semantic similarities for medical image retrieval applications," *Medical Image Analysis* 18:1082-1100, 2014. PMID: 25036769. PMCID: PMC4173098.
117. G. D. Rubin, J. E. Roos, M. Tall, B. Harrawood, S. Bag, D. Y. Ly, D. M. Seaman, L. M. Koweek, H. P. McAdams, S. Napel, K. R. Choudhury, "Characterizing Search, Recognition and Decision in the Detection of Lung Nodules in CT Scans: Elucidation with Eye Tracking," *Radiology* 274(1):276-286, 2015. PMID: 25325324.
118. R. Colen, I. Foster, R. Gatenby, M. Giger, R. Gillies, M. Heller, A. Madabhushi, S. Madhavan, S. Napel, A. Rao, J. Saltz, J. Tatum, R. Verhaak, G. Whitman, "NCI Workshop Report: Clinical and Computational Requirements for Correlating Imaging Phenotypes with Genomics Signatures," *Transl Oncol* 7(5):556-69, 2014. PMID: 25389451. PMCID: PMC4225695.
119. J. S. Faruque, C. F. Beaulieu, J. Rosenberg, D. L. Rubin, D. Yao, S. Napel, "Content-based Image Retrieval in Radiology: Analysis of Variability in Human Perception of Similarity," *J. Med. Imag.* 2(2), 025501 (Apr 03, 2015) 2015. PMID: 26158112. PMCID: PMC4478987.
120. H. Itakura, L.A. Mitchell, J. J. Loya, S. Echegaray, T. D. Azad, K. Yeom, S. Napel, S. Chang, G. R. Harsh IV, O. Gevaert, "MR Imaging Features Identify Glioblastoma Subtypes that Prognosticate Survival and Reflect Underlying Molecular Signaling Pathway Activities," *Science Translational Medicine* 7(303): 303ra138, 2015. PMID: 26333934. PMCID: PMC4666025.

121. S. Echegaray, O. Gevaert, R. Shah, A. Kamaya, J. Louie, N. Kothary, S. Napel, "Core Samples" for Radiomics Features that are Insensitive to Tumor Segmentation: Example in CT Images of Hepatocellular Carcinoma," *J. of Med. Imag.* 2(4):041011, 2015. PMID: 26587549. PMCID: PMC4650964.
122. J. Kalpathy-Cramer, B. Zhao, D. Goldgof, Y. Gu, X. Wang, H. Yang, Y. Tan, R. Gillies, S. Napel, "A Comparison of Lung Nodule Segmentation Algorithms: Methods and Results from a Multi-institutional Study," *J Digit Imaging*, 29(4):476–487, 2016. PMID: 26847203. PMCID: PMC4942386.
123. J. Wu, M. F. Gensheimer, X. Dong, D. L. Rubin, S. Napel, M. Diehn, B. W. Loo, R. Li, "Robust Intra-tumor Partitioning to Identify High-risk Subregions in Lung Cancer: a Pilot Study," *International Journal of Radiation Oncology, Biology, Physics* 95(5):1504-12, 2016. PMID: 27212196. PMCID: PMC4969127.
124. S. Echegaray, V. Nair, M. Kadoch, A. N. C. Leung, D. L. Rubin, O. Gevaert, S. Napel, "A Rapid Segmentation-insensitive "Digital Biopsy" Method for Radiomic Feature Extraction: Method and Pilot Study using CT images of Non-small Cell Lung Cancer," *Tomography* 2(4) 283-292, 2016. PMID: 28612050; PMCID: PMC5466872.
125. J. Kalpathy-Cramer, A. Mamomov, B. Zhao, L. Lu, D. Cherezov, S. Napel, S. Echegaray, M. McNitt-Gray, P. Lo, J.C. Sieren, J. Uthoff, S.K.N. Dilger, B. Driscoll, I. Yeung, D. Goldgof, "Radiomics of lung nodules: a multi-institutional study of robustness and agreement of quantitative imaging features," *Tomography* 2(4) 430-437, 2016. PMID: 28149958, PMCID: PMC5279995.
126. O. Gevaert, S. Echegaray, A. Khuong, C. D. Hoang, J. B. Shrager, K. C. Jensen, G. J. Berry, S. K. Plevritis, D. L. Rubin, S. Napel, A. N. Leung, "Predictive radiogenomics modeling of EGFR mutation status in lung cancer," *Sci Rep.* 2017 Jan 31;7:41674, PMID: 28139704, PMCID: PMC5282551.
127. K. Lekadir, A. Galimzianova, À. Betriu, L. Igual, D. L. Rubin, E. Fernández, P. Radeva, and S. Napel, "A Convolutional Neural Network for Automatic Characterization of Plaque Composition in Carotid Ultrasound," *IEEE J Biomed Health Inform* 2017 Jan 21(1):48-55, PMID:27893402, PMCID: PMC5293622.
128. A. Hoogi, C. F. Beaulieu, G. M. Cunha, E. Heba, C. B. Sirlin, S. Napel and D. L. Rubin, "Adaptive Local Window for Level Set Segmentation of CT and MRI Liver Lesions," *Med Image Anal.* 2017 Jan 37:46-55. PMID: 28157660, PMCID: PMC5393306.
129. L. Ebner, M. Tall, K. Roychoudhury, D. L. Ly, J. E. Roos, S. Napel, G. D. Rubin, "Variations in the Functional Visual Field for Detection of Lung Nodules on Chest Computed Tomography: Impact of Nodule Size, Distance, and Local Lung Complexity," *Med Phys* 44(7) 3483-90, 2017. PMID: 28419484, PMCID:PMCXXX.
130. R. Minamimoto, M. Jamali, O. Gevaert, S. Echegaray, A. Khuong, C. D. Hoang, J. B. Shrager, S. K. Plevritis, D. L. Rubin, A. N. C. Leung, S. Napel, A. Quon, "Prediction of EGFR and KRAS Mutation in non-small cell lung cancer using advanced quantitative 18F FDG-PET/CT metrics," *Oncotarget* 10;8(32):52792-52801, 2017. PMID:28538213. PMCID: PMC5581070.
131. J. Wu, B. Li, X. Sun, G. Cao, D. L. Rubin, MD, S. Napel, D. M. Ikeda, A. W. Kurian, R. Li, "Heterogeneous enhancement patterns of tumor-adjacent parenchyma on MRI are associated with dysregulated signaling pathways and poor survival in

- breast cancer," *Radiology* 205(2):401-413, 2017. PMID:28708462. PMCID: PMC5673053.
132. S. Bakr, S. Echegaray, R. Shah, A. Kamaya, J. Louie, S. Napel, N. Kothary, O. Gevaert, "Non-invasive radiomics signature based on quantitative analysis of computed tomography images for prediction of microvascular invasion in hepatocellular carcinoma: a pilot study," *J Med Imaging (Bellingham)*, 2017 Oct;4(4):041303. doi: 10.1117/1.JMI.4.4.041303. PMID:28840174. PMCID: PMC5565686.
 133. M. Zhou, A. N. C. Leung, S. Echegaray, J. B. Shrager, K. C. Jensen, G. G. Berry, S. K. Plevritis, D. L. Rubin, S. Napel, O. Gevaert, "Non-Small Cell Lung Cancer Radiogenomics Map Identifies Relationships between Molecular and Imaging Phenotypes with Prognostic Implications," *Radiology* 286(1):307-315, 2018. PMID:28727543.
 134. S. Echegaray, S. Bakr, D. L. Rubin, S. Napel, "Quantitative Image Feature Engine (QIFE): An open-source, modular engine for 3D quantitative feature extraction from volumetric medical images," *J Digit Imaging*, 2017 Oct 6 doi: 10.1007/s10278-017-0019-x. [Epub ahead of print] PMID: 28993897.
 135. M. Zhou, J. Scott, B. Chaudhury, L. Hall, D. Goldgof, K. W. Yeom, M. Iv, Y. Ou, J. Kalpathy-Cramer, S. Napel, R. Gillies, O. Gevaert, R. Gatenby, "Radiomics in Brain Tumor: Image Assessment, Quantitative Feature Descriptors and Machine-learning Approaches," *AJNR Am J Neuroradiol*. 2017 Oct 5. doi: 10.3174/ajnr.A5391. [Epub ahead of print] PMID:28982791.
 136. J. Wu, G. Cao, X. Sun, J. Lee, D.L. Rubin, S. Napel, A.W. Kurian, B. Daniel, R. Li, "Intratumoral spatial heterogeneity by perfusion MR imaging predicts recurrence-free survival in locally advanced breast cancer treated with neoadjuvant chemotherapy," in press, *Radiology*, December 2017.
 137. Y. Balagurunathan, A. Beers, J. Kalpathy-Cramer, M. McNitt-Gray, L. Hadjiiski, B. Zhao, J. Zhu, H. Yang, S.F. Yip, H. J.W.L. Aerts, S. Napel, D. Cherezov, K. Cha, H-P Chan, C. Flores, A. Garcia, R. Gillies, D. Goldgof, "Semi-Automated Pulmonary Nodule Interval Segmentation using the NLST Data," in press, *Medical Physics*, January 2018.
 138. G. D. Rubin, B. Harrawod, K. RoyChoudhury, J. Roos, L. Ebner, M. Tall, S. Napel, "Peripheral Vision at the Moment of Recognition for Lung Nodules in CT Scans: Inter-reader Variations and Associations with Detection Performance," *accepted pending revision Radiology*, August 2017.
 139. W. Zhang, G. Bouchard, A. Yu, M. Shafiq, M. Jamali, J. Shrager, K. Ayers, S. Bakr, A. Gentles, Max. Diehn, A. Quon, R. West, V. S. Nair, M. van de Rijn, S. Napel, S. K. Plevritis, "PET-FDG uptake in human lung adenocarcinoma associated with invasion mediated through GFPT2-expressing cancer-associated fibroblasts," *accepted pending revision, Cancer Research*, September 2017.
 140. K. Roy Choudhury, B. Harrawood, J. Roos, L. Ebner, S. Napel, G. D. Rubin, "A multivariate probability model of the search process for detecting lung nodules," *submitted to IEEE Transactions on Medical Imaging*, September 2017.
 141. S. Bakr, O. Gevaert, S. Echegaray, K. Ayers, M. Zhou, M. Shafiq, H. Zheng, W. Zhang, A.N.C. Leung M. Kadoch, J. Shrager, A. Quon, D.L. Rubin, S. K. Plevritis*,

S. Napel*, "A Radiogenomic Dataset of Non-Small Cell Lung Cancer," *submitted to Nature Scientific Data*, Dec. 2017.

142. S. Napel, W. Mu, B. Jardim-Perassi, H. J. W. L. Aerts, R. Gillies, "Quantitative Imaging of Cancer in the Post-genomic Era: Radio(geno)mics, Deep Learning and Habitats," *submitted to Cancer Research*, Jan. 2018.

Peer-reviewed Conference Proceedings

1. S. Dunne, S. Napel, B.K. Rutt, "Fast Reprojection of Volume Data." Proceedings of the First Conference on Visualization in Biomedical Computing, IEEE Comput. Soc. Press, 11-18, May 1990.
2. P.A. van den Elsen, E-J D. Pol, T.S. Sumanaweera, P.F. Hemler, S. Napel, J.R. Adler, "Grey Value Correlation Techniques used for Automatic Matching of CT and MR Brain and Spine Images." Proceedings of the Fifth Conference on Visualization in Biomedical Computing, Proceedings of the SPIE **2359**, 19:227-237, 1994.
3. R. Shahidi, V. Argiro, S. Napel, L. Gray, H.P. McAdams, G.D. Rubin, C.F. Beaulieu, R.B. Jeffrey, Jr., G.A. Johnson, "Assessment of Several Virtual Endoscopy Techniques using Computed Tomography and Perspective Volume Rendering," 4th International Conference on Visualization in Biomedical Computing Conference, Hamburg, Germany, September 1996, p. 521-528.
4. S.Y. Yen, S. Napel, G.D. Rubin, "Fast Sliding Thin Slab Volume Visualization," Proceedings of the IEEE Symposium on Volume Visualization, p. 79-86, San Francisco, October 1996.
5. S.B. Gokturk, C. Tomasi, B. Acar, C.F. Beaulieu, S. Napel, "A Learning Method for Automated Polyp Detection," MICCAI 2001. Utrecht, The Netherlands, October 14-17, 2001.
6. B. Acar, S. Napel, D.S. Paik, S.B. Gokturk, C. Tomasi, C.F. Beaulieu, "Using Optical Flow Fields for Polyp Detection in Virtual Colonoscopy," MICCAI 2001. Utrecht, The Netherlands, October 14-17, 2001.
7. A. Sherbondy, M. Houston, S. Napel, "Fast Volume Segmentation with Simultaneous Visualization Using Programmable Graphics Hardware," Proceedings: IEEE Visualization, 171-176, 2003.
8. J. H. Won, G. D. Rubin, S. Napel, "Flattening the Abdominal Aortic Tree for Effective Visualization," IEEE 28th Annual International Conference on Engineering in Medicine and Biology, New York, August 30, 2006.
9. M. Kukuk, S. Napel, "Rotational Roadmapping: A New Image-based Navigation Technique for the Interventional Room," MICCAI 2007, Brisbane, Australia, October 29 – November 2, 2007, Med Image Comput Comput Assist Interv Int Conf Med Image Comput Comput Assist Interv 2007 10 (Pt 2): 636-43.
10. F. Gimenez, J. Xu, Y. Liu, T. T. Liu, C. F. Beaulieu, D. L. Rubin, S. Napel, "On the Feasibility of Predicting Radiological Observations from Computational Imaging Features of Liver Lesions in CT Scans," Healthcare Informatics, Imaging, and Systems Biology (HISB), San Jose California July 27-29, 2011, page 346-350.
11. J. S. Faruque, D. L. Rubin, C. F. Beaulieu, J. Rosenberg, A. Kamaya, G. Tye, R. M. Summers, S. Napel, "A Scalable Reference Standard of Visual Similarity for a

Content-Based Image Retrieval System," Healthcare Informatics, Imaging, and Systems Biology (HISB), San Jose California July 27-29, 2011, page 158-165.

12. F. Gimenez, J. Xu, Y. Liu, T. Liu, C. F. Beaulieu, D. L. Rubin, S. Napel, "Automatic Annotation of Radiological Observations in Liver CT Images," AMIA annual meeting, November 3-7, 2012, Chicago IL
13. E. Lee, M. Zhou, O. Grove, Y. Balagurunathan, S. Echegaray, R. Gillies, N. Gamboa, B. Murmann, S. Napel, S. Wong, O. Gevaert, "A deep learning framework to predict survival from medical images of lung cancer patients," Neural Information Processing Society, December 5-10 2016, Barcelona, Spain.
14. I. Cetin, G. Sanroma, S.E. Petersen, S. Napel, O. Camara, M-A G. Ballester1, K. Lekadir, A Radiomics Approach to Computer-Aided Diagnosis with Cardiac Cine-MRI, Medical Image Processing and Computer-Aided Intervention STACOM (Statistical Atlases and Computational Modeling of the Heart), September 10-14, 2017.

Conference Presentations and Abstracts

1. W.D. McCallum, C.S. Williams and S. Napel, "Feto-placental Velocity Waveforms." Proceedings: Society for Gynecological Investigation, No. 38, 25th Annual Meeting, Atlanta, Georgia, March 1978.
2. S. Napel, C.S. Williams and W.D. McCallum, "Automatic Characterization of Blood Velocity Waveforms Derived from Doppler Signals." Proceedings: 23rd AIUM, San Diego, California, October 1978.
3. W.D. McCallum, C.S. Williams and S. Napel, "Fetal Blood Velocity Waveforms: Effect of Transducer Location and Maternal Position on Umbilical Artery Blood Velocity Waveforms." Proceedings: 25th AIUM, New Orleans, Louisiana. September 1980.
4. J. Couch, W. Herrmannsfeldt, S. Napel, K. Peschmann and D. Boyd. "Performance of an Electron Beam Scan Tube Test Bed for High Speed CT." 67th Radiological Society of North American Scientific Sessions, Chicago, IL, November 1981.
5. M.J. Lipton, S.A. Napel, B. Brundage, D. Timbers, D.P. Boyd and R. Redington. "Electrocardiograph Gated CT for Regional Myocardial Motion Analysis." 54th American Heart, Dallas, Texas. Circulation, 64:220, 1981.
6. D.P. Boyd, J. L. Couch, S.A. Napel, D.L. Parker, K.R. Peschmann, R.E. Rand, W.B. Herrmannsfeldt, "High-speed, Multi-slice X-Ray Computed Tomography." Proceedings: International Workshop on Physics and Engineering in Medical Imaging, March 1982.
7. K.R. Peschmann, J.L. Couch, S. Napel, R.E. Rand, D.P. Boyd, "A Scanning Electron Beam X-Ray Tube Built for Ultrafast CT Scanning." World Congress on Medical Physics and Biomedical Engineering, Hamburg, Germany, September 1982.
8. M.J. Lipton, C.B. Higgins, R.J. Herfkens, B.H. Brundage, R. Sievers, S.A. Napel, R.E. Rand, K.R. Peschmann and D.P. Boyd. "High Speed Cine CT (CVCT): Preliminary Results." Association for University Radiologists, University of South Alabama, March 1983.

9. R.G. Gould, J.L. Couch, S.A. Napel, K.R. Peschmann, R.E. Rand, D. P. Boyd, "Performance Characteristics of an Ultrafast Scanning Electron Beam CT Scanner." American Association of Physicists in Medicine Annual Meeting, New York. *Medical Physics*, **10**: 526 1983.
10. S.A. Napel, R.E. Rand, J.L. Couch, K.R. Peschmann, "Computer Aspects of High Speed Multi-slice Cine Tomography." International Workshop on Cardiac Reconstruction, Santa Cruz, California, August 1983. *Journal of Computer Assisted Tomography*, **8**(2):351-363, 1984.
11. K.R. Peschmann, R.E. Rand, J.L. Couch, S.A. Napel, R.G. Gould, "Cine CT Scanner Technology and Prototype Evaluation." International Workshop on Cardiac Reconstruction, Santa Cruz, California, August 1983. *Journal of Computer Assisted Tomography*, **8**(2):351-363, 1984.
12. M.J. Lipton, C.B. Higgins, R.J. Herfkens, B.H. Brundage, R. Sievers, S.A. Napel, R.E. Rand, K.R. Peschmann, D.P. Boyd, "Millisecond Computed Cinetomography (CVCT): Preliminary Results." American Heart Association, Anaheim, California, November 1983.
13. M.J. Lipton, C.B. Higgins, D.W. Farmer, R.G. Gould, S. Napel, D.P. Boyd, "Real-time Cardiac CT Scanning Using a Millisecond Focused Electron Beam Scanner: Preliminary Results in Patients and Animals." 69th Scientific Sessions Radiological Society of North America, Chicago, November 1983.
14. R.G. Gould, J.L. Couch, S.A. Napel, K.R. Peschmann, R.E. Rand, D.P. Boyd, "Object Motion Artifacts in Ultrafast CT Scans." 69th Scientific Sessions Radiological Society of North America, Chicago, November 1983.
15. M.J. Lipton, C.B. Higgins, D.W. Farmer, R.G. Gould, S. Napel and D.P. Boyd. "Real-time Cardiac CT Scanning Using a Millisecond Focused Electron Beam Scanner: Preliminary Results in Patients and Animals." American College of Cardiology, Dallas, Texas, March 1984.
16. D.P. Boyd, K.R. Peschmann, R.E. Rand, J.L. Couch, S.A. Napel, R.G. Gould, C.E. Cann, H.K. Genant, "Cine CT: Initial Results Using a New Stable, Ultrafast Multi-slice Computed Tomography Scanner." Fourth International Workshop on Bone and Soft Tissue Densitometry, Fontebraud, France, May 1984.
17. D.P. Boyd, K.R. Peschmann, R.E. Rand, J.L. Couch, S.A. Napel, R.G. Gould, M.J. Lipton, C.B. Higgins, "Cine CT: A New Technology for Cardiac Computed Tomography." NATO Advanced Study Institute. Physics and Engineering of Medical Imaging Conference, Rome, Italy, September 1984.
18. S. Napel, "Recent Technical Advances in Cine Computer Tomography." International Congress of Radiology, Honolulu, Hawaii 1985.
19. S.M. Ackelsberg, S. Napel, R.G. Gould, D.P. Boyd, "Efficient Data Archive and Rapid Analysis for High Speed CT." SPIE Vol. 626, Medicine IV/PACS IV, pp. 451 1986.
20. B. Rutt, S. Napel, "Ultra High Speed Magnetic Resonance Imaging with Slowly Varying Gradients." 75th Scientific Sessions Radiological Society of North America, Chicago, November 1988. *Radiology* **169**(P):377, 1989.

21. S. Napel, B. Rutt, P. Pflugfelder. "3-D Display of Coronary Calcifications." Annual Meeting of Canadian Organization of Medical Physicists, London, Ontario, June 1989.
22. S. Napel, B.K. Rutt, S. Dunne, "Minimum Voxel and Maximum Gradient Reprojection for MR Angiography." Proceedings: 8th Annual Meeting, Society of Magnetic Resonance Imaging, Washington, D.C., February 1990. Abstract in *Magnetic Resonance Imaging*, 8(sup-1):108, 1990.
23. S. Dunne, S. Napel, B.K. Rutt, "Fast Fourier Projection for MR Angiography." Proceedings: 8th Annual Meeting, Society of Magnetic Resonance Imaging, Washington, D.C., February 1990. *Magnetic Resonance Imaging*, 8(sup-1):108, 1990.
24. S. Dunne, S. Napel, B.K. Rutt, "Fast Fourier Projection: A New Algorithm for Rapid Visualization of 3-D Data." Annual Meeting of the Canadian Organization of Medical Physicists, Montreal, Quebec, June 1990.
25. S. Napel, S. Dunne, B.K. Rutt, "Selective Black Blood MR Angiography." Annual Meeting of the Canadian Organization of Medical Physicists, Montreal, Quebec, June 1990.
26. S. Dunne, S. Napel, B.K. Rutt, "Fast Fourier Projection for MR Angiography." Proceedings: 9th Annual Meeting, Society of Magnetic Resonance in Medicine, New York, August 1990. Book of Abstracts, 1:490.
27. S. Napel, S. Dunne, B.K. Rutt, "Selective Black Blood MR Angiography." Proceedings: 9th Annual Meeting, Society of Magnetic Resonance in Medicine, New York, August 1990. Book of Abstracts, 1:170.
28. S. Singh, S. Napel, B.K. Rutt, "Single-Shot Localization of Multiple Regions of Interest by Projection-Presaturation." Proceedings: 9th Annual Meeting, Society of Magnetic Resonance in Medicine, New York, August 1990. Book of Abstracts, 1:599.
29. S. Napel, R. Frayne, B.K. Rutt, "Computation and Display of 3-D Flow Streamlines from 3-D Phase Contrast MRI," Proceedings: 10th Annual Meeting, Society of Magnetic Resonance in Medicine, San Francisco, August 1991. Book of Abstracts, 1:88.
30. B.K. Rutt, D.H. Lee, A.D. Vellet, R. Frayne, S. Napel, "Quantitative Comparison of Velocity Measurements in the Extracranial Carotid Arteries by 2D and 3D Phase Contrast MRI vs. Color Flow Doppler Ultrasound." 10th Annual Meeting, Society of Magnetic Resonance in Medicine, San Francisco, August 1991. Book of Abstracts, 1:91.
31. R. Frayne, S. Napel, B. K. Rutt, "Quantitative MR Acceleration Imaging." Proceedings: 10th Annual Meeting, Society of Magnetic Resonance in Medicine, San Francisco, August 1991. Book of Abstracts, 2:805.
32. B.K. Rutt, D.H. Lee, S. Napel, "Evaluation of Complex Flow in the Extracranial Carotid Arteries Using Phase Contrast MRI and Simulated Streamlines." 77th Scientific Sessions Radiological Society of North America, Chicago, November 1991. *Radiology* 181(P):189.
33. D.H. Lee, B.K. Rutt, S. Napel, "Phase Contrast MRI with Simulated Streamlines for the Evaluation of Flow in Large Intracranial Aneurysms." 77th Scientific Sessions

- Radiological Society of North America, Chicago, November 1991. *Radiology* **181**(P):119.
34. B.K. Rutt, S. Napel, D.H. Lee, "Quantitative Comparison of Velocity Measurements in the Extracranial Carotid Arteries by 2D and 3D Phase Contrast MRI vs. Doppler Ultrasound." 77th Scientific Sessions Radiological Society of North America, Chicago, November 1991. *Radiology* **181**(P):263.
 35. G.D. Rubin, N.J. Pelc, S. Napel, R.J. Herfkens, "Optimization of Breath-Held Pulmonary Magnetic Resonance Angiography." Fifteenth Annual Course of the Society of Computed Body Tomography, Tucson, AZ, March 1992. *Awarded Cum Laude*.
 36. D.H. Lee, B.K. Rutt, S. Napel, "Phase-Contrast MR Imaging with Simulated Streamlines for the Evaluation of Flow in Large Intracranial Aneurysms." 55th Annual Meeting, Canadian Association of Radiologists, Halifax, Nova Scotia, June 1992.
 37. H.C. Davidson, S. Napel, J. Drace, R.J. Herfkens, "Computer-Based MRI Teaching File." 40th Annual Meeting, Association of University Radiologists, April 1992.
 38. S. Napel, M.P. Marks, S.M-H. Song, C.H. McDonnell, D.R. Enzmann, R.B. Jeffrey, Jr., "Three-dimensional Reconstructions in the Evaluation of Intracranial and Extracranial Circulation Using Spiral CT." 30th Annual Meeting, American Society of Neuroradiologists, St. Louis, May 1992.
 39. S.M-H. Song, S. Napel, N. Pelc, "Improvement of Vessel Conspicuity of 3D Phase Contrast MRI by Application of a Divergence-free Constraint." Proceedings: 11th Annual Meeting, Society of Magnetic Resonance in Medicine, Berlin, Germany, August 1992. *Book of Abstracts* **1**:474.
 40. G.D. Rubin, P.J. Walker, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., C. McDonnell, D.C. Miller, R.S. Mitchell, "Spiral CT Angiography: An Alternative Imaging Modality for the Abdominal Aorta and its Branches." Society of Vascular Imaging, January 1993.
 41. S. Napel, C.J. Bergin, D.V. Paranjpe, G.D. Rubin, "Maximum and Minimum Intensity Projection of Spiral CT Data for Simultaneous 3D Imaging of the Pulmonary Vasculature and Airways." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):126.
 42. S. Napel, M. P. Marks, G.D. Rubin, M. D. Dake, D.R. Enzmann, R.B. Jeffrey, Jr. "Vascular Imaging Using Spiral CT and Maximum Intensity Projections." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):271.
 43. S.M-H. Song, S. Napel, G.H. Glover, R.J. Herfkens, "Determining Cardiac Pressure Images from Velocity Data—Application to Ultrafast CT or Phase Contrast MRI." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):175.
 44. S.M-H. Song, S. Napel, N.J. Pelc, "Reduction of Noise and Improvement of Contrast in 3D Phase Contrast (PC) MR Angiograms by a New Projection Operator." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):204.

45. G.D. Rubin, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., "Pre- and Post-Operative Assessment for Abdominal Vascular Surgery: Spiral CT Angiography as an Alternative to Arteriography." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):181.
46. G.D. Rubin, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., "Spiral CT Angiography of Renal Artery Stenosis: Comparison with Arteriography." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):163.
47. G.D. Rubin, R.J. Herfkens, S. Napel, N.J. Pelc, "Breath-Held Pulmonary Magnetic Resonance Angiography: Comparison of Imaging Strategies." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):217.
48. G.D. Rubin, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., "Renal Stent Position and Patency: Evaluation with Spiral CT Angiography." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):181.
49. G.D. Rubin, M.D. Dake, S. Napel, C.H. McDonnell, R.B. Jeffrey, Jr., "Abdominal Spiral CT Angiography: A Minimally Invasive Three-Dimensional Alternative to Arteriography." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):359. *Awarded Magna Cum Laude.*
50. D.V. Paranjpe, C.J. Bergin, S. Napel, R.B. Jeffrey, Jr., "Applications and Evaluation of Spiral CT Imaging of the Lung." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):132.
51. H.C. Davidson, L.G. Fong, J.E. Drace, R.J. Herfkens, S. Napel, "SMaRT: A Computer-Based MR Teaching File." 78th Scientific Sessions Radiological Society of North America, Chicago, November 1992. *Radiology* **185**(P):414. *Awarded Certificate of Merit.*
52. G.D. Rubin, P.J. Walker, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., C.H. McDonnell, R.S. Mitchell, D.C. Miller, "3D CT Angiography: An Alternative Imaging Modality for the Abdominal Aorta and its Branches." Eighth Annual Meeting of the Western Vascular Society, Sonoma, CA, January 1993.
53. G.D. Rubin, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., C. McDonnell, "3D CT Angiography of Renal Artery Stenosis." Sixteenth Annual Course of the Society of Computed Body Tomography, Lake Buena Vista, FL, February 1993. *Awarded Cum Laude.*
54. S.M-H. Song, S. Napel, G.H. Glover, "Phase Unwrapping of MR Images with the Poisson Equation." Society of Magnetic Resonance Imaging Annual Meeting, San Francisco, March 1993. *Journal of Magnetic Resonance Imaging*, **3**(P):143 1993.
55. G.D. Rubin, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., "3D CT Arteriography of the Pelvis—Aortic to Femoral Bifurcations." American Roentgen Ray Society Annual Meeting, April 1993.
56. G.D. Rubin, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., "3D CT Angiography of Renal Artery Stenosis: Comparison with Arteriography." American Roentgen Ray Society Annual Meeting, April 1993.

57. S.M-H. Song, S. Napel, G.B. Pike, N.J. Pelc, G.H. Glover, "Dynamic Range Extension of Phase Contrast Velocity Measurements." Proceedings: 12th Annual Meeting, Society of Magnetic Resonance in Medicine, New York, August 1993. Book of Abstracts 1:507.
58. T.S. Sumanaweera, S. Napel, G.H. Glover, S.M-H. Song, "A New Method to Quantify the Geometric Accuracy of MRI in Tissue using MRI Itself." Proceedings: 12th Annual Meeting, Society of Magnetic Resonance in Medicine, New York, August 1993. Book of Abstracts 2:745.
59. D. Katz, M.P. Marks, S. Napel, "Spiral CT Angiography of the Circle of Willis." 25th Annual Western Neurological Society, Pasadena, California, October 1993.
60. T.S. Sumanaweera, S. Napel, G.H. Glover, S.M-H. Song, "Quantification of the Geometric Accuracy of MRI in Tissue: A new Approach Using MRI Itself." IEEE Nuclear Science Symposium: Medical Imaging Conference, San Francisco, October 1993.
61. S.M-H. Song, S. Napel, N.J. Pelc, G.H. Glover, "A Least-squares Based Phase Unwrapping Algorithm for MRI." IEEE Nuclear Science Symposium: Medical Imaging Conference, San Francisco, October 1993.
62. G.D. Rubin, M.D. Dake, S. Napel, R.B. Jeffrey, Jr., "3-D CT Angiography as an Alternative to Conventional Arteriography in the Planning and *In Vivo* Evaluation of Aortic Stent-Grafts." 79th Scientific Sessions Radiological Society of North America, Chicago, November 1993. Radiology, **189**(P):112, 1993.
63. M.P. Marks, S.A. Napel, "Cerebral Blood Flow Imaging with Spiral Xenon CT." 79th Scientific Sessions Radiological Society of North America, Chicago, November 1993. Radiology, **189**(P):169, 1993.
64. G.D. Rubin, S. Napel, R.B. Jeffrey, Jr., "Renal 3-D CT Arteriography Grading Accuracy: Blinded Evaluation of Rendering Techniques," 79th Scientific Sessions Radiological Society of North America, Chicago, November 1993. Radiology **189**(P):189 1993.
65. S. Napel, M.P. Marks, N.J. Pelc, "Optimization of Xenon-Enhanced Helical CT for Acquisition of 3D Regional Cerebral Blood Flow (rCBF) Maps of the Brain," 79th Scientific Sessions Radiological Society of North America, Chicago, November 1993. Radiology, **189**(P):217 1993.
66. S. Napel, G.D. Rubin, M.P. Marks, D.A. Katz, R.B. Jeffrey, Jr., "Sliding Thin-Slab Maximum Intensity Projection (MIP) for Improved Visualization of CT and MR Angiographic Images," 79th Scientific Sessions Radiological Society of North America, Chicago, November 1993. Radiology, **189**(P):219, 1993.
67. G.D. Rubin, S. Napel, M.D. Dake, R.B. Jeffrey, Jr., "3-D CT Angiography of the Splanchnic Circulation," 79th Scientific Sessions Radiological Society of North America, Chicago, November 1993. Radiology, **189**(P):229, 1993.
68. T.S. Sumanaweera, S. Napel, G.H. Glover, S.M-H. Song, "Quantifying the Spatial Accuracy of MRI in Tissue without External Measurements," 79th Scientific Sessions Radiological Society of North America, Chicago, November 1993. Radiology, **189**(P):237, 1993.
69. S.M-H. Song, B.S. Hu, S. Napel, N.J. Pelc, G.H. Glover, "Obtaining Spatial Pressure Distribution from Phase Contrast Velocity Data," 79th Scientific Sessions

- Radiological Society of North America, Chicago, November 1993. *Radiology*, **189**(P):270, 1993.
70. T.S. Sumanaweera, G.H. Glover, S.M-H. Song, J.R. Adler, S. Napel, "Correction and Quantification of Geometric Distortion in MRI." Technical Report of AAAI 1994 Spring Symposium Series, pp. 203-206, Stanford University, CA, March 1994.
 71. P.F. Hemler, T. Sumanaweera, R. Pichumani, P.A. van den Elsen, S. Napel, J. Drace, J. Adler, "A System for Multimodality Image Fusion of the Spine." Technical Report of AAAI 1994 Spring Symposium Series, pp. 45-45, Stanford University, CA, March 1994.
 72. M.L. Goris, K.K. Nielsen, S.A. Napel, "Dosimetry Computation from Tissue Distribution Data Entered in an Electronic Mouse Model with Convolution of the Beta Ray Deposition Profile." Society of Nuclear Medicine 41st Annual Meeting, June 1994.
 73. G.D. Rubin, S. Napel, A. Leung, "Volumetric Applications for Spiral CT in the Thorax." The International Society for Optical Engineering, Newport Beach, CA, February 1994. In Medical Imaging 1994: Physiology and Function from Multidimensional Images. R.S. Acharya and E.A. Hoffman, Editors, Proceedings of the SPIE **2168**: 353-360 1994.
 74. G.D. Rubin, R.B. Jeffrey, Jr., E.J. Alfrey, M.D. Dake, C.P. Semba, S. Napel, "Pre-Operative Assessment of Living Renal Donors: Spiral CT as an Alternative to Conventional Angiography and Intravenous Urography." Seventeenth Annual Course of the Society of Computed Body Tomography, Seattle, Washington, April 1994. *Awarded Cum Laude*.
 75. K.C.P. Li, L.R. Pelc, S. Napel, M. Goris, D. Lin, C. Song, M. Hollett, R.J. Herfkens, "MRI of Pulmonary Embolism using Intravascular Contrast Enhanced 3D Fast Gradient Echo Technique in a Canine Model." Seventeenth Annual Course of the Society of Computed Body Tomography, Seattle, Washington, April 1994. *Awarded Cum Laude*.
 76. P.F. Hemler, T.S. Sumanaweera, P.A. van den Elsen, S. Napel, J. Adler, "A System for Multimodality Image Fusion." In: Proceedings 1994 IEEE Seventh Symposium on Computer-Based Medical Systems (Cat. No.94CH3426-4). Los Alamitos, CA, USA: IEEE Comput. Soc. Press 1994; 335-40
 77. K.C.P. Li, L.R. Pelc, S. Napel, M. Goris, D. Lin, C. Song, M. Hollett, R.J. Herfkens, "MRI of Pulmonary Embolism using Intravascular Contrast Enhanced 3D Fast Gradient Echo Technique in a Canine Model." Proceedings: 2nd Annual Meeting, Society of Magnetic Resonance, San Francisco, August 6-12 1994. Book of Abstracts **1**:36.
 78. P.A. van den Elsen, T.S. Sumanaweera, P.F. Hemler, D.R. Enzmann, S. Napel, J.R. Adler, "Matching of CT and MRI Spine Images by Grey Value Correlation." Proceedings: 2nd Annual Meeting, Society of Magnetic Resonance, San Francisco, August 6-12 1994. Book of Abstracts **1**:56.
 79. T.S. Sumanaweera, G.H. Glover, P.F. Hemler, P.A. van den Elsen, J.R. Adler, S. Napel, "Correction of MR Geometric Distortion for Improved Frame-based Stereotaxic Localization Accuracy." 80th Scientific Sessions Radiological Society of North America, Chicago, November 1994. *Radiology*, **193**(P):305, 1994.

80. P.A. van den Elsen, E-J.D. Pol, T.S. Sumanaweera, P.F. Hemler, J.R. Adler, S. Napel, "CT and MR Spine Image Correlation for Neurosurgery Treatment Planning." 80th Scientific Sessions Radiological Society of North America, Chicago, November 1994. *Radiology*, **193**(P):333, 1994.
81. R. Pichumani, P.F. Hemler, T.S. Sumanaweera, J.E. Drace, J.R. Adler, S. Napel, "Extraction of MR Disc Landmarks using Kalman Filters and Active Contours." 80th Scientific Sessions Radiological Society of North America, Chicago, November 1994. *Radiology*, **193**(P):253, 1994.
82. S. Napel, G.D. Rubin, M. Drangova, R.B. Jeffrey, Jr., "Retrospective Minimization of Vascular Motion Artifacts for CT Angiography." 80th Scientific Sessions Radiological Society of North America, Chicago, November 1994. *Radiology*, **193**(P):139, 1994.
83. G.D. Rubin, M.D. Dake, C.P. Semba, S. Napel, R.B. Jeffrey, Jr., "Spiral/Helical CT Angiography for the Evaluation of Endovascular Interventions." 80th Scientific Sessions Radiological Society of North America, Chicago, November 1994. *Radiology*, **193**(P):379, 1994.
84. G.D. Rubin, S. Napel, R.B. Jeffrey, Jr., "Accuracy of Volume Measurement from Spiral/Helical CT Data." 80th Scientific Sessions Radiological Society of North America, Chicago, November 1994. *Radiology*, **193**(P):427, 1994.
85. F.G. Sommer, R.B. Jeffrey, Jr., G.D. Rubin, S.A. Napel, "Reformatted Non-contrast Spiral CT in the Evaluation of Renal Colic." Society of Uroradiology, Palm Beach, Florida, January 1995. *Awarded Society Grand Prize*.
86. G.D. Rubin, S. Napel, M.D. Dake, R.B. Jeffrey, Jr., "Volume Rendered CT "Fly-Through" - A New Way to Visualize CT Data." Society of Computed Body Tomography, New York, January 1995.
87. G.D. Rubin, S. Napel, D. Stucker, R.B. Jeffrey, Jr., "Semi-Automatic Volume Measurements from Helical CT Data." Society of Computed Body Tomography, New York, January 1995.
88. P.F. Hemler, P.A. van den Elsen, T.S. Sumanaweera, S. Napel, J.E. Drace, J.R. Adler, "A Quantitative Comparison of Residual Error for Three Different Multimodality Registration Techniques." 14th International Conference on Information Processing in Medical Imaging, Brest, France, June 1995. To be published in: *Computation Imaging and Vision*, eds. Kluwer Academic Publishers. *Awarded Francois Ebbsman Award, Second Place*.
89. T.S. Sumanaweera, P.F. Hemler, P.A. van den Elsen, G.H. Glover, J.R. Adler, S. Napel, "Computed Tomography and Magnetic Resonance Image Registration for Frameless Stereotactic Brain Surgery." 14th Conference and Ex. of South East Asia Regional Comp Confederation (SEARCC '95), Colombo, Sri Lanka.
90. K.O. Lim, T.S. Sumanaweera, G. Heit, G. Silverberg, J.E. Drace, S. Napel, "Fast Spin Echo-Based Field Mapping for Correcting MR Geometric Distortion." Proceedings: 3rd Scientific Meeting, Society of Magnetic Resonance Third Scientific Meeting, Nice, France, August 1995. *Book of Abstracts* **2**:763.
91. T.S. Sumanaweera, K.O. Lim, G.H. Glover, P.F. Hemler, G. Heit, P.A. van den Elsen, G. Silverberg, S. Napel, "Geometric Distortion Correction in Fast Spin Echo Images for Treating Parkinson's Disease using Stereotactic Pallidotomy,"

- Proceedings: 3rd Scientific Meeting, Society of Magnetic Resonance Third Scientific Meeting, Nice, France, August 1995. Book of Abstracts 1:493.
92. S. Napel, G.D. Rubin, C.F. Beaulieu, R.B. Jeffrey, Jr., "Perspective Volume Rendering: Virtual Endoscopy and More," 3rd International Workshop on Rapid Prototyping in Medicine and Computer Assisted Surgery, Erlangen, Germany, October 1995.
 93. G.D. Rubin, S. Napel, C.F. Beaulieu, M.D. Dake, R.B. Jeffrey, Jr., "Virtual Angioscopy using Volume Rendered CT Angiograms Three-Dimensional Rendering without Editing or Thresholding." 81st Scientific Sessions Radiological Society of North America, Chicago, November 1995. *Radiology* 197(P):144.
 94. C.H. Yan, G.S. Beaupre, G.A. Breitt, T.S. Sumanaweera, P.F. Hemler, S. Napel, "Accurate and Efficient Surface Representation for 3D Image Fusion." 81st Scientific Sessions Radiological Society of North America, Chicago, November 1995. *Radiology* 197(P):223.
 95. H.C. Davidson, J.E. Drace, R.J. Herfkens, S. Napel, "A DICOM-Based Mini-PACS for Radiology Education." 81st Scientific Sessions Radiological Society of North America, Chicago, November 1995. *Radiology* 197(P):259.
 96. T.J. Brosnan, M. Drangova, N.J. Pelc, D.R. Enzmann, S. Napel, "Retrospective Flow Measurement from 3D All-direction Phase-contrast MRI." 81st Scientific Sessions Radiological Society of North America, Chicago, November 1995. *Radiology* 197(P):391.
 97. S. Shiffman, G.D. Rubin, S. Napel, "Semiautomated Editing of Computed Tomography Sections for Visualization of Vasculature." SPIE Medical Imaging Conference, SPIE 2707:140-151, Newport Beach, CA, February 1996.
 98. T.S. Sumanaweera, K.O. Lim, G.H. Glover, P.F. Hemler, G. Heit, P.A. van den Elsen, G. Silverberg, S. Napel, "Fast Spin Echo Image Distortion Correction for MR-Guided Stereotactic Pallidotomy." SPIE Medical Imaging Conference, Newport Beach, CA, February 1996.
 99. S. Napel, G.D. Rubin, C.F. Beaulieu, R.B. Jeffrey, Jr., V. Argiro, "Perspective Volume Rendering of Cross-sectional Images for Simulated Endoscopy and Intraparenchymal Viewing." SPIE Medical Imaging Conference, SPIE 2707:75-86, Newport Beach, CA, February 1996.
 100. C.H. Yan, S. Napel, "Optimizing the Choice of an Image Interpolation Function." SPIE Medical Imaging Conference, SPIE 2710:376-389, Newport Beach, CA, February 1996.
 101. P.F. Hemler, S. Napel, "Quantified Registration Error for a Multimodality Surface-Based Registration System Versus the Accuracy of the Surface Description." SPIE Medical Imaging Conference, SPIE 2710:348-357, Newport Beach, CA, February 1996.
 102. J. West, J.M. Fitzpatrick, M.Y. Wang, B.M. Dawant, C.R. Maurer, Jr., R.M. Kessler, R.J. Maciunas, C. Barrilot, D. Lemoine, A. Collignon, F. Maes, P. Suetens, D. Vandermeulen, P.A. van den Elsen, P.F. Hemler, S. Napel, T.S. Sumanaweera, B. Harkness, D.L.G. Hill, C. Studholme, G. Malandain, X. Pennec, M.E. Noz, G.Q. Maguire, Jr., M. Pollack, C.A. Pelizzari, R.A. Robb, D. Hanson, R.P. Woods, "Comparison and Evaluation of Retrospective Intermodality Image Registration

- Techniques," SPIE Medical Imaging Conference, SPIE 2710:332-347, Newport Beach, CA, February 1996.
103. C.F. Beaulieu, S. Napel, I.Y. Chen, B.L. Daniel, G.D. Rubin, R.B. Jeffrey, Jr., "Optimization of CT Parameters for Virtual Colonoscopy," Society of Computed Body Tomography, Phoenix, AZ, March 1996. *Awarded Cum Laude*.
 104. G.D. Rubin, S. Napel, H. Ringl, T.J. Brosnan, "Assessment of Section Profile and Clinical Images of Helical CT Scans with Pitch Values of 0.5 to 3.0 using 180° Linear Extrapolation and Segmented Reconstruction," 82nd Scientific Sessions, Radiological Society of North America, Chicago, IL, November 1996.
 105. G.D. Rubin, Y. Kobayashi, G.D. Rubin, S. Napel, C.F. Beaulieu, R.B. Jeffrey, Jr., "Intraluminal and Extraluminal Images of the Vasculature: Perspective Volume Rendering of CT Angiograms without Editing of Thresholding," 82nd Scientific Sessions, Radiological Society of North America, Chicago, IL, November 1996.
 106. S. Napel, G. Rubin, C. Beaulieu, R.B. Jeffrey, Jr., "Automatic Flight-path Planning for Guided Virtual Endoscopy," 82nd Scientific Sessions, Radiological Society of North America, Chicago, IL, November 1996.
 107. S. Shiffman, G. Rubin, S. Napel, "Automated Segmentation of Blood Vessels in CT Angiograms via Matching of Isolabel Contours," 82nd Scientific Sessions, Radiological Society of North America, Chicago, IL, November 1996.
 108. C. Yan, G. Beaupre, R. Whalen, T. Sumanaweera, S. Napel, "Precise and Accurate Gold Standard for Multimodality and Serial Registration Method Evaluations," 82nd Scientific Sessions, Radiological Society of North America, Chicago, IL, November 1996.
 109. S. Yen, S. Napel, G.D. Rubin, "Fast Sliding Thin-Slab (STS) Volume Visualization of CT Angiograms (CTA)," 82nd Scientific Sessions, Radiological Society of North America, Chicago, IL, November 1996.
 110. C.H. Yan, G.S. Beaupre, R.T. Whalen, S. Napel, "Registration of Serial Skeletal Images for Accurately Measuring Changes in Bone Density, 43rd Annual Meeting of the Orthopaedic Research Society, San Francisco, Feb. 1997.
 111. R. Shahidi, J. Feller, S. Napel, C.F. Beaulieu, G. Fanton, G.D. Rubin, P. Tirman, "Virtual Arthroscopy: Techniques And Applications," Medicine Meets Virtual Reality, San Diego February 1997.
 112. S-Y Yen, G.D. Rubin, S. Napel, "Longitudinal Aliasing in Spiral CT: Effects of Pitch and Distance from the Isocenter," Radiological Society of North America 83rd Scientific Sessions, Chicago, November 1997.
 113. S-Y Yen, G.D. Rubin, S. Napel, "Effects of Sampling on Off-isocenter Slice Sensitivity Profiles in Spiral CT," Radiological Society of North America 83rd Scientific Sessions, Chicago, November 1997.
 114. D.S. Paik, C.F. Beaulieu, R.B. Jeffrey, G.D. Rubin, S. Napel, "Limited Visibility Optimization of Volume Rendering for Virtual Endoscopy," Radiological Society of North America 83rd Scientific Sessions, Chicago, November 1997.
 115. S. Shiffman, G.D. Rubin, S. Napel, "Classifications of Regions Via an Overlap Criterion for Segmentation of Blood Vessels in CT Angiograms," Radiological Society of North America 83rd Scientific Sessions, Chicago, November 1997.

116. G.D. Rubin, R.Y. Shifrin, P.T. Pitlick, S. Napel, L. Wexler, "Three-Dimensional Visualization of Cardiac Abnormalities from Electron Beam CT (EBCT) Data," Radiological Society of North America 83rd Scientific Sessions, Chicago, November 1997.
117. G.D. Rubin, D.T. Stucker, M.D. Dake, C.P. Semba, S. Napel, "Aneurysm Volume and Diameter Change Following Stent-Graft Treatment of Aortic Aneurysm," Radiological Society of North America 83rd Scientific Sessions, Chicago, November 1997.
118. C. Yan, G. Beaupre, R.T. Whalen, S. Napel. "Accurate Single Energy Spectrum Beam Hardening Correction for Quantitative Computed Tomography (CT)," Radiological Society of North America 83rd Scientific Sessions, Chicago, November 1997.
119. C.F. Beaulieu, R.B. Jeffrey, Jr., D.S. Paik, E.A. Slossberg, H.S. Young, S.A. Napel, "Three-dimensional Computed Tomography Colonography: Initial Clinical Experience with 3 mm Collimation and Perspective Volume Rendering," Radiological Society of North America 83rd Scientific Sessions, Chicago, November 1997.
120. C. Yan, G. Beaupre, R.T. Whalen, S. Napel. "Precise and Accurate Determination of Bone Mineral Density using Single Energy CT," 44th Annual Meeting, Orthopaedic Research Society, March 16-19 1998, New Orleans, Louisiana.
121. C.F. Beaulieu, C.A. Karadi, R.B. Jeffrey, Jr., D.S. Paik, S. Napel. "Creation and Detection of Digital Polyps in Patient CT Data: A Better Gold Standard for Evaluation of Visualization Modes in CT Colonography," Society of Computed Body Tomography and Magnetic Resonance, Twenty First Annual Course, Rancho Mirage, CA 1998. *Awarded cum laude.*
122. G.D. Rubin, D.S. Paik, S. Napel, R.B. Jeffrey, Jr. "Volumetric Quantification of the Aorta and Its Branches: A Unique Application for CT Angiographic Data." Society of Computed Body Tomography and Magnetic Resonance, Twenty-First Annual Course, Rancho Mirage 1998. Hounsfield Award Winner.
123. S. Napel, C. F. Beaulieu, R. B. Jeffrey Jr., D. S. Paik, C. Karadi, "New visualization techniques for virtual colonoscopy: methods and evaluation," in Computer-Aided Diagnosis in Medical Imaging. Proceedings of the First International Workshop on Computer-Aided Diagnosis, Doi, K. ed., Elsevier Science, Amsterdam, Netherlands, pp. 463-81999, presented at First International Workshop on Computer-Aided Diagnosis, Chicago, September 1998.
124. J.O. Fredrickson, S. Napel, C.F. Beaulieu, R.B. Jeffrey, Jr., H.S. Young, D.K. Owens, "Cost-Effectiveness of Virtual CT Colonoscopy in Colorectal Cancer Screening," 1st International Symposium on Virtual Colonoscopy, Boston, October 1998.
125. D.S. Paik, C.F. Beaulieu, R.B. Jeffrey, Jr., C.A. Karadi, S. Napel, "Panoramic Virtual Colonoscopy using the Mercator Projection," 1st International Symposium on Virtual Colonoscopy, Boston, October 1998.
126. C.A. Karadi, C.F. Beaulieu, R.B. Jeffrey, Jr., D.S. Paik, S. Napel, "Synthesis and Insertion of Colonic Polyps into Helical CT Data of the Colon: Technique and Evaluation," 1st International Symposium on Virtual Colonoscopy, Boston, October 1998.

127. C.F. Beaulieu, R.B. Jeffrey, Jr., C.A. Karadi, D.S. Paik, S. Napel, "Visualization Modes for CT Colonography: Blinded Comparison of Axial CT, Virtual Endoscopy, and Panoramic View Volume Rendering," 1st International Symposium on Virtual Colonoscopy, Boston, October 1998.
128. D.S. Paik, G.D. Rubin, S. Napel, "Automatic Segmentation of Aortic Thrombus and Flow Channel in CT Angiography: Method and Evaluation," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
129. C.F. Beaulieu, R.B. Jeffrey, Jr., C.A. Karadi, D.S. Paik, S. Napel, "Visualization Modes for CT Colonography: Blinded Comparison of Axial CT, Virtual Endoscopic and Panoramic View Rendering," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
130. C.A. Karadi, C.F. Beaulieu, R.B. Jeffrey, Jr., D.S. Paik, S. Napel, "Synthesis and Insertion of Colonic Polyps into Patient CT Data: Technique and Evaluation," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
131. H.R. Ringl, G.D. Rubin, S. Napel, "Measurement of Calcified Plaque Dimensions in a Pulsatile Blood Model using Helical CT," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
132. G.D. Rubin, D. Fleischmann, H.D. He, D.S. Paik, S. Napel, "Comparison of 4-Detector Row and Standard 1-Detector Row Helical CT Scanners: Helical Artifact and Image Quality," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
133. J.O. Frederickson, H.S. Young, R.B. Jeffrey, C.F. Beaulieu, Jr., S. Napel, "Cost Effectiveness of Virtual CT Colonoscopy in Colorectal Cancer Screening," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
134. D.S. Paik, C.F. Beaulieu, R.B. Jeffrey, Jr., S. Napel, "Virtual Colonoscopy Visualization Modes using Cylindrical and Planar Map Projections: Technique and Evaluation," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
135. Yan C, Beaupre G, Whalen RT, Napel S. "CT Beam Spectrum Estimation for Precise and Accurate Quantitative Computed Tomography (QCT)," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
136. E.L. Yuh, R.L. Birdwell, R.B. Jeffrey, Jr., D.M. Ikeda, S. Napel, "Three-dimensional Ultrasound Performed using Perspective Volume Rendering: Technique and Potential Clinical Applications," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
137. S. Shiffman, R.Y. Shifrin, C.F. Beaulieu, S. G. Heiss, G.D. Rubin, B. Daniel, S. Napel, "Semiautomated Blood Vessel Segmentation from CT Angiograms: Comparison of Computer-generated to Human-generated Results," Radiological Society of North America 84th Scientific Sessions, Chicago, November 1998.
138. D. Fleischmann, D.S. Paik, S. Napel, GD Rubin, "Quantitative CT Angiography of the abdominal aorta in healthy adults," European Congress of Radiology, March 7-12 99 (exhibit).

139. C.F. Beaulieu, C.A. Karadi, R.B. Jeffrey Jr., G.D. Rubin, D. Fleischmann, S. Napel, "Multidetector Spiral CT Colonography: Maintaining Image Quality with Rapid Acquisition." Society of Computed Body Tomography and Magnetic Resonance, Twenty Second Annual Course, New Orleans, LA 1999. *Awarded cum laude.*
140. D.S. Paik, C.F. Beaulieu, R.B. Jeffrey, Jr., C.A. Karadi, S. Napel, "Detection of Polyps in CT Colonography: A Comparison of a Computer-Aided Detection Algorithm to 3D Visualization Methods," Radiological Society of North America 85th Scientific Sessions, Chicago, November 1999.
141. D.S. Paik, C.F. Beaulieu, R.B. Jeffrey, Jr., C.A. Karadi, S. Napel, "Evaluation of Radiologist Performance in Polyp Detection using Map Projection Virtual Colonoscopy," Radiological Society of North America 85th Scientific Sessions, Chicago, November 1999.
142. B.A. Ross, D.S. Paik, T. Sumanaweera, J. Hossack, R.B. Jeffrey, Jr., S. Napel, "Screening for Carotid Artery Stenosis using 3D Ultrasound and Automated Quantification Algorithms," Radiological Society of North America 85th Scientific Sessions, Chicago, November 1999.
143. D. Fleischman, G.D. Rubin, D.S. Paik, S.Y. Yen, C.F. Beaulieu, S. Napel, "Helical Artifacts in 1-Slice and 4-Slice CT: Quantitative and Qualitative Effects of Scanning Parameters and Object Position on a Simulated Blood Vessel Phantom," Radiological Society of North America 85th Scientific Sessions, Chicago, November 1999. *Awarded RSNA Research Trainee Prize*
144. C.F. Beaulieu, D.S. Paik, S. Napel, J. Yee, C. Coulam, A. Steinauer, B.J. Betts, R.B. Jeffrey, Jr. "Computer-Aided Polyp Detection Improves Reading Efficiency in CT Colonography," Annual Scientific Meeting, SCBT/MR, San Diego, CA, 4/00. *Winner of the Hounsfield Award for Outstanding Scientific Paper.*
145. D. Steines, C. Cheng, A. Wong, J. Tsai, S. Napel, P. Lang, "Segmentation of Osteoarthritic Femoral Cartilage Using Live Wire," 8th Annual ISMRM, Denver, Colorado, April 2000.
146. H. Xu, D.S. Paik, B. Ross, T.S. Sumanaweera, J. Hossack, R.B. Jeffrey, Jr., S. Napel, "Automated Quantification of 4D Ultrasound for Carotid Artery Disease," 14th Computer Assisted Radiology and Surgery, San Francisco, June 2000.
147. S. Shiffman, S. Napel, "Automatic Selection of Blood-Vessel Regions from Preprocessed Image Sequences: Method and Evaluation," 14th Computer Assisted Radiology and Surgery, San Francisco, June 2000.
148. D. Steines, C. Cheng, A. Wong, F. Berger, S. Napel, P. Lang, "Segmentation of Osteoarthritic Femoral cartilage from MR Images," 14th Computer Assisted Radiology and Surgery, San Francisco, June 2000.
149. J. Yee, A. M. Steinauer-Gebauer, C. F. Beaulieu, D. S. Paik, P. W. Hung, S. Napel, "Clinical Application of a Computer Automated Distention Quantification Method for CT Colonography," 2nd International Symposium on Virtual Colonoscopy, Boston, Oct. 2000.
150. P. Hung, D.S. Paik, S. Napel, J. Yee, A. Steinauer-Gebauer, R.B. Jeffrey, J. Min, A. Jathavedam, C.F. Beaulieu, "Comparison of Computerized Methods for Quantifying Bowel Distension in CT Colonography using Three Different Metrics:

Validation in Colon Phantoms," 2nd International Symposium on Virtual Colonoscopy, Boston, Oct. 2000.

151. F. Zhuge, S. Napel, D. Paik, G. D. Rubin, "Automatic Detection and Quantification of Abdominal Aortic Thrombus in CT Angiograms Based on Clustering and Global Geometric Information," Radiological Society of North America 86th Scientific Sessions, Chicago, November 2000.
152. R. Raman, S. Napel, C.F. Beaulieu, E. Bain, R.B. Jeffrey Jr., G.D. Rubin, "Automated Generation of Curved Planar Reformations from Volume Data: Method and Evaluation," Radiological Society of North America 86th Scientific Sessions, Chicago, November 2000.
153. D.S. Paik, C.F. Beaulieu, J. Yee, A.M. Steinauer-Gebauer, R.B. Jeffrey, Jr., S. Napel, "Computer Aided Detection of Polyps in CT Colonography: Free Response ROC Evaluation of Performance," Radiological Society of North America 86th Scientific Sessions, Chicago, November 2000.
154. S. Napel, H. Xu, D.S. Paik, T.S. Sumanaweera, J. Hossack, R.B. Jeffrey, Jr., "Computed-aided detection of carotid disease using 3D Ultrasound," Radiological Society of North America 86th Scientific Sessions, Chicago, November 2000.
155. P. Hung, D. Paik, S. Napel, R.B. Jeffrey, Jr., J. Yee, C.F. Beaulieu, "Comparison of Computerized Methods for Quantifying Bowel Distension in CT Colonography using Three Different Metrics: Validation in Colon Phantoms," Radiological Society of North America 86th Scientific Sessions, Chicago, November 2000.
156. J. A. Hossack, T. S. Sumanaweera, S. Napel, 'Quantitative 3D Ultrasound Imaging Using an Automated Image Tracking Technique', Proceedings of the IEEE Ultrasonics Symposium. Vol. 2, pp. 1593 – 1596, 2000
157. B. Acar, S. Napel, D.S. Paik, P. Li, J. Yee, R.B. Jeffrey, Jr., C.F. Beaulieu, "Medial Axis Registration Of Supine And Prone CT Colonography Data," 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, October 2001.
158. B. Acar, C.F. Beaulieu, D.S. Paik, S.B. Gokturk, C. Tomasi, J. Yee, S. Napel, "Assessment Of An Optical Flow Field-Based Polyp Detector For CT Colonography," 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, October 2001.
159. S.B. Gokturk, C. Tomasi, B.A car, D. Paik, C. Beaulieu, S. Napel, "A New 3-D Volume Processing Method For Polyp Detection," 23rd Annual International Conference of the IEEE Engineering in Medicine and Biology Society, Istanbul, October 2001.
160. S.B. Gokturk, C. Tomasi, B. Acar, D.S. Paik, C.F. Beaulieu, S. Napel, "Statistical Approach for Computer Aided Detection (CAD) of Colonic Polyps," Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
161. C.H. Coulam, D.S. Paik, S. Napel, G. D. Rubin, "Evaluation of a Gold Standard for Computer Aided Detection of Lung Nodules," Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
162. D.S. Paik, S. Napel, C.H. Coulam, D. Naidich, G.D. Rubin, "Computer Aided Detection of Lung Nodules in CT: Preliminary Results," Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.

163. B. Acar, C.F. Beaulieu, D.S. Paik, J. Yee, C. Tomasi, S. Napel, S.B. Gokturk, R.B. Jeffrey, Jr., "Computer Aided Detection of Colonic Polyps In CT Colonography Using Optical Flow Fields," Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
164. B. Acar, S. Napel, D.S. Paik, P. Li, J. Yee, C.F. Beaulieu, R.B. Jeffrey, Jr.," Registration of Supine and Prone CT Colonography Data: Method and Evaluation," Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
165. R. Raman, S. Napel, G. D. Rubin, "Curved Thin Slab Maximum Intensity Projections (CTS-MIP): Method and Evaluation for CT Angiography," Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
166. R. Raman, S. Napel, D.S. Paik, G. D. Rubin, "Quantification of Aortoiliac Irregularity in Patients with Abdominal Aortic Aneurysms: Method and Evaluation", Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
167. D. S. Paik, C. F. Beaulieu, A. Mani, R. Prokesch, J. Yee, R.B. Jeffrey, Jr., S. Napel, "Evaluation of Computer Aided Detection in CT Colonography: Potential Applicability to a Screening Population," Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
168. F. Zhuge, S. Napel, S. Shiffman, G. D. Rubin, "Automated Aortic Flow-channel Segmentation: Method and Comparison with Manual Segmentation," Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
169. J. Yee, R.H. Thornton, N.N. Kumar, A.M. Steinauer-Gebauer, P.W. Hung, D.S. Paik, C.F. Beaulieu, S. Napel, "Automated quantification of distention for CT Colonography," Radiological Society of North America 87th Scientific Sessions, Chicago, November 2001.
170. J. Lyo, D.S. Paik, F. Zinck, D. Naidich, S. Napel, G.D. Rubin, "Computer-aided Detection (CAD) of Lung Nodules: Application to a Population Suspicious for Nodules on Chest X-Ray (CXR)," Radiological Society of North America 88th Scientific Sessions, November 2002.
171. J. Lyo, D.S. Paik, L. Chow, A.N. Leung, S. Napel, G.D. Rubin, "Detection (CAD)-Reader Pairing for the Detection of Lung Nodules," Radiological Society of North America 88th Scientific Sessions, November 2002.
172. B. Acar, C.F. Beaulieu, D.S. Paik, J. Yee, R.B. Jeffrey, Jr., S. Napel, "3D Differential Descriptors For Improved Computer-aided Detection (CAD) of Colonic Polyps in Computed Tomography Colonography (CTC)," Radiological Society of North America 88th Scientific Sessions, November 2002.
173. A. Mani, S. Napel, D.S. Paik, E.O. Olcott, J.Yee, C.F. Beaulieu, R. Prokesch, R.B. Jeffrey, Jr., P.K. Schraedley, "CT Colonography: Improved Polyp Detection Sensitivity and Efficiency with Computer Aided Detection (CAD)," Radiological Society of North America 88th Scientific Sessions, November 2002.
174. S.B. Gokturk, M. Bilello, S. Napel, C. Tomasi, R. B. Jeffrey, Jr., C. F. Beaulieu, "Automatic Classification of Cysts and Metastases in Hepatic CT: Method and Evaluation," Radiological Society of North America 88th Scientific Sessions, November 2002.

175. F. Zhuge, S. Napel, R. Raman, B. Raman, G. D. Rubin, "A Discrete Deformable Contour Model for Segmentation of Abdominal Aortic Thrombus," Radiological Society of North America 88th Scientific Sessions, November 2002.
176. M. Bilello, S. B. Gokturk, C. F. Beaulieu, R. B. Jeffrey, Jr., S. Napel, "Automatic Detection of Hypodense Hepatic Lesions On Contrast-enhanced Venous-Phase CT: Method and Evaluation," Radiological Society of North America 88th Scientific Sessions, November 2002.
177. P. Sundaram, C. F. Beaulieu, D. S. Paik, P. K. Schraedley, R. B. Jeffrey, S. Napel, "CT Colonography: Does Improved Through-Plane (Z) Resolution Aid Computer-Aided Detection (CAD) of Polyps?" Radiological Society of North America 88th Scientific Sessions, November 2002.
178. D.S. Paik, C.F. Beaulieu, G.D. Rubin, B. Acar, R.B. Jeffrey, Jr., S. Napel, J. Yee, D. Naidich, "Optimization and Evaluation of a Computer Aided Detection (CAD) Algorithm for Both Colonic Polyps and Lung Nodules in CT," Radiological Society of North America 88th Scientific Sessions, November 2002.
179. P. Li, S. Napel, D.S. Paik, B. Acar, R.B. Jeffrey, Jr., C.F. Beaulieu, "A Statistical Approach for Registration of Polyps Detected in Prone and Supine CT Colonography (CTC)," Radiological Society of North America 88th Scientific Sessions, November 2002.
180. B. Raman, R. Raman, D. N. Baek, G.D. Rubin, S. Napel, "Automated Measurement of Aorto-aortic and Aortoiliac Angulation for CT Angiography (CTA) of Abdominal Aortic Aneurysms (AAAs) Prior to Endograft Repair," Radiological Society of North America 88th Scientific Sessions, November 2002.
181. R. Raman, B. Raman, W. Hundt, L. Chow, S. Napel, G.D. Rubin, "Improved Speed of Bone Removal in CT Angiography (CTA) using Automated Targeted Morphological Separation: Method and Evaluation in CTA of the Lower Extremity Occlusive Disease (LEOD)," Radiological Society of North America 88th Scientific Sessions, November 2002.
182. R. Raman, B. Raman, M. Sofilos, F. Zhuge, G.D. Rubin, S. Napel, "Automated Quantification of Arterial Calcification using CT Angiography (CTA): Method and Evaluation," Radiological Society of North America 88th Scientific Sessions, November 2002.
183. R. Raman, B. Raman, M. Sofilos, F. Zhuge, G.D. Rubin, S. Napel, "Automated Measurement of Diameters and Volumes of Abdominal Aortic Aneurysm (AAA) using Multiscale 3D Texture Analysis," Radiological Society of North America 88th Scientific Sessions, November 2002.
184. B. Raman, R. Raman, C. Liu, J. Frisoli, S. Napel, G.D. Rubin, "Automatic Identification of Major Arteries and their Ostia for Postprocessing of CT Angiographic (CTA) Studies of the Chest, Abdomen and Pelvis," Radiological Society of North America 88th Scientific Sessions, November 2002.
185. A. Sherbondy, D. Holmlund, P. K. Schraedley, G. D. Rubin, T. Winograd, S. Napel, "Alternative Input Devices for Efficient Navigation of Large CTA Studies," Radiological Society of North America 88th Scientific Sessions, November 2002.
186. Y. Masutani, T. Yoshikawa, S. Aoki, K. Ohtomo, A. Sherbondy, S. Napel, "EPI Distortion Correction for MR-DTI by using Texture Memory on Graphics

- Hardware." 17th International Congress on Computer Assisted Radiology and Surgery. London, 2003.
187. F. P. Chan, W. Lin, S. Napel, "Correlative Filtering to Improve Automated Center Path Generation For MDCT Coronary Angiography," Radiological Society of North America 89th Scientific Sessions, April 2003.
 188. P. Li, S. Napel, D.S. Paik, B. Acar, R.B. Jeffrey Jr., C.F. Beaulieu, "CT Supine and Prone Colon Data Registration: Algorithm Evaluations," Radiological Society of North America 89th Scientific Sessions, November 2003.
 189. B. Raman, R. Raman, M. Carnethon, S. P. Fortmann, S. Napel, G. D. Rubin, "Calcium Quantification In The Aortoiliac Arteries: Interscan Variability of Agatston Scoring vs. Automated Mass Quantification In Noncontrast and Contrast Enhanced Scans," Radiological Society of North America 89th Scientific Sessions, November 2003.
 190. A. Sherbondy, M. Houston, S. Napel, "Interactively Guided Volumetric Segmentation using Programmable Graphics Hardware," Radiological Society of North America 89th Scientific Sessions, November 2003.
 191. G. D. Rubin, D. Naidich, A. Sherbondy, J. Lyo, S. Napel, "Inadequacy of lung nodule reference standard based upon standard methods of expert consensus review using cine-paging of transverse thin-section MDCT lung scans," Radiological Society of North America 89th Scientific Sessions, November 2003.
 192. G. D. Rubin, J. Lyo, A. Sherbondy, D. Naidich, S. Napel, "Impact of Computer-Assisted Detection (CAD) Algorithm versus a Second Radiologist on Reader Sensitivity for Detecting Pulmonary Nodules in MDCT Scans," Radiological Society of North America 89th Scientific Sessions, November 2003.
 193. D.S. Paik, A. Sherbondy, S. Flunker, S. Napel, G.D. Rubin, R.A. Barth, "Feasibility of Computer Aided Detection of Metastatic Pulmonary Nodules from Chest CT in Children: Initial Results," Society for Pediatric Radiology 47th Annual Meeting, April 2004.
 194. P. Sundaram, D.S. Paik, E.D. Sifakis, C.F. Beaulieu, S. Napel, "Selective Fold Removal in CT colonography using physically-based simulation," Fifth International Symposium on Virtual Colonoscopy, Boston, MA October 28-29, 2004.
 195. D.S. Paik, B. Acar, E. Konukoglu, C.F. Beaulieu, S. Napel, "Computer-aided Detection of Polyps in Virtual Colonoscopy using 3D Heat Diffusion Fields," Fifth International Symposium on Virtual Colonoscopy, Boston, MA October 28-29, 2004.
 196. R. Shi, D. Margolis, S. Napel, R.B. Jeffrey, Jr., E. Olcott, P. Schraedley-Desmond, C.F. Beaulieu, "CAD in colonography: Influence of Polyp Features and 3D Viewing on Interpretation," Fifth International Symposium on Virtual Colonoscopy, Boston, MA October 28-29, 2004.
 197. D.S. Paik, P. Sundaram, C.F. Beaulieu, S. Napel, "Anatomically-selective Morphological Enhancement and Suppression in CT Colonography: Initial Experience," Fifth International Symposium on Virtual Colonoscopy, Boston, MA October 28-29, 2004.

198. C. Jude, A. J. Sherbondy, P. Schraedley-Desmond, S. Napel, G. D. Rubin, "Radiologist Characterization Of Lung Nodule Candidates Detected By Computer Aided Detection (CAD): Comparison Of Visualization Methods," Radiological Society of North America 90th Scientific Sessions, November 2004.
199. S. Sun, G.D. Rubin, S. Napel, "A Simulated Annealing-Based Algorithm For Lung Nodule Registration In CT Scans," Radiological Society of North America 90th Scientific Sessions, November 2004.
200. D. S. Paik, P. Sundaram, C.F. Beaulieu, S. Napel, "An Anatomically Selective Morphological Enhancement And Suppression In CT Colonography: Initial Experience With A Lagrangian Approach," Radiological Society of North America 90th Scientific Sessions, November 2004.
201. P. Sundaram, E. Sifakis, D.S. Paik, C.F. Beaulieu, S. Napel, "Physically based approach to removal of folds in CT Colonography: Proof of concept," Radiological Society of North America 90th Scientific Sessions, November 2004.
202. D. Fleischmann, M. Straka, M. Sramek, A. La Cruz, A. Koechl, A. Kanitsar, T. Rakshe, S. Napel, J. Lammer, E. Groeller. "AngioVis: Computer Graphics for Clinical Visualization of Peripheral Arterial Occlusive Disease. *Europ Radiol* 15 (Suppl 1):574-575, 2005.
203. E. Konukoglu, B. Acar, D. S. Paik, C. F. Beaulieu, S. Napel, "Heat Diffusion Based Detection Of Colonic Polyps In CT Colonography," 13th Annual European Signal Processing Conference, Antalya, Turkey, Sept. 4-8, 2005.
204. S. K. Balci, B. Acar, D. S. Paik, C. F. Beaulieu, S. Napel, "Registration of Supine and Prone CT Colonography Data Using Dynamic Time Warping: Method and Evaluation," Radiological Society of North America 91st Scientific Sessions, November 2005.
205. E. Konukoglu, B. Acar, D. S. Paik, C. F. Beaulieu, S. Napel, "Polyp Enhancement Scheme for Improved Detection of Colonic Polyps in CT Colonography, Radiological Society of North America 91st Scientific Sessions, November 2005.
206. R. Shi, P. Schraedley-Desmond, S. Napel, D. J. Margolis, J. Yee, C. F. Beaulieu, et al., "Computer Aided Polyp Detection in CT Colonography: Influence of 3D Viewing and Features of Polyp Candidates on Interpretation," Radiological Society of North America 91st Scientific Sessions, November 2005.
207. J. Won, G. D. Rubin, B. Raman, S. Napel, "Flattening of the Abdominal Aortic Vascular Tree for Effective Visualization," Radiological Society of North America 91st Scientific Sessions, November 2005.
208. P. Sundaram, E. Sifakis, D. S. Paik, C. F. Beaulieu, S. Napel, "Fold Removal in CT Colonography (CTC): A Physics-based Approach," Radiological Society of North America 91st Scientific Sessions, November 2005.
209. A. Quon, D. J. Margolis, S. Napel, C. F. Beaulieu, S. S. Gambhir, "Pilot Study to Develop and Evaluate Integrated FDG PET/CT Scanning To Perform 3D Virtual Colonoscopy and Bronchoscopy," Radiological Society of North America 91st Scientific Sessions, November 2005.
210. S. Sun, G. D. Rubin, S. Napel, "A Semi-Rigid Model for Lung Nodule Registration in Computed Tomography (CT) Scans," Radiological Society of North America 91st Scientific Sessions, November 2005.

211. T. Rakshe, D. Fleischmann, J. E. Roos, S. Napel, "Automated Tracking of Vascular Centerlines Through CTA Data: A Knowledge-based Approach," Radiological Society of North America 91st Scientific Sessions, November 2005.
212. J. E. Roos, D. Fleischmann, T. Rakshe, M. Straka, M. Sofilos, S. Napel, "Knowledge-based Algorithm for Automated Centerline Interpolation through Femoro-Popliteal Artery Occlusions in Peripheral CT Angiography (CTA)," Society of Computed Body Tomography/Magnetic Resonance, Phoenix, April 2006. *Received SCBT/MR Hounsfield award for outstanding paper.*
213. A. J. Sherbondy, D. L. Akers, R. F. Dougherty, M. Ben-Shachar, S. Napel, B. A. Wandell, "MetroTrac: A Metropolis Algorithm for Probabilistic Tractography," Human Brain Mapping 12th Annual Meeting, Florence, June 2006, NeuroImage 31:S130.
214. R. Shi, S. Napel, J. Rosenberg, L. K. Shin, C. B. Freeman, M. B. Mogensen, A. J. Joshi, P. Pankhudi, C. F. Beaulieu, "Transparent Rendering of Intraluminal Contrast for 3D Polyp Visualization in CT Colonography," 7th International Symposium for Virtual Colonoscopy, Boston, November 2006.
215. P. Sundaram, C. F. Beaulieu, S. Napel, "Colon Polyp Detection Using Smoothed Shape Operators," 7th International Symposium for Virtual Colonoscopy, Boston, November 2006.
216. L. K. Shin, B. Hargreaves, A. C. S. Brau, S. Banerjee, S. Napel, R. B. Jeffrey Jr., C. F. Beaulieu, R. J. Herfkens, "MR Colonography at 3T Using Autocalibrating Reconstruction for Cartesian (ARC) Sampling – Initial Experience," 7th International Symposium for Virtual Colonoscopy, Boston, November 2006.
217. P. Sundaram, C. F. Beaulieu, S. Napel, "A Curvature Scale-Space Approach to Computer-Aided Detection (CAD) of Polyps in CT Colonography (CTC)," Radiological Society of North America 92nd Scientific Sessions, November 2006.
218. M. Kukuk, H. Arakawa, M. P. Marks, H. M. Do, S. Napel, "Rotational Roadmapping: A Contrast- and Time-Efficient Navigation Technique Based on a Single Acquisition of Multiple Views," Radiological Society of North America 92nd Scientific Sessions, November 2006.
219. S. Sun, G. D. Rubin, F. Zhuge, S. Napel, "Lung Nodule Registration Using a Semi-Rigid Model and a Knowledge-Enhanced Simulated Annealing Optimizer," Radiological Society of North America 92nd Scientific Sessions, November 2006.
220. R. Shi, C. F. Beaulieu, J. K. Rosenberg, L. K. Shin, M. A. Mogensen, C. Freeman, A. Joshi, P. Pankhudi, S. Napel, "Transparent Rendering of Intraluminal Contrast for 3D Polyp Visualization in CT Colonography," Radiological Society of North America 92nd Scientific Sessions, November 2006.
221. T. Rakshe, D. Fleischmann, J. K. Rosenberg, J. E. Roos, S. Napel, "Statistical Evaluation of a Principal Component Analysis (PCA)-based Algorithm for Reconstructing Centerlines in Missing Vascular Segments in CT Angiography (CTA)," Radiological Society of North America 92nd Scientific Sessions, November 2006.
222. D. Tran, D. Fleischmann, T. Rakshe, J. E. Roos, J. K. Rosenberg, S. Napel, "Peripheral CT Angiography (CTA): Can Contralateral Shape Information Be Used

- to Interpolate Occluded Femoro-popliteal Arterial Centerlines?" Radiological Society of North America 92nd Scientific Sessions, November 2006.
223. D.N. Tran, J.E. Roos, M. Straka, D. Sandner, H. Razavi, M. Chang, N. Pelc, S. Napel, D. Fleischmann, "Promises and Limitations of Dual-Energy CT in Lower Extremity CT Angiography," Society of Computed Body Tomography /Magnetic Resonance, Orlando, March 2007, *Received SCBT/MR In-Training Award for outstanding young investigator.*
 224. A. J. Sherbondy, S. S. Blemker, E. M. Arnold, S. Napel, S. L. Delp, and G. E. Gold, "Measuring human gastrocnemius pennation angle utilizing most likely pathway distributions in diffusion tensor imaging," ISMRM, Berlin, May 2007.
 225. J. E. Roos, D. A. Olsen, D. S. Paik, S. Napel, E. G. Liu, G. D. Rubin, "Potential Equalization of Radiologists' Diagnostic Performance with the use of Computer Aided Detection (CAD) as a Second Reader in Lung Nodule Detection on Chest CT," Radiological Society of North America 93rd Scientific Sessions, November 2007.
 226. D. A. Olsen, D. S. Paik, J. E. Roos, S. Napel, G. D. Rubin, "External Validity of Cross-Validation on Computer-aided Detection (CAD) of Lung Nodules Enabled by the LIDC Dataset," Radiological Society of North America 93rd Scientific Sessions, November 2007.
 227. C. Yi, D. A. Olsen, J. E. Roos, D. S. Paik, S. Napel, G. D. Rubin, "Characteristics of True Positive (TP) Lung Nodules Detected by Computer-aided Detection (CAD) but Subsequently Rejected by Radiologists on Chest MDCT Scans," Radiological Society of North America 93rd Scientific Sessions, November 2007.
 228. M. Kukuk, J. Rosenberg, S. Napel, "Co-Visualization of Stereoscopic and Monoscopic Images for Instrument Navigation in the Interventional Room," Radiological Society of North America 93rd Scientific Sessions, November 2007.
 229. G. Chuyeshov, M. Kukuk, S. Napel, "Localizing a guidewire in three dimensions during endovascular interventions using single-view fluoroscopy and a stereo roadmap: method and feasibility study," Radiological Society of North America 93rd Scientific Sessions, November 2007.
 230. D. A. Olsen, J. E. Roos; D. S. Paik, S. Napel, G. D. Rubin, "Influence of Lung Nodule Characteristics on Computer-aided Detection (CAD) based on the Lung Imaging Database Consortium (LIDC) CT Dataset," Radiological Society of North America 93rd Scientific Sessions, November 2007.
 231. P. Sundaram, C. F. Beaulieu, R. Shi, J. Yee, E. W. Olcott, S. Napel, "A Pilot Study Evaluating the Efficiency Of "Patch View": A New Paradigm for Reviewing the Output of a Computer-Aided Polyp Detection Method," Radiological Society of North America 93rd Scientific Sessions, November 2007.
 232. A. J. Sherbondy, R. Dougherty, M. Ben-Shachar, S-Ha. Cheung, S. Napel, B. A. Wandell, "Identifying the most likely white matter pathways between two brain regions," Society for Neuroscience Annual Meeting, San Diego, November 2007.
 233. X. Zhuang, D. Lin, J. Faruque, O. Oralkan, S. Napel, R. B. Jeffrey, Jr., B. T. Khuri-Yakub, "A 5-Plane CMUT Array for Operator-Independent Carotid Artery Screening: Initial Results," accepted to IEEE International Ultrasonics Symposium Beijing, Nov. 2-5, 2008.

234. J. Faruque, O. Oralkan, R. B. Jeffrey Jr., B. T. Khuri-Yakub, S. Napel, "Automated Detection of Carotid Peak Blood Velocity (PBV) Using a Novel Transducer Array and Intelligent Software: Feasibility Study," Radiological Society of North America 94th Scientific Sessions, November 2008.
235. F. Schmitzberger, J. Roos, S. Napel, G. D. Rubin, D. S. Paik, "A Thin Client 2D+3D Architecture for Coordinating Multicenter CAD Trials," Radiological Society of North America 94th Scientific Sessions, November 2008.
236. D. S. Paik, A. Aggarwal, D. Olsen, J. Roos, G. D. Rubin, S. Napel, "Lung Nodule CAD False Positive Reduction Using a Novel Non-parametric Shape Analysis Approach in Chest CT," Radiological Society of North America 94th Scientific Sessions, November 2008.
237. D. S. Paik, K. R. Choudhury, C. A. Yi, G. D. Rubin, S. Napel, "Assessing Operating Characteristics of CAD Algorithms in the Absence of a Gold Standard," Radiological Society of North America 94th Scientific Sessions, November 2008.
238. J. H. Won, G. Rubin, H. Wong, J. Roos, J. Rosenberg, S. Napel, "Towards a Single Uncluttered View of the Abdominal Aortic Vessel Tree from CTA or MRA: Method and Preliminary Results," Radiological Society of North America 94th Scientific Sessions, November 2008.
239. D. Lin, X. Zhuang, J. Faruque, Ö. Oralkan, S. Napel, R.B. Jeffrey, and B.T. Khuri-Yakub, "Carotid Peak Blood Velocity Detection using a 5-Plane CMUT Array with Asymmetric Acoustic Lens: Initial Results," IEEE Ultrasonics Symposium, Rome, September 2009.
240. M. Tall, D. L. Ly, F. F. Schmitzberger, D. Rasooly, T. J. Kim, J. E. Roos, D. S. Paik, S. Napel, G. D. Rubin, "Mapping Eye Movements in Three-Dimensions: Analyzing Gaze Paths when Interpreting Volumetric Chest CT Data," 13th Medical Image Perception Conference, Santa Barbara, October 2009.
241. D. L. Rubin, C. Rodriguez, S. Napel, C. F. Beaulieu, MD, "iPad: a Tool for Creating Semantic Annotations in Radiology Images," Radiological Society of North America 95th Scientific Sessions, November 2009.
242. A. Gupta, S. Napel, H. Greenspan, C. F. Beaulieu, D. L. Rubin, "Quantifying Margin Characteristics of Lesions from CT Images for Content Based Image Retrieval," Radiological Society of North America 95th Scientific Sessions, November 2009.
243. F. Schmitzberger, T. Kim, J. E. Roos, S. Napel, G. D. Rubin, D. S. Paik, "Assessing Display Quality for Trials on Lung-nodule CT-Scans Using Existing Non-specialized Monitors," Radiological Society of North America 95th Scientific Sessions, November 2009.
244. D. L. Rubin, C. F. Beaulieu, C. Rodriguez, D. Korenblum; S. Napel, "Tools to Support Incorporating Semantic Annotation and Markup of Images, and Query for Image Attributes, into Research/Clinical Workflow," Society of Imaging Informatics in Medicine, Charlotte, NC, June 2009.
245. S. Napel, C.F. Beaulieu, J. Faruque, C. Rodriguez, D. Korenblum, J. Cui, J. Xu, A. Gupta, H. Greenspan, G. Tye, D.L. Rubin, "Content-based Image Retrieval: Portal Venous CT of Liver Lesions," Society of Imaging Informatics in Medicine, June 2010.

246. G. D. Rubin, M. Tall; K. Roychoudhury, J. E. Roos, D. S. Paik, D. Ly, S. Napel, "Perception of Lesions in the Gaze Cone Periphery: Impact of Lesion Size, Distance, and Local Lung Complexity on Detection," Radiological Society of North America 96th Scientific Sessions, November 2010.
247. D. L. Rubin, S. Napel, M. P. Federle, R. B. Jeffrey, B. H. Do, C. Harrigal, D. Abelson, K. Klang, P. Ghanouni, C. F. Beaulieu, "Reader Variation in CT Imaging Interpretation of Focal Liver Lesions," Radiological Society of North America 96th Scientific Sessions, November 2010.
248. M. Tall, S. Napel, F. F. Schmitzberger, J. E. Roos, D. S. Paik, G. D. Rubin MD, "Acquiring and Visualizing Volumetric Eye Gaze Paths through Chest CT Data," Radiological Society of North America 96th Scientific Sessions, November 2010.
249. K. Roychoudhury, S. Napel, D. S. Paik, C. Yi, J. E. Roos, G. D. Rubin, "Assessing the effect of morphological characteristics (MC) on CAD-assisted detection of pulmonary nodules in CT by probit regression (PR)," Radiological Society of North America 96th Scientific Sessions, November 2010.
250. D. L. Rubin, C. F. Beaulieu, C. Rodriguez, C. Baldassano, S. Napel, "Reinventing Radiology Reporting: Combining Structured Capture and Radiology Image Annotation," Radiological Society of North America 96th Scientific Sessions, November 2010.
251. O. Gevaert, J. Xu, C. D. Hoang, A. N. C. Leung, A. Quon, D. Rubin, S. Napel, S. K. Plevritis, "Integrating Medical Images and Transcriptomic Data in Non-Small Cell Lung Cancer," Association of Cancer Research, Orlando, April 2011.
252. C. D. Hoang, S. Napel, O. Gevaert, Y. Xu, D. Rubin, A. N. C. Leung, A. Quon, R. E. Merritt, R. I. Whyte, J. B. Shrager, S. K. Plevritis, "NSCLC Gene Profiles Correlate with Specific CT Characteristics: "Image-omics"," 91st Annual American Association for Thoracic Surgery, Philadelphia, PA, May 7-11, 2011.
253. K. Roychoudhury, M. Tall, J. E. Roos, S. Napel, G. D. Rubin, "Analysis Of Gaze Tracking Data From Radiologists Free Search Of Volumetric CT Data," Medical Image Perception Society, Dublin Ireland, August 9-12, 2011.
254. H. Takaoka, N. Funabashi, R. Raman, K. Fukushima, Y. Kobayashi, S. Napel, et al., "Detection of >75% Stenosis in Quantitative Coronary Angiography by Iodinate Contrast Opacification Gradients in Coronary Artery with Regard to Distance from the Ostium by 320-Slice Computed Tomography," Radiological Society of North America 97th Scientific Sessions, November 2011.
255. H. Takaoka, N. Funabashi, R. Raman, K. Fukushima, Y. Kobayashi, S. Napel, et al., "Detection of suture-break and stent-fracture after endovascular abdominal aortic repair using Multislice CT angiography: Impact of 3D reformation technique on detection compared with axial 2D image," Radiological Society of North America 97th Scientific Sessions, November 2011.
256. S. K. Plevritis, O. Gevaert, J. Xu, C. D. Hoang, D. L. Rubin, S. Napel, et al., "Rapid Identification Of Prognostic Imaging Biomarkers For Non-Small Lung Carcinoma (NSCLC) By Integrating Image Features And Gene Expression And Leveraging Public Gene Expression Databases," Radiological Society of North America 97th Scientific Sessions, November 2011.

257. S. Napel, C. D. Hoang, J. Xu, O. Gevaert, D. L. Rubin, S. K. Plevritis, et al., "Computational And Semantic Annotation Of CT And PET Images And Integration With Genomic Assays Of Tumors In Non- Small Cell Lung Cancer (NSCLC) For Decision Support And Discovery: Method And Preliminary Results," Radiological Society of North America 97th Scientific Sessions, November 2011.
258. J. S. Faruque, D. L. Rubin, C. F. Beaulieu, A. Kamaya, G. A. Tye, S. Napel, et al. "A Scalable Reference Standard for Perceptual Similarity of CT Liver Lesions using Matrix Completion Techniques," Radiological Society of North America 97th Scientific Sessions, November 2011.
259. J. Xu, H. Greenspan, S. Napel, D. L. Rubin, "Automated Temporal Tracking And Segmentation Of Lymphoma On Serial CT Examinations," Radiological Society of North America 97th Scientific Sessions, November 2011.
260. J. Xu, J. S. Faruque, C. F. Beaulieu, D. L. Rubin, S. Napel, "A Comprehensive Descriptor of Shape: Method and Application to Retrieval of Similar Appearing Lesions in Medical Images," Radiological Society of North America 97th Scientific Sessions, November 2011.
261. F. J. Gimenez, J. Xu, T. Liu, C. F. Beaulieu, D. L. Rubin, S. Napel, et al. "Prediction of radiologist observations using computational image features: Method and Preliminary Results," Radiological Society of North America 97th Scientific Sessions, November 2011.
262. O. Gevaert, L. A. Mitchell, J. Xu, C. Yu, D. L. Rubin, G. Zaharchuk, S. Napel, S. K. Plevritis, "Radiogenomic analysis indicates MR images are potentially predictive of EGFR mutation status in glioblastoma multiforme," Association of Cancer Research, Chicago, March 2012.
263. V. S. Nair, O. Gevaert, G. Davidzon, S. Napel, E. Graves, C. D. Hoang, A. Quon, D. L. Rubin, S. K. Plevritis, "Non-small Cell Lung Cancer Tumor ¹⁸F-FDG Uptake is Associated with Gene Dysregulation Beyond Glycolysis," American Thoracic Society, San Francisco, May 2012.
264. X. Wang, A. N. C. Leung, I. Chan, S. K. Plevritis, C. D. Hoang, D. L. Rubin, S. Napel, "A 3D multiple-layer region-growing algorithm for automated 3D segmentation of pulmonary tumors seen on volumetric CT scans," Radiological Society of North America 98th Scientific Sessions, November 2012.
265. J. S. Faruque, D. L. Rubin, C. F. Beaulieu, J. Rosenberg, S. Napel, "A Statistical Model for Predicting Sample Size for Radiologists' Perception of Similarity in Liver Lesions," Radiological Society of North America 98th Scientific Sessions, November 2012.
266. K. Roychoudhury, M. Tall, S. Napel, S. Bag, B. Harrawood, J. Roos, G. D. Rubin, "Analysis of the detection of lung nodules in volumetric CT data by radiology residents using gaze tracking," Radiological Society of North America 98th Scientific Sessions, November 2012.
267. B. R. Shah, J. Xu, B. H. Do, D. L. Rubin, S. Napel, C. F. Beaulieu, "Quantitative Analysis of Focal Bone Tumors on Radiography: Initial Experience Comparing Lucent and Sclerotic Lesions," Radiological Society of North America 98th Scientific Sessions, November 2012.

268. V. T. Tran, D. Weinreb, A. Quon, S. Napel, H. E. Daldrup-Link, "Fusion PET-MR: Correlation Of Contrast Enhancement And 18-FDG-PET Activity For The Development Of An Integrated Scanning Protocol," Annual Meeting of the Society for Pediatric Radiology. *Pediatric Radiology* 43, Suppl. 1, 2013.
269. O. Gevaert, L. Mitchell, J. Xu, S. Napel, G. Zaharchuk, S.K. Plevritis, "Creating a radiogenomics map of multi-omics and quantitative image features in glioblastoma multiforme," Radiological Society of North America 99th Scientific Sessions, December 2013.
270. C. Klenk, V. T. Tran, R. Gawande, S. Napel, A. Quon, H. E. Daldrup-Link, "Correlation of 18F FDG activity and Gd-contrast enhancement of pediatric tumors on PET/MR: The next step towards "one stop shop" tumor staging," Radiological Society of North America 99th Scientific Sessions, December 2013.
271. J. Kalpathy-Cramer, B. Zhao, D. Goldgof, Y. Gu, X. Wang, S. Napel, "A platform for the comparison of lung nodule segmentation algorithms: methods and preliminary results," Radiological Society of North America 99th Scientific Sessions, December 2013.
272. A. Kamaya, S. Vossler, Y. I. Liu, S. Napel, S. Plevritis, A. Holzer, N. Kothary, "Prediction of microvascular invasion in hepatocellular carcinoma," Society of Abdominal Radiology, Boca Raton FL, 2014.
273. H. Itakura, A. S. Achrol, J. J. Loya, L. A. Mitchell, T. D. Azad, S. Echegaray, K. Yeom, S. Napel, G. R. Harsh IV, O. Gevaert, "Glioblastoma Subtypes Defined By Quantitative Imaging Map To Different Canonical Signaling Pathways," 11th Congress of the European Association of Neuro-Oncology, Turin, Italy, Oct. 2014.
274. H. Itakura, A. S. Achrol, J. J. Loya, L. A. Mitchell, T. D. Azad, S. Echegaray, K. Yeom, S. Napel, G. R. Harsh IV, O. Gevaert, "Identification and validation of glioblastoma subtypes using quantitative imaging that map to canonical signaling pathways," Society of Neuro-Oncology Annual Meeting, Miami, FL, Nov. 2014.
275. H. Itakura, A. S. Achrol, T. T. Liu, S. Echegaray, J. J. Loya, A. Feroze, L. A. Mitchell, S. Rodriguez, E. Westbroek S. Cheshier, G. Steinberg, D. Rubin, K. Yeom, S. Napel, G. R. Harsh IV, O. Gevaert, "Development and validation of a quantitative image signature that predicts clinical survival in glioblastoma," Radiological Society of North America 100th Scientific Sessions, December 2014.
276. G. D. Rubin, B. Harrawood, S. Napel, J. E. Roos, K. R. Choudhury, "The Moment of Recognition: Method and Analysis of Gaze Behavior in the Search for Lung Nodules in CT Scans," Radiological Society of North America 101st Scientific Sessions, December 2015.
277. O. Gevaert, S. Echegaray, A. Khuong, C. D. Hoang, J. B. Shrager, S. K. Plevritis, S. Napel, A. N. Leung, "Predictive modeling of epidermal growth factor receptor mutation status using semantic image features in non-small cell lung cancer (NSCLC)," Radiological Society of North America 101st Scientific Sessions, December 2015.
278. O. Gevaert, S. Echegaray, S. Napel, N. Kothary, "Predictive modeling of microvascular invasion using triphasic quantitative imaging of hepatocellular carcinoma (HCC)," Radiological Society of North America 101st Scientific Sessions, December 2015.

279. O. Gevaert, S. Napel, S. Echegaray, A. Khuong, C. D. Hoang, J. B. Shrager, S. K. Plevritis, A. N. Leung, "Radiogenomics mapping of non-small cell lung cancer (NSCLC) identifies prognostic relationships between semantic image features and metagenes captured using RNA sequencing," Radiological Society of North America 101st Scientific Sessions, December 2015.
280. V.S. Nair, A. Garcia, H. Chen, Y. Balagurunathan, T. Atwater, O. Gevaert, S. Antic, M. Schabath, S. Napel, R. Walker, R. Gillies, P. P. Massion, "Validating a radiomic classifier for improved lung cancer prediction of indeterminate pulmonary nodules," American Thoracic Society Annual Meeting, May 2016, San Francisco.
281. M. Zhou, S. Napel, S. Echegaray, A. N. Leung, O. Gevaert, "Radiogenomics Mapping of Non-small Cell Lung Cancer Shows Strong Correlations between Semantic Image Features and Metagenes," Radiological Society of North America 102nd Scientific Sessions, December 2016.
282. C. Letrong, V. Hinostroza, S. Walters, S. Napel, R. Bammer, D. Fleischmann, "The Essential Guide to Starting a Clinical 3DP Program," Radiological Society of North America 102nd Scientific Sessions, December 2016.
283. K. Roychoudhury, B. Harrawood, J. E. Roos, S. Napel, G. D. Rubin, "Multivariate modelling of nodule recognition in 3-d chest CT using gaze tracking," Radiological Society of North America 102nd Scientific Sessions, December 2016.
284. S. Napel, S. Echegaray, D. Gude, O. Gevaert, D. L. Rubin, "The Quantitative Image Feature Pipeline (QIFP) for Discovery, Validation, and Translation of Cancer Imaging Biomarkers," Radiological Society of North America 102nd Scientific Sessions, December 2016.
285. W. Zhang, G. Bouchard, A. Yu, M. Shafiq, M. Jamali, J. Shrager, K. Ayers, V. S. Nair, A. Gentles, M. Diehn, A. Quon, S. Napel, S. K. Plevritis, "FDG uptake in human lung adenocarcinoma associated with invasion through the hexosamine biosynthesis pathway, AACR Annual Meeting, Washington D.C., April 2017.
286. C. Letrong, V. Hinostroza, S. Walters, S. Napel, D. Fleischmann, "Interventional 3D Printing Case Studies," Mayo Clinic 3D Printing Conference, January 2017.
287. C. Letrong, V. Hinostroza, S. Walters, S. Napel, D. Fleischmann, "3D Printing in Mitral Valve Intervention Case Studies," Mayo Clinic 3D Printing Conference, January 2017.
288. M. Shafiq, W. Zhang, A. Gentles, K. Ayers, V.S. Nair, J. Shrager, C. Hoang, O. Gevaert, S. Napel, S. Plevritis, "Using Tissue Gene Expression to Predict Survival Following 'Curative' Surgical Resection in Lung Adenocarcinoma, American Thoracic Society Annual Meeting, Washington D.C., May 19-24, 2017.
289. S. Napel, D. L. Rubin, S. John, D. Gude, S. Echegaray, S. Bakr, D. Gude, et al. "The Quantitative Image Feature Pipeline (QIFP): Automated Radiomic Feature Extraction to Derive Associations with and Prediction of Clinical Variables from Image Features," Radiological Society of North America 103rd Scientific Sessions, December 2017.
290. J. Kalpathy-Cramer, B. Zhao, D. Goldgof, S. Napel, D. L. Rubin, M. F. McNitt-Gray, et al, "Standardizing Radiomic Feature Descriptions for Quantitative Imaging: A Preliminary Report of the Cooperative Efforts of the NCI's QIN PET-CT

Subgroup," Radiological Society of North America 103rd Scientific Sessions, December 2017.

291. S. Bakr, S. Mattonen, PhD; A.L. Garcia, S. Antic, Y. Balagurunathan, T. Atwater, H. Chen, O. Gevaert, R. Walker, M. Schabath, R. Gillies, P. Massion, V. Nair, S. Napel, "A Size-independent Radiomics Model for Classification of Indeterminate Pulmonary Nodules Seen at CT," Radiological Society of North America 103rd Scientific Sessions, December 2017.
292. S. Mattonen, S. Bakr, G. A. Davidzon, V. S. Nair, S. Napel, "Positron Emission Tomography (PET) Tumor Penumbra Radiomics For Prediction of Survival in Non-Small-Cell Lung Cancer: A Pilot Study," Radiological Society of North America 103rd Scientific Sessions, December 2017.
293. V. Hinojosa, C. Letrong, L. Molvin, S. Walters, S. Napel, D. Fleischmann, "Protocoling Imaging Studies with 3D Prints in Mind," Radiological Society of North America 103rd Scientific Sessions, December 2017.
294. C. Letrong, S. Walters, D. Liang, S. Napel, D. Fleischmann, "3D Printing for Treatment Planning: Transseptal Mitral Valve Replacement Case Studies," Radiological Society of North America 103rd Scientific Sessions, December 2017.
295. S. A. Mattonen, G. A. Davidzon, S. Bakr M. Vasanaawala, G. Hornig, S. Napel, V. S. Nair, "Positron Emission Tomography (PET) Tumor Penumbra Imaging Features Predict Outcome in Non-Small Cell Lung Cancer," *submitted to American Thoracic Society Annual Meeting, San Diego, CA, May 18-23 2018.*

Invited Articles

1. G.D. Rubin, S. Napel, "Increased Scan Pitch for Vascular and Thoracic Spiral CT." Letter to the Editor, *Radiology*, **197**(1):316-7, 1995.
2. G.D. Rubin, S. Napel, A.N. Leung, "Volumetric Analysis of Volumetric Data—Achieving a Paradigm Shift," *Editorial, Radiology* **200**(2)312-317, 1996.
3. M.L. Davila, C.F. Beaulieu, D.S. Paik, S. Napel, P.S. Edelstein, R.B. Jeffrey, Jr., "CT and MR Colonography (Virtual Colonoscopy)," *Techniques in Gastrointestinal Endoscopy*, **2**:30-36, 2000.
4. D. S. Katz, N. Venkataramanan, S. Napel. F.G. Sommer, "Low Dose Unenhanced Multidetector Helical CT for the Evaluation of Suspected Renal Colic: Can it be Routinely Utilized?" *American Journal of Roentgenology* **180**:313-315, 2003.
5. C. L. Partain, H-P Chan, J. G. Gelovani, M. L. Giger, J. A. Izatt, F. A. Jolesz, K. Kandarpa, K. C. P. Li, M. McNitt-Gray, S. Napel, R. M. Summers, and G. S. Gazelle, "Biomedical Imaging Research Opportunities Workshop II: Report and Recommendations," *Radiology* **236**: 389-403, 2005.
6. P. Sundaram, D.S. Paik, C.F. Beaulieu, S. Napel, "Algorithmic Colon Polyp Detection: Image Processing or Geometry Processing?" *Proc MICCAI Workshop: Computational and Visualization Challenges in the New Era of Virtual Colonoscopy*, 2008.
7. S. Napel and M. L. Giger, "Radiomics and Imaging Genomics: Quantitative Imaging for Precision Medicine," Editorial written for Special Section on

Invited Presentations

1. S. Napel, "Cine Computed Tomography." IEEE Computer Society—Computer Elements Workshop. Mesa, Arizona, November 1987.
2. S. Napel, "Comparison of 3-D Results by CT and Arteriography in the Same Patient." Symposium on Coronary Artery Calcification — Detection, Quantitation and Prognostic Significance. Miami Beach, Florida, February 1989.
3. S. Napel, "Ultrafast Computed Tomography." Robarts Research Institute, London, Ontario, May 1989.
4. S. Napel, M.P. Marks, G.D. Rubin, M.D. Dake, D.R. Enzmann, C.J. Bergin, D.V. Paranjpe, R.B. Jeffrey, Jr., "CT Angiography Using Continuous Volume CT Scanning with Maximum Intensity Projections for 3D Visualization." Advances in Ultrafast CT, Burlingame, CA, October, 1992
5. S. Napel, "Time Sequence of Flow Information via 3DPC Simulated Streamlines," University of Michigan, Magnetic Resonance Angiography Course and Workshop. Lansing, Michigan, October 14 - 18, 1992.
6. S.A. Napel, M.P. Marks, G.D. Rubin, M.D. Dake, D.R. Enzmann, D.V. Paranjpe, R.B. Jeffrey, Jr., "Three-dimensional CT Angiography Using Spiral CT in the Brain, Neck, Chest, and Abdomen." Cardiovascular Science and Technology Conference (AAMI), Hyatt Regency Bethesda, December 12-14, 1992.
7. S. Napel, "Three-dimensional Vascular Imaging with CT and MR." Hemodynamics and Atherosclerosis Symposium, Stanford University, July, 1993.
8. S. Napel, "CT Angiography: An Update." Advances in Ultrafast CT: 1993 Electron Beam Tomography (EBT) International Symposium, sponsored by the University of Iowa in conjunction with the Harbor-UCLA Medical Center, Miami, Florida, October 8-10, 1993.
9. S. Napel, "MR Physics of Blood Flow." Diagnostic Imaging Update: CT, MR, Chest and Interventional, hosted by Stanford University, Maui, Hawaii, February 21-25, 1994.
10. S. Napel, "3D Image Reconstruction Techniques in CT and MR." Diagnostic Imaging Update: CT, MR, Chest and Interventional, hosted by Stanford University, Maui, Hawaii, February 21-25, 1994.
11. S. Napel, "Technical Considerations in Spiral CT." Diagnostic Imaging Update: CT, MR, Chest and Interventional, hosted by Stanford University, Maui, Hawaii, February 21-25, 1994.
12. S. Napel, "CT for Evaluation of Vascular Disease - How and Why." Vascular Disease 1994: Diagnosis and Treatment postgraduate course, hosted by Stanford University, Monterey, California, October 26-30, 1994.
13. S. Napel, "Fast CT: Is it Different?" American Association of Physicists in Medicine Symposium, Radiological Society of North America, Chicago, IL, November 26 - December 2, 1994.
14. S. Napel, "Computer Technology." Discussion Leader. Virtual Colonoscopy Workshop, National Institutes of Health, National Cancer Institute, Bethesda, MD, June 12, 1995.

15. S. Napel, "CT Image Reconstruction." American Association of Physicists in Medicine Summer School: CT and US Technology and Applications, New London, CT, June 25-29, 1995.
16. S. Napel, "Image Processing and 3D Displays." American Association of Physicists in Medicine Summer School: CT and US Technology and Applications, New London, CT, June 25-29, 1995.
17. S. Napel, "Computed Tomography and Magnetic Resonance Image Fusion for Stereotaxic Treatment of Brain Tumors." The Whitaker Foundation, Snowbird, Utah, August 4-6, 1995.
18. S. Napel, "Virtual Endoscopy and More." Advances in Ultrafast CT 1995: An International Symposium on Electron Beam Tomography, Scottsdale, Arizona, October, 1995.
19. S. Napel, "Virtual Endoscopy," Rapid Prototyping in Medicine and Computer Assisted Surgery, Erlangen, Germany, October 19-21, 1995.
20. S. Napel, G.D. Rubin, C.F. Beaulieu, R.B. Jeffrey, Jr., "Evaluation of Cross-sectional Medical Images using Perspective Rendering — Virtual Endoscopy." Imatron Japan EBCT Symposium, Yokohama, Japan, January 26-27, 1996.
21. S. Napel, Virtual Colonoscopy Workshop (*Follow-up of June 12, 1995 workshop to discuss feasibility of Virtual Colonoscopy for Clinical Application*), National Institutes of Health, National Cancer Institute, Bethesda, MD, March 4, 1996.
21. S. Napel, "3-D CT Imaging for Simulated Endoscopy and Intra-parenchymal Viewing." American Association of Physicists in Medicine Annual Meeting, Philadelphia, July 21-25, 1996.
23. S. Napel, Virtual Colonoscopy Workshop (*Follow-up of June 12, 1995 and March 4, 1996 workshops to discuss feasibility of Virtual Colonoscopy for Clinical Application*), National Institutes of Health, National Cancer Institute, Bethesda, MD, September 13, 1996.
24. S. Napel, "Virtual Reality: Emerging Technology for Diagnosis," College of American Pathologists, San Diego, CA, October 3, 1996.
25. S. Napel, Virtual Endoscopy Panel, MEDTEC 1997, Tysons Corner, VA, August 14-17, 1997.
26. S. Napel, "Virtual Endoscopy: Overview and Recent Developments," Rapid Prototyping in Medicine and Computer Assisted Surgery, Erlangen, Germany, October 16-18, 1997.
27. S. Napel, "Diagnostic Radiology in Three Dimensions: Present and Future," University of Chicago, Radiology Grand Rounds, September 1998.
28. S. Napel, "New Visualization Techniques for Virtual Colonoscopy," 1st International Symposium on Virtual Colonoscopy, Boston, October 1998.
29. S. Napel, "Current State of the Art EBCT 3D Imaging," Advances in Electron Beam Computed Tomography: An International Scientific Symposium, San Francisco, October 16-18, 1998.
30. S. Napel, "Diagnostic Radiology in Three Dimensions," Medicine Meets Virtual Reality at Stanford, January 23, 1999.

31. S. Napel, "Volumetric Display and Analysis of Volume Data," Joint Working Group on Image-guided Diagnosis and Treatment," National Institutes of Health (NCI) and Office of Women's Health Workshop, Washington D.C., April 12-14, 1999.
32. S. Napel, "Volumetric Imagery: Changing the Paradigm of Radiological Interpretation," University of Western Ontario, June 15, 1999.
33. S. Napel, "Volumetric Visualization of Medical Imagery: A New Paradigm for Radiology," Symposium on Visualization in Medicine, American Association of Physicists in Medicine Annual Meeting, Nashville, July 25-29, 1999.
34. S. Napel, "3D Diagnostic Radiology: Present Status and Future Direction," Rapid Prototyping in Medicine and Computer Assisted Surgery, Erlangen, Germany, October 14-16, 1999.
35. S. Napel, "Multidetector CT," Radiology Grand Rounds, November 22, 1999.
36. S. Napel, "Display and Analysis of Volumetric Medical Imagery: Towards a New Paradigm for Radiological Interpretation," Progress in Radiology Series, University of California, San Francisco, January 27, 2000.
37. S. Napel, "Computerized Detection of Polyps in CT Colonography," 14th Computer Assisted Radiology and Surgery, San Francisco, June 2000.
38. S. Napel, "Living with Thousands of Slices: Towards a New Paradigm for Radiological Interpretation," International Society for Strategic Studies in Radiology, San Francisco, August, 2001.
39. S. Napel, "Radiological Data Explosion: The Good, the Bad, and Surviving the Ugly," Rapid Prototyping in Medicine and Computer Assisted Surgery, Nurnberg, Germany, October 11-13, 2001.
40. S. Napel, G.D. Rubin, A.G. Sorensen, "Volumetric Visualization and Analysis: Introduction and Clinical Benefits," AAPM/RSNA Symposium, Arie Crown Theater, November 2002.
41. G.D. Rubin, E.K. Fishman, S. Napel, P.J. Pickhardt, "Three-dimensional Imaging: Where Are We Headed?" Special Focus Session, RSNA, November 2004.
42. S. Napel, "Linking Image features to diseases, molecular phenotypes and outcomes: methods and example in non-small cell lung cancer," S. Napel, International Symposium on BIOMEDICAL IMAGING: From Nano to Macro, San Francisco, April 8, 2013.
43. S. Napel "Spotlight Talk on Radiogenomics," World Molecular Imaging Congress, Sept. 2014, Seoul, Korea.
44. S. Napel, "Oncogene Tumor Heterogeneity Translated to Imaging: Radiomics and Radiogenomics – Decoding Tumor Phenotype using Radiomics," World Molecular Imaging Congress, Honolulu, Hawaii, Sept. 2015.
45. S. Napel, "The Rise (and Fall?) of Radiomics," Radiomics 2016, Clearwater Beach, FL, October 2016.
46. S. Napel, "Decoding Tumor Phenotype using Radiomics: Methods, Challenges, and Potential," Annual Keck Seminar, Gulf Coast Consortium, Magnetic Resonance Radiogenomics Conference, Rice University, Houston, TX, March 31, 2017.

Book Chapters

1. S.G. Magistri, S.A. Napel, K.R. Peschmann, R.E. Rand, J.L. Couch, M.J. Lipton, D.P. Boyd, "Recent Technical Advances in Cine-Computed Tomography". In: New Developments in Imaging, R.Ch. Otto and C.B. Higgins, Editors, Thieme Medical Publishers, Inc., 1986.
2. S. Napel, "Image Reconstruction." In: CT and US Technology and Applications, 1995 AAPM Summer School Proceedings. American Association of Physicists in Medicine Summer School, L.W. Goldman and J.B. Fowlkes Editors, Advanced Medical Publishing, Madison, WI, pp. 311-327, 1995.
3. S. Napel, "Image Processing and 3D Displays." In: CT and US Technology and Applications, 1995 AAPM Summer School Proceedings. American Association of Physicists in Medicine Summer School, L.W. Goldman and J.B. Fowlkes Editors, Advanced Medical Publishing, Madison, WI, pp. 603-626.
4. S. Napel, "Basic Principles of Spiral CT." In: Spiral CT (2nd Edition), E.K. Fishman and R.B. Jeffrey, Jr., Editors, Lippincott-Raven Publishers, Philadelphia, PA, pp. 3-15, 1998.
5. S. Napel, "Principles and Techniques of 3D Spiral CT Angiography." In: Spiral CT (2nd Edition), E.K. Fishman and R.B. Jeffrey, Jr., Editors, Lippincott-Raven Publishers, Philadelphia, PA, pp. 339-360, 1998.
6. Beaulieu, CF, Paik, DS, Napel, S, Jeffrey, RB Jr., "Advanced 3D Display Methods," In: Atlas of Virtual Colonoscopy, A.H. Dachman, Ed., Springer Verlag Publishers, NY, pp. 37-44, 2003.
7. S. Napel, "Basic Principles of MDCT," In: Multidetector CT, Principles, Techniques, and Clinical Applications, E. Fishman and R.B. Jeffrey Jr., Eds., Lippincott Williams and Wilkins, Philadelphia, PA, pp. 3-13, 2004.
8. Beaulieu, CF, Paik, DS, Napel, S, Jeffrey, RB Jr., "Advanced 3D Display Methods," In: Fundamentals of Virtual Colonoscopy, A.H. Dachman, Ed., Springer Verlag Publishers, NY, pp. 53-64, 2005.