

## CURRICULUM VITAE

**DATE PREPARED:** February 3, 2016

### General Information

**Name:** Ron Kikinis

**Office Address:** Brigham and Women's Hospital  
SPL, Radiology  
1249 Boylston St., Ste. 352  
Boston, MA 02215, United States

**Work Phone:** (617) 732-7389

**Work Email:** kikinis@bwh.harvard.edu

**Work Fax:** (617) 582-6033

**Place of Birth:** Haifa, Israel

### Education:

1982 M.D., University of Zurich, Switzerland

### Postdoctoral Training:

1980 Research Fellow in Radiation Biology, University Hospital  
1983-1984 Intern in Radio-oncology, University Hospital  
1984-1986 Resident in Radiology, Institute of Radiology, University  
Hospital  
1986 Research Fellow in Image Processing in Radiology, Institute  
of Radiology, University Hospital  
1986 Research Fellow in Image Processing in Radiology, Institute  
of Communications Technology of the Swiss Federal Institute  
of Technology  
1986-1987 Resident in MR Unit, Children's Hospital, University of  
Zurich  
1987-1988 Research Fellow in Image Processing in Radiology, Institute  
of Radiology, University Hospital  
1987-1988 Research Fellow in Image Processing in Radiology, Institute  
of Communications Technology of the Swiss Federal Institute  
of Technology  
1988-1989 Research Fellow in Neuro MR, Harvard Medical School and  
Brigham and Women's Hospital

**Licensure and Certification:**

1988 Education Commission for Foreign Medical Graduates

**Faculty Academic Appointments:**

1988-1989 Research Fellow, Radiology, Harvard Medical School, Boston, MA  
1989-1992 Instructor of Radiology, Harvard Medical School, Boston, MA  
1992-1997 Adjunct Assistant Professor, Boston University, Boston, MA  
1992-1997 Assistant Professor of Radiology, Harvard Medical School, Boston, MA  
1997-2004 Associate Professor of Radiology, Harvard Medical School, Boston, MA  
2004-present Professor of Radiology, Harvard Medical School, Boston, MA  
2014 Honorary Professor of Medical Image Computing, University of Bremen, Germany

**Other Professional Positions:**

2003, 2008 ISIRACAS International Advisory Board, Technion - Israel Institute of Technology, Tel Aviv, Israel  
2003-present NIH CFNT External Advisory Board, Massachusetts General Hospital, Boston, MA  
2004-present Scientific Advisory Board, LONI Resource P41, UCLA  
2005 Scientific Advisory Board, 4th SNSF Research Networking Workshop: Computer Aided & Image Guided Medical Interventions, Switzerland  
2005-present NIH CIBC External Advisory Board, Salt Lake City, UT  
2006 Advisory Board, ECCV Workshop: Computer Vision for Biomedical Image Applications, Graz, Austria  
2007-2013 CO-ME Scientific Advisory Board, Neuchatel, Switzerland  
2009-2013 Fraunhofer MEVIS Scientific Advisory Board, Bremen, Germany  
2010-present External Advisory Board, NIH Center for Biomedical OCT Research and Translation (CBORT), Massachusetts General Hospital, Boston, MA  
2011 Scientific Advisory Board, VPH-FET, London, UK  
2011 External Advisory Board, National Resource for Biomedical Supercomputing (NRBSC), Pittsburgh Supercomputing, PA  
2011-present Scientific Advisory Board, Ontario Consortium for Adaptive Interventions in Radiation Oncology (OCAIRO), Toronto, Canada  
2012 External Advisory Committee Meeting for MGH/Harvard/MIT Advanced Multimodal Neuroimaging Training Program (PI: Bruce Rosen), MGH, Charlestown, MA

- 2012-2013 External Advisory Board, Euro-BioImaging, Heidelberg, Germany
- 2014- Scientific Advisory Board, Virtual Physiological Human: Dementia Research Enabled by IT (VPH-DARE@IT), The University of Sheffield, UK
- 2014- SFB/Transregio 125 Cognition-Guided Surgery - Wissens- und modellbasierte Chirurgie, Heidelberg, Germany
- 2014- External Advisory Committee for Clinical Trials and Biomarker Research, Massachusetts General Hospital, Boston, MA
- 2016- Therapy Imaging Program (TIP) External Advisory Board, MGH, Boston, MA

**Major Administrative Leadership Positions:**

- 1990-present Director, Surgical Planning Laboratory, Department of Radiology, Brigham and Women's Hospital, Boston, MA
- 2010-present Robert Greenes Distinguished Director of Biomedical Informatics, Department of Radiology, Brigham and Women's Hospital, Boston, MA
- 2014 Director, Fraunhofer Institute for Medical Image Computing MEVIS, Bremen, Germany

**Committee Service:**

**Regional**

- 1998 Co-General Chair, Medical Image Computing and Computer-Assisted Intervention- MICCAI'98, First International Conference, Cambridge, MA
- 1999 Co-Chair, Joint U.S. Public Health Services Office on Women's Health and National Institute Report
- 2000 Session Chair, MICCAI Third International Conference, Pittsburgh, PA
- 2005 Biomedical Informatics/Image Processing/Visualization Council, Brigham and Women's Hospital
- 2005 Airway and Emphysema Phenotypes of the COPD Syndrome: Genetics and Pathogenesis, SCCOR, Brigham and Women's Hospital, Boston, MA
- 2005-2009 IIC Executive Steering Committee, Harvard University, Cambridge, MA
- 2006 Program Committee, SIGGRAPH: 5th Workshop on Volume Graphics, Boston, MA
- 2007 Program Committee, IEEE 7th International Bioinformatics & Bioengineering conference (BIBE), Cambridge, MA
- 2008-2010 Member, Research Oversight Committee, Brigham and Women's Hospital, Boston, MA
- 2008-present Co-Chair, Neuroscience Working Group, Brigham and Women's

- Hospital, Boston, MA
- 2010-2011 Member, Pre-Clinical Strategic Planning Task Force, Brigham and Women's Hospital, Boston, MA
- 2011-present Member, Research IT Steering Committee, Brigham and Women's Hospital, Boston, MA
- 2012 Chair, Musculoskeletal Session, 9th Interventional MRI Symposium, Boston, MA

### **National**

- 1992 Program Committee, Society for Magnetic Resonance Imaging Annual Meeting
- 1993 Technical Evaluator, National Institutes of Health, Bethesda, MD
- 1994 Program Committee, First International Symposium on Medical Robotics and Computer Assisted Surgery, Pittsburgh, PA
- 1994 Program Committee, Third Conference on Visualization in Biomedical Computing (VBC '94), Rochester, MN
- 1995 Program Co-Chair, Second International Symposium on Medical Robotics and Computer Assisted Surgery, Baltimore, MD
- 1995 Program Committee, Frontiers in Biomedical Visualization Symposium (BioMedVis95), Atlanta, GA
- 1996 Program Committee, Visualization 96 (Vis96), San Francisco, CA
- 1998 Program Committee on Volume, Research Triangle Park, North Carolina
- 1999 Program Committee, IEEE Visualization, San Francisco, CA
- 2003 Program Committee, Visualization 2003, Seattle, WA
- 2004 Program Committee, International Symposium on Biomedical Imaging (ISBI 2004), Arlington, VA
- 2004 Program Committee, Volume Visualization and Graphics Symposium 2004 (VolVis 2004), Austin, TX
- 2005 Program Committee, 2005 Volume Graphics Workshop (VG'05)
- 2006 Program Committee, IEEE Workshop on Mathematical Methods in Biomedical Image Analysis (MMBIA), New York, NY
- 2006 Program Committee, 2006 IEEE International Symposium on Biomedical Imaging (ISBI), Arlington, VA
- 2007-2008 MMBIA'08 Program Committee, CVPR'08, Anchorage, AK
- 2008 Program Committee, MIAMS 2008: MICCAI Workshop on "Medical Image Analysis on Multiple Sclerosis (Validation and Methodological Issues), New York, NY
- 2008 Program Committee, "Medical imaging on grids: achievements and perspectives," MICCAI Workshop, New York, NY
- 2009-present Ad Hoc Committee on Web-Based Services, International Society for Magnetic Resonance in Medicine, Berkeley, CA
- 2010 Program Committee, 11th IEEE workshop on Mathematical Methods in Biomedical Image Analysis (MMBIA), with CVPR'10, San Francisco, CA

2010 Web Services Committee, ISMRM, Berkeley, CA

### **International**

- 1995 Program Committee, Computer Assisted Radiology (CAR '95), Berlin, Germany
- 1996 Program Chair and Editor of Proceedings, Visualization in Biomedical Computing, 4th International Conference (VCB '96), Hamburg, Germany
- 1996 Program Committee, Computer Assisted Orthopedic Surgery, University of Bern, Switzerland
- 1997 General Co-Chair, First Joint Conference of CVRMed II and MRCAS III, Grenoble, France
- 1999 Program Committee, 4th International Symposium on Computer Assisted Orthopedic Surgery, Switzerland
- 2000 International Program Committee Member, Society for Minimally Invasive Therapy
- 2001 Member, Scientific Board, Center of Advanced European Studies and Research, Cologne, Germany
- 2001 Program Committee Member, Medical Image Computing and Computer-Assisted Intervention, 4th International Conference, Utrecht, Netherlands
- 2001 Session Chair, Medical Image Computing and Computer-Assisted Intervention, Utrecht, Netherlands
- 2002 Program Chairman, MICCAI Fifth International Conference, Tokyo, Japan
- 2002 Program Committee, MICCAI, Utrecht, Netherlands
- 2004 Program Committee, MIAR 2004: International Workshop on Medical Imaging and Augmented Reality
- 2004 Program Committee, International Workshop on Medical Imaging and Augmented Reality (MIAR 2004), Beijing
- 2008 European Conference on Computer Vision (ECCV) 2008 Program Committee, INRIA
- 2012 Program Committee, Medical Image Computing and Computer Assisted Intervention, Nice, France
- 2012 Session Chair, Workshop on Cognitive Robotics in Surgery, German Cancer Research Center, Heidelberg, Germany
- 2012 Ad hoc participant, NIGMS Council Meeting, Bethesda, MD
- 2012 Review panel, Germany's Excellence Initiative, Deutsche Forschungsgemeinschaft (DFG), Berlin, Germany
- 2012 Reviewer, Bildverarbeitung für die Medizin (BVM) 2012
- 2012 Reviewer, ISBI 2012
- 2012 Session Chair: Clinical Integration 2, 1st International Symposium on Deep Brain Connectomics, Clermont-Ferrand, France
- 2013 Session Chair, "Medical Image Computing," 6th Sixth National Image-Guided Therapy workshop, Crystal City, VA

- 2013 Program Committee, Medical Image Computing and Computer Assisted Intervention, Nagoya, Japan
- 2013 Interview Panelist for the Regius Chair in Engineering, University of Edinburgh, Edinburgh, UK
- 2013 Reviewer, IEEE International Symposium on Biomedical Imaging
- 2015 Chair, "Bremen" Session, MICCAI, Munich, Germany

**Professional Societies:**

- 1984-1999 Ausserordentliches Mitglied of the Foederatio Medicinorum Helveticorum (FMH), Member
- 1986 American Association for the Advancement of Science (AAAS), Member
- 1986-1988 Officer of SGRNM: Representative of Junior Members, Officer
- 1986-1999 Juniormitglied of the Schweizerische Gesellschaft fuer Radiologie und Nuklearmedizin (SGRNM), Member
- 1986-present Radiological Society of North America, Member
- 1989-1999 Schweizerische Neuroradiologische Gesellschaft (SNRG), Member
- 1992 Junior Member of American Society of Neuroradiology
- 2004-present MICCAI Society, Member
- 2009 - MICCAI Society, Fellow
- present
- 2012 Harvard Club of Australia, Australia-Harvard Fellowship
- 2013-present CURAC Society, Innaugural Honorary Membership

**Editorial Activities:**

- 2003 Reviewer, Medical Image Analysis Journal
- 2004-2005 Referee, IMIA Yearbook of Medical Informatics
- 2005-present Executive Editorial Board Member, Medical Image Analysis Journal
- 2005-2014 Editorial Advisory Board Member, Biomedical Computation Review
- 2005-present Member, International Journal of Computer Assisted Radiology and Surgery (CARS)
- 2007 Founding Member, Brain Imaging and Behavior Journal
- 2009-present Editorial Board, Professional Engineering Publishing Ltd.
- 2012 Ad hoc reviewer, Radiology
- 2013 Ad hoc reviewer, Journal of Biomedical Informatics
- 2013 Ad hoc reviewer, Computational and Mathematical Methods in Medicine (CMMM)
- 2013 Ad hoc reviewer, Computers & Electrical Engineering (CEE)

**Awards and Honors:**

- 1988-1990 Nachwuchsfoerderungsstipendium, Swiss National Foundation 81ZH-20561
- 1990-1991 Habilitationstipendium, University of Zurich, Switzerland

1990-1993	Research Award for Computer Aided Image Analysis of Magnetic Resonance Brain Scans in Schizophrenia, Scottish Rite Foundation
1991-1992	Analysis of Morphometric Information from MR Brain Images in Schizophrenia Using Newly Developed Tec, William F. Milton Award
1992-1994	Stanley Foundation Research Award of the National Alliance for the Mentally Ill, Stanley Foundation Research Award
2001	Golden Mile Exhibition Award, ERC 2001. Magna Cum Laude for Scientific Exhibit, CompuX Committee of ERC 2001
2002	Partner's Radiology Research Award, Brigham and Women's Hospital
2003	Computer World Honors Award in Medicine
2004	Honorary Masters degree granted by Harvard Medical School
2006	Group Leader, Kennedy Award: CIMIT Image Guided Therapy Team, CIMIT
2008	IBMISPS Pioneer In Medicine Award: Excellence in Research, Discovery and Education
2009	MICCAI Society "Enduring Impact Award"
2013	Academy of Radiology Research "Distinguished Investigator Award"
2014	Research Leadership Pillar Award, Brigham and Women's Hospital Center for Faculty Development and Diversity

### **Funding Information**

1988-1998	Co-Investigator, Grant, CA45743-08, MRI of Thermally Induced Surgical Interventions
1988-2003	Co-Investigator, Grant, CA46627-08, High Temperature Ultrasound Therapy Guided by MRI
1992-1995	PI, Private Grant, Development of Computerized Image Processing Methods for the Quantitative Analysis of Brain Magnetic Resonance Images for the Diagnosis of Schizophrenia
1995-1996	Co-Investigator, U.S. Army, Virtual Inner Endoscopy
1995-2005	Project PI, NIH/NCI, P01 CA67165, MR Guided Therapy
1996-1997	PI, NSF, BES-9631710, Core Segmentation for Computer Assisted Surgery
1996-1997	Co-Investigator, NIH, MH5-50379-03, Prospective MRI Study of Hippocampus after Mental Trauma
1996-1997	PI, Mitsubishi Electric Information Technology Corporate Research Project, Joint R & D Project to Produce a Prototype of a Surgical Simulator
1996-1998	Co-Investigator, Advanced Research Projects Agency, F41624-96-2-0001, Virtual Endoscopy
1997-2000	PI, NCI, P01CA067165, Surgical Planning Simulation and Intraoperative Guidance
1997-2002	Co-Investigator, NIH/MGH, AG04953, Age-Related Changes of Cognition in Health and Diseases
1998-2003	Consultant, VA Merit Review, MRI Anatomy of Schizophrenia

1998-2003 PI, NCRR, R01 RR011747, Core Segmentation Tools for Computer Assisted Surgery

1998-2003 PI, NSF, 8810-27498, Engineering Research Center for Computer Integrated Surgical Systems and Technology

1998-2008 Site PI, NSF/John Hopkins University, EEC-973178, Engineering Research Center for Computer Integrated Surgical Systems and Technology

1998-2008 PI, NCRR, P41RR13218, Neuroimaging Analysis Center

1999-2001 Co-Investigator, NIH, CA80945, Virtual Cystoscopy for Detection of Small Bladder Tumors

1999-2002 PI, NLM, N01-LM-9-3531, Visible Human Project Imaging Processing Tools

2000-2003 Co-Investigator, NIH, NS37922, Adaptive Functional MRI

2000-2003 Consultant, VA Merit Review, MR Brain Diffusion Tensor Imaging in Schizophrenia

2004-2009 Program Co-Leader, CIMIT, Image Guided Technology

2004-2009 Site PI, NIH, U24 RR021382, Morphometry Biomedical Informatics Research Network

2004-2015 PI, NIH/NIBIB, U54 EB005149, National Alliance for Medical Imaging Computing (NA-MIC)

2005-2011 Site PI, NIH, U24 RR021992, Functional Biomedical Informatics Research Network

2005-present Research Director, NIH, P41 RR019703, Image Guided Therapy Center

2008-2009 Program Co-Leader, CIMIT, Image Guided Technology/Program Leadership Funding

2008-2011 Imaging Specialist, NIH/NCRR, UL1 RR025758, Harvard Clinical and Translational Science Center

2008-2013 Lead Investigator, DoD, W81XWH-08-2-0159, CC-CCA, Post-Traumatic Stress Disorder (PTSD) and Traumatic Brain Injury (TBI) Clinical Consortium

2008-present PI, NIBIB, P41 EB015902, Neuroimaging Analysis Center

2009 PI, NIH, 2P41RR013218-12S1, Image Analysis of Personalized Medicine/NAC ARRA Supplement

2009-2011 Site PI, NIH, R21EB009900, Robust Cerebrum and Cerebellum Segmentation for Neuroimage Analysis

2009-2013 Neuroimaging Leadership Core PI, DoD, W81XWH-08-2-0159, Neuroimaging Leadership for the 10 PTSD/TBI Clinical Consortium Sites (Other PIs: Drs. Martha Shenton and Bruce Rosen) (NCE to 09/30/16)

2011-2013 PI, DoD, W81XWH-08-2-0159, Post-Processing of Images for Clinical Consortium (Other PIs: Drs. Martha Shenton and Bruce Rosen) (NCE to 09/30/15)

2009-2015 PI, NIH, 3U54EB005149-05S3, National Alliance for Medical Image Computing/ARRA Administrative Supplement

2010-2011 Program Co-Leader, CIMIT  
Image Guided Technology/Program Leadership Funding



2013-present Co-PI, NCI, U24CA180918, Quantitative Image Informatics for Cancer Research (QIICR) (Other PI: Dr. Andriy Fedorov)

## Report of Teaching

### Local contributions

2005 3D Modeling for Medical Applications, MIT, Cambridge, MA  
2005 Trends Shaping the Future of Healthcare, CIMIT, Boston, MA  
2006 Percutaneous Tumor Ablation: Current Status and Future Direction, Brigham & Women's Hospital, Massachusetts General Hospital, Harvard Medical School, Boston, MA  
2006 Medical Visualization in the Real World, Boston Park Plaza, Boston, MA  
2007 Computerized Image Analysis, BWH-BRI Imaging Program Seminar Series, Boston, MA  
2009 Guest Lecture, 6.872J/HST950 Biomedical Computing, MIT, Cambridge, MA  
2010 Introduction into the 3D Slicer Software, HMS Research Tutorial Course, Dana Farber Cancer Institut, Boston, MA  
2011 3D Slicer, BWH/DFCI Radiology Core Clerkship, Boston, MA  
2013 Guest Lecture, HST582: Biomedical Signal and Image Processing, MIT, Cambridge, MA  
2014 Guest Lecture, 6.872 Biomedical Computing, MIT, Cambridge, MA  
2015 Anatomie Fuer Informatiker, September 29 – October 13, 2015, University of Bremen, Germany

### Advisees/Trainees

<i>Training Duration</i>	<i>Name</i>	<i>Current Position</i>
1991-1994	P. Langham Gleason, MD	Other
1994-1996	Dan Iosifescu, MD	Other
1994-1997	Shin Nakajima, MD	Other
1994-1998	Simon Warfield, PhD	Assistant Professor of Radiology, Harvard Medical School
1995-2000	Nobuhiko Hata, PhD	Associate Professor of Radiology, Harvard Medical School
1996	Jeffrey Tsao, PhD	Other
1996-1997	Carl-Fredrik Westin, PhD	Associate Professor of Radiology, Harvard Medical School
1996-1997	Abhir Bharlero, PhD	Other
1996-1998	Joachim Kettenbach, MD	Assistant Professor of Radiology
1996-1998	Fatma Olzen, MD	Other
1996-1998	Terrie Inder, MD	Associate Professor

1996-1998	Jens Richolt, MD	Other
1996-1998	Petra Huppi, MD	Director, Child Development Unit
1996-1998	Seppo Koskinen, MD, PhD	Radiologist-In-Chief
1996-1999	Erwin Keeve, MD	Other
1996-2001	Polina Golland, PhD	Assistant Professor, MIT
1997-	Lennox Hoyte, MD	Other
1997	Hideki Atsumi, MD	Other
1997-1998	Alexandra Chaberie	Other
1997-1998	Peter Bogner, MD, PhD	Other
1997-1998	Matthias Teschner	Other
1997-2000	Michael Kaus, PhD	Research Scientist
1998-	Neil Wiesenfeld, MSc	Fellow, Children's Hospital Boston
1998-1999	Gabor Bajzik, MD	Other
1998-2000	Besam Khidhir	Other
1998-2000	Arya Nabavi, MD	Other
1998-2003	Atul Malhotra, MD	Department of Pulmonary and Critical Care Unit, Massachusetts General Hospital, Boston, MA
1999	Alexander Lind	Other
1999	Oliver Schorr	Other
1999-2000	Carl Kolvenbach	Other
1999-2000	Marco Das, MD	Other
1999-2000	Juergen-Volker Anton, MD	Other
1999-2000	Charles Mamisch, MD	Senior Researcher
1999-2001	Lore Schierlitz, MD	Other
1999-2002	Delphine Nain, MS	Other
1999-2003	Juan Ruiz-Alzola, PhD	Associate Professor, Dept. of Signals and Communications, University of Las Palmas, Spain
1999-2003	Lauren O'Donnell, PhD	Postdoctoral Fellow, Department of Radiology, Brigham and Women's Hospital
2000-present	Ion-Florin Talos, MD	Instructor of Radiology, Harvard Medical School
2000	Lutz Ritter	Other
2000-2003	Samson Timoner, PhD	Other
2000-2003	James Ellsmere, MD, MSc	Resident, Dept. of Surgery, Dalhousie University, Halifax, NS, Canada
2001, 2009-2010	Sylvain Jaume	Wentworth Institute of Technology
2001-	Krishna Yeshwant,	Other

	BS	
2001-2005	Karl Krissian, MS, PhD	Departamento de Informatica y Sistemas, Universidad de Las Palmas de Gran Canaria, Campus de Tafira 35017, Las Palmas, Spain
2001-2007	Arne Hans, MS, PhD	Postdoctoral Fellow, Department of Radiology, Children's Hospital Boston
2001-2003	Janko Verhey, PhD	Abteilung Medizinische Informatik, Postfach 3742, D-37070 Göttingen, Germany
2001-2003	Kiyoyuki Chinzei, PhD	Surgical Assist Technology, AIST Tsukuba East, 1-2-1 Namiki, Tsukuba, Ibaraki, 305- 8654, Japan
2002-2003	Lars Hofmann, MD	Medical School: Universitaet Leipzig Herzzentrum, Personalabteilung, Struempellstrasse 39, 04289 Leipzig, Germany
2002-2003	Christian Zentai, MD	Other
2002-2003	Vicente Grau- Colomer, Ph.D.	Louisiana State University Health Sciences Center (LSUHSC), New Orleans, LA 70112
2002-2003	Daniel Worku	Other
2002-2003	Kersten Peldschus	Abteilung Neuroradiologie/Department of Neuroradiology, Medizinische Hochschule Hannover/Medical School Hanover, Carl- Neuberg-Strasse 1
2002-present	Raul San Jose Estepar, Ph.D.	Instructor, Department of Radiology, Brigham and Women's Hospital
2003-	Florian Kipfmueller	Other
2004-2007	Simon DiMaio, BSc, MASC; PhD	Intuitive Surgical Inc., 950 Kifer Rd., Sunnyvale, CA 94086
2004-2007	Raimundo Sierra, PhD	Other
2005-2007	Ralf Rosenberger, MD	Dept. of Trauma Surgery and Sports Medicine, Innsbruck Medical University, Austria
2005-2008	Kilian Pohl, BS, MS, PhD	IBM Almaden Research Center, San Jose, CA
2003, 2007	Philip Mewes, BS	Other
2007-2008	Anja Groch, BS	DKFZ, Heidelberg, Germany
2007-2008	Kerstin Kessel, BS	Institute for Medical Computer Science, University of Heidelberg
2008-2009	Bjoern Menze, PhD	Postdoctoral Fellow, MIT-CSAIL, Cambridge, MA
2008	Bernhard Pflug	Other
2008-2011	Daniel Haehn	Fellow, Children's Hospital, Boston
2008-present	Andriy Fedorov, PhD	Postdoctoral Fellow, Department of Radiology, Brigham and Women's Hospital

2009-2010t	Juhana Froesen, MD, PhD	Other
2010	Krzystof Gorgolewski	Other
2010	Seda Nilgun Dumlu	Other
2010-2013	Demian Wassermann, PhD	Research Assocoate, INRIA, France
2010-2011	Samira Farough, MD	Post-doctoral Research Fellow, "Tumor Imaging Metrics Core" affiliated with MGH & DFCI
2010-2011	Suares Tamekue	Senior Software Developer at CVS Health (Corporate)
2011	Thomas Maier	
2011	Karl Fritscher, MD, PhD	Assistant Professor, UMIT, Germany
2011-2012	Xiaojun Chen	Associate Professor, Shanghai Jiao Tong University, China
2012-2014	Tobias Penzkofer, MD	Radiologist/Research Fellow, Charite Universitatsmedizin Berlin, Germany
2014	Luiz Otavio Murta	Associate Professor at University of São Paulo, Brazil
2014-present	Wenyao Zhang	Research Fellow, Department of Radiology, Brigham and Women's Hospital
2014-present	Yang Gao	Research Fellow, Department of Radiology, Brigham and Women's Hospital
2015	Tom Cai	
2015	Catherine Hutchinson	Research Trainee, Department of Radiology, Brigham and Women's Hospital
2015	Emily Lindemer	PhD Student, Harvard-MIT HST Program

## **Regional, national, or international contributions**

### **Invited Presentations**

#### **Regional**

- 1990 "MRI Studies of the Human Brain: From 2D to 3D Reconstructions," Intelligent Systems Laboratory, Department of Biomedical Engineering, Boston University [*Natural Computation Seminar*]
- 1990 "The Impact of MRI on Neurosurgical Planning," Electronic Imaging International Exposition and Conference, Boston, MA [*Invited Lecture*]
- 1992 "Morphometric and Morphological Analysis of MR Images," Special Topics in NMR and MRI, American Association of Physicists in Medicine, New England Chapter, Boston, MA [*Invited Lecture*]

- 1992 "The Potential Use of MRI Guidance for Computerized Surgical Procedures," Brigham and Women's Hospital, Boston, MA [*Invited Lecture*]
- 1992 "3D Reconstruction from CT and MRI," Brigham and Women's Hospital, Boston, MA [*Invited Lecture*]
- 1992 "3D Morphometric and Morphologic Analysis from MRI," Brain Imaging Group, Brockton V.A. Hospital, Brockton, MA [*Invited Lecture*]
- 1993 "Quantitative and Qualitative Analysis of Digital Diagnostic Data," Dunster House Seminar on Computer-Assisted Research, Harvard University, Cambridge, MA [*Invited Lecture*]
- 1993 "Morphometric and Morphological Analysis of Brain MRI," Brigham and Women's Hospital, Boston, MA [*Course Instructor*]
- 1993 "Computerized Image Processing of MRI for Quantitative Analysis and Surgical Planning," Digital Image Processing Seminar, Center for Imaging and Pharmaceutical Research, Massachusetts General Hospital, Boston, MA [*Invited Lecture*]
- 1994 "Virtual Reality in MRI," Electro International, Boston, MA [*Invited Lecture*]
- 1996 Workshop, CT/MRI Update, Brigham & Women's Hospital/Harvard Medical School, Cambridge, MA [*Course Instructor*]
- 1998 Working Group on Digital Mammography: Computer-Aided Diagnosis and 3D Image Analysis and Display, National Cancer Institute and U.S. Public Health Service, Bethesda, MD [*Invited Lecture*]
- 2002- "High Performance Computing for Image Guided Therapy," CenSSIS Research and Industrial Collaboration Project, Boston, MA [*Keynote Speaker*]
- 2003 "Registration: How good do we need to be?" Second International Workshop on Biomedical Image Registration, Philadelphia, PA [*Invited Lecture*]
- 2007 "Image Analysis for Conservative Follow-up of Meningiomas," IBMISPS'07, Washington, DC [*Invited Lecture*]
- 2007 Medical Image Computing: From Data to Information, ISBI, Washington, DC [*Plenary Presentation*]

- 2008 Imaging Session, AIMBE-Military Collaboration: Bioengineering Challenges of Brain, Washington, DC *[Panelist]*
- 2008 “How I-Do-It Session II: Meningioma Imaging – Automated Segmentation,” 6<sup>th</sup> International Congress on Meningiomas and Cerebral Venous System (MCVS), Boston, MA *[Invited Lecture]*
- 2009 “Open Source Software as an Enabler of Research,” CAOS 2009, Boston, MA *[Presidential Guest Lecture]*
- 2010 “3D Slicer, an Open Source Research Platform,” International WS Workshop/ Advisory Board Meeting for Medical Eye Corporation (Japan), Harvard Club, Cambridge, MA *[Invited Lecture]*
- 2011 “3D Slicer as a Tool for Interactive Brain Tumor Segmentation,” IEEE EMBC, Boston, MA *[Invited Minisymposia Session Paper]*
- 2012 “3D Slicer: An Open Source Platform for Image Guided Therapy,” Technology: Visualization, Navigation and Robotics Session, Invited Speaker, 9th Interventional MRI Symposium, Boston, MA *[Invited Lecture]*
- 2013 “Surgical Planning: Role of Image Processing beyond PACS,” Radiology Centennial Homecoming, Brigham and Women's Hospital, Boston, MA *[Invited Lecture]*

### **National**

- 1987 “Improved Spatial Resolution Allows Detection of Perichondral Details,” Department of Radiology, Hershey Medical School, University of Pennsylvania, Philadelphia, PA *[Invited Lecture]*
- 1989 “Segmentation of Multispectral Magnetic Resonance Volume Images,” Department of Computer Science, University of North Carolina, Chapel Hill, NC *[Invited Lecture]*
- 1990 “3D Reconstructions from MRI and CT for the Planning and Simulation of Surgical Procedures,” Department of Computer Science, University of North Carolina, Chapel Hill, NC *[Invited Lecture]*
- 1990 “Virtual Surgery for the Planning of Corrective Surgery in Patients with Craniofacial Malformations,” Department of Radiology, Johns Hopkins Medical Institution, Baltimore, MD *[Invited Lecture]*
- 1990 “Segmentation and 3D Display of MR Images,” 3D Medical Imaging Display Analysis for Cancer Treatment Planning, Washington, DC *[DIRB/NCI Workshop]*

- 1991 "The Potential Use of MRI Guidance for Computerized Surgical Procedures," Society for Magnetic Resonance Imaging Annual Meeting, NCRR/NIH Workshop, Bethesda, MD [*Session Moderator*]
- 1991 "Segmentation and Image Processing of 3-D Data," Computational Atlas of the Human Brain Workshop, Santa Fe, NM [*Invited Lecture*]
- 1991 "MRI Surgical Planning Using Ultrafast Imaging," USF Workshop on Medical Image Segmentation, Tampa, FL [*Workshop*]
- 1991 "Computerized Planning of Tumor Surgical Procedures," NCI/NIH Workshop, Washington, DC [*Invited Lecture*]
- 1992 "Image Segmentation, Quantitation and 3-D Display," American Society of Neuroradiology, St. Louis, MO [*Invited Lecture*]
- 1992 "MR Imaging of Schizophrenia," Neuroimaging and Electrophysiology: State-of-the-Art 1992 Conference, NIMH, Washington, DC [*Conference*]
- 1992 3-D Medical and Biological Imaging, Center for Creative Imaging, Camden, ME [*Course Instructor*]
- 1993 "Interactive Visualization and Manipulation of 3-D Reconstructions for the Planning of Surgical Procedures," Department of Biomedical Engineering, University of Virginia Health Sciences Center, Charlottesville, NC [*Seminar*]
- 1994 "Imaging Fusion and Methods of Obtaining Surface Contours," NCI 3D-CRT Workshop, Bethesda, MD [*Workshop*]
- 1994 "Correction of MRI Intensity Inhomogeneities by Using Tissue Properties," Society of Magnetic Resonance, Dallas, TX [*Invited Lecture*]
- 1994 "3D Warping of Digital Anatomical Atlas Onto Patient's Data Sets," Society of Magnetic Resonance, Dallas, TX [*Invited Lecture*]
- 1994 "Pre and Intraoperative Tumor Localization Using 3D MRI," Society of Magnetic Resonance, Dallas, TX [*Invited Lecture*]
- 1994 "Virtual Reality in MRI," Interventional MRI, Marina del Rey, CA [*Invited Lecture*]
- 1994 "Visualization in Biomedical Computing," Rochester, MN [*Course Instructor, Session Chair*]
- 1995 "Virtual Reality and MRI," SMRT Third Annual Meeting, Dallas, TX

*[Invited Lecture]*

- 1995 "Interventional MR," Society of Magnetic Resonance, Dallas, TX  
*[Session Moderator]*
- 1995 The Power and Potential of Brain Imaging: Visualizing Its Present and Future. "Computer-Assistance Image Guidance," The National Foundation for Brain Research and The University of Minnesota, Minneapolis, MN *[Invited Lecture]*
- 1995 Technology Transfer in Image-Guided Therapy Workshop: "Workstation Design," National Cancer Institute (NCI), National Aeronautics and Space Administration (NASA), Ballistic Missile Defense Organization (BMDO), and Society for Cardiovascular and Interventional Radiologists (SCVIR), Bethesda, MD *[Team Leader]*
- 1995 Minimally Invasive Techniques in Neurosurgery and Otolaryngology. "The Virtual Otoscope," Joint International Congress, Pittsburgh, PA  
*[Invited Lecture]*
- 1995 "Interactive Image Guided Interventions in an Open-Configuration MR Imaging System," IMAGE Society and Advanced Research Projects Agency Workshop, Scottsdale, AZ *[Invited Lecture]*
- 1995 "Image Guidance Techniques for Neurosurgery." Visualization in Biomedical Computing 1994, Rochester, MN *[Invited Lecture]*
- 1995 "Computer Assisted Three-Dimensional Planning in Surgery." American College of Surgeons Clinical Congress, New Orleans, LA  
*[Invited Lecture]*
- 1995 "Image-Guided Therapy." American Society for Therapeutic Radiology and Oncology (ASTRO), 37th Annual Meeting, Miami Beach, FL  
*[Seminar]*
- 1995 "The Operating Room of the Future." Brown University, Providence, RI  
*[Seminar]*
- 1996 Current and Emerging Technologies in Monitoring Brain Structure and Function. "3D Reconstructed MRI Data for Neurosurgery," National Institute of Mental Health, Bethesda, MD *[Invited Lecture]*
- 1996 "Virtual Otoscopy," IMAGE Society *[Image Conference]*
- 1996 "3D Medical Imaging: Virtual Reality." American Association of Physicists in Medicine, Philadelphia, PA *[Invited Lecture]*



- 1996 38th Annual Meeting and Exhibition, American Association of Physicists in Medicine, Philadelphia, PA [*Refresher Course Coordinator*]
- 1996 Capital Hill Briefing on New Frontiers in Breast Cancer and Early Detection. "3D/Virtual Reality." National Institute of Health, Bethesda, MD [*Briefing*]
- 1996 IEEE Visualization, IEEE Visualization, San Francisco, CA [*Session Chair*]
- 1996 InfoRad Session, Radiologic Society of North America, Chicago, IL [*Instructor*]
- 1998 SPIE-The International Society of Optical Engineering , SPIE-The International Society of Optical Engineering, San Jose, CA [*Course Instructor*]
- 1999 "Computer Assisted Neurosurgery," Columbia University Biomedical Engineering [*Invited Lecture*]
- 1999 7th Scientific Meeting, ISMRM, Philadelphia PA [*Scientific Session Moderator*]
- 2000 "The Role of Surgical Planning," Harvard MRI 2000, Maui, HI [*Teaching Course*]
- 2000 8th Scientific Meeting, ISMRM, Denver, CO [*Scientific Session Moderator*]
- 2000 National Advisory Research Resources Council's Bioinformatics Working Group, National Institutes of Health, Bethesda, MD [*Invited Lecture*]
- 2000 CARS 2000 14th International Congress, CARS, San Francisco, CA [*Workshop participant*]
- 2000 "Image Guided Therapy," SIGGRAPH, New Orleans, LA [*Teaching Course*]
- 2000 Medical Image Analysis and Visualization, Medical Image Computing and Computer-Assisted Intervention (MICCAI), Pittsburgh, PA [*Session Moderator*]
- 2001 Allen S. Lichter Series Lecture: "Image Guided Therapy," University of Michigan, Ann Arbor, MI [*Invited Lecture*]
- 2001 Evans & Sutherland Distinguished Lecture Series, "High Performance Computing for Image Guided Therapy," University of Utah School of Computing, Salt Lake City, UT [*Invited Lecture*]

- 2002 "High Performance Computing for Medical Image Processing," Stony Brook Bioengineering Seminar Series, Stony Brook, NY [*Invited Speaker*]
- 2002 "Surgical Planning Laboratory at Brigham and Women's Hospital," SPIE Medical Imaging, San Diego, CA [*Keynote Speaker*]
- 2002 "High Performance Computing in Image Guided Therapy," Dartmouth College, Dartmouth, NH [*Invited Speaker*]
- 2002 "High Performance Computing for Image Guided Therapy," SuperComputing 2002, Baltimore, MD [*Invited Speaker*]
- 2002 "Medical Image Computing," RSNA 2002, Chicago, IL [*Keynote Speaker*]
- 2003 "High Performance Computing for Image Guided Therapy," SIAM Conference on Computational Science and Engineering, San Diego, CA [*Invited Speaker*]
- 2003 "3D Imaging and Image Processing," MRI 2003: Clinical Update and Practical Applications course, Maui, HI [*Invited Speaker*]
- 2003 Human Brain Project, Center for Scientific Review Special Emphasis Panel, Bethesda, MD [*Member*]
- 2004 BECON-BISTI Symposium, National Institutes of Health, Bethesda, MD [*Invited Speaker*]
- 2005 Image Guided Surgery, NCCR/NIBIB [*P41 Principal Investigator Meeting*]
- 2005 Force 10 Visit, Sun Microsystems Visit, Computational Systems Bioinformatics, Palo Alto, CA [*Invited Lecture*]
- 2005 National Centers for Biomedical Computing, National Library of Medicine Board of Regents, Bethesda, MD [*Invited Lecture*]
- 2005 "National Centers for Biomedical Computing: Informatics Enabling Biomedical Research," AMIA 2005, Austin, TX [*Annual Symposium*]
- 2005 Image-Guided Cancer Therapy Research Symposium, RSNA 2005, Chicago, IL [*Lecture*]
- 2006 Advanced 3D Techniques in Neuro MR Imaging, MRI [*Invited Lecture*]
- 2006 Advancing Technology for Patient Care and Safety: "Surgical Planning Lab (SPL): Lessons Learned," Johns Hopkins School of Medicine, Whiting School of Engineering, Baltimore, MD [*Plenary Presentation*]

- 2006 Third Annual Meeting International Brain Mapping and Intra Operative Surgical Planning Society (IBMISPS), Washington, DC *[Invited Lecture]*
- 2006 "Big Science" and Schizophrenia, ISBI 2006 *[Invited Lecture]*
- 2006 Scientific Visualization Symposium, The Neuro-Physical-Computational Sciences Graduate Training Program, University of Minnesota, Minneapolis, MN *[Invited Lecture]*
- 2006 Supporting Connectivity for Biomedical Research, The National Center for Research Resources, National Institutes of Health, Bethesda, MD *[Workshop]*
- 2006 Workshop on MR Compatible Robotics, ICRA 2006, Orlando, FL *[Invited Lecture]*
- 2007 Medical Image Computing: Tool Development for Neuroscience Research and Image Guided Therapy, Indiana University School of Medicine, Indianapolis, IN *[Invited Lecture]*
- 2007 "Image Computing for Advanced Neuroimaging and Image Guided Therapy," Indiana University School of Medicine, Indianapolis, IN *[Invited Lecture]*
- 2007 Imaging Session: The Global Impact of Medical and Biological Engineering, AIMBE-Military Collaboration: Bioengineering Challenges of Brain Trauma, Washington, DC *[Panelist]*
- 2007 "The Surgical Planning Laboratory," Mayo Clinic College of Medicine, Rochester, NY *[Invited Lecture]*
- 2007 "State of the Art in Image-Guided Neurosurgery," MEXCAS'07, Philadelphia, PA *[Keynote Presentatoin]*
- 2008 Translational Bioinformatics Enabled by the NIH National Centers for Biomedical Computing (NCBCs), AMIA Translational Bioinformatics Meeting, San Francisco, CA *[Panelist]*
- 2008 Medical Image Computing using the NA-MIC Kit, The Allen Institute, Seattle, WA *[Invited Lecture]*
- 2008 Medical Image Computing: From Data to Understanding Biomedical Computation at Stanford (BCATS) Symposium, Stanford University, Stanford, CA *[Keynote Speaker]*
- 2008 "The Role of Software in Image Guided Therapy," IBMISPS, Los

Angeles, CA *[Keynote Speaker]*

- 2010 "3D Slicer," Workshop on Software Tools for Clinical Trials, Dartmouth College, Dartmouth, NH *[Invited Lecture]*
- 2010 "Image Analysis of the Brain," Tenth Anniversary of the Insight Toolkit Workshop, Bethesda, MD *[Invited Lecture]*
- 2010 "3D Slicer as a Research Platform for Medical Image Computing," AMIA, San Francisco, CA *[Invited Lecture]*
- 2010 "Magnetic Resonance Imaging," MemBis 2010, Memphis, TN *[Invited Lecture]*
- 2011 "3D Slicer and the NA-MIC Kit," iDash Workshop, San Diego, CA *[Invited Lecture]*
- 2011 "3D Slicer," AAGL, Hollywood, FL *[Invited Lecture]*
- 2012 Slicer Training, Electronic and Physical Classroom 1245SC, U Iowa, Iowa City *[Teaching Presentation]*
- 2012 "Quantitative Medical Imaging for Clinical Research and Practice" course, RSNA 2012, Chicago, IL *[Teaching Presentation]*
- 2012 "3D Interactive Visualization of DICOM Images for Radiology Applications" course, RSNA 2012, Chicago, IL *[Teaching Presentation]*
- 2012 "Open Source Image Processing Software for Translational Clinical Research," UNC-BRIC, Chapel Hill, NC *[Invited Lecture]*
- 2012 "3D Slicer," Visualization Symposium at Experimental Biology 2012, San Diego, CA *[Invited Lecture]*
- 2012 Larger Scale Funding : A Case Study," Yale Bioimaging Sciences (BIS) Retreat, Southbury, CT *[Invited Lecture]*
- 2012 "Biomedical Imaging under the NCBC Program," ISMB2012, Long Beach, FL *[Invited Lecture]*
- 2013 NLM Board of Regents, Bethesda, MD *[Invited Lecture]*
- 2013 "Medical Image Computing for Translational Biomedical Research," BVM, Heidelberg, Germany *[Invited Lecture]*
- 2013 Radboud University, Nijmegen, the Netherlands *[Invited Lecture]*

- 2013 Special Section MICCAI, Nagoya, Japan [*Invited Lecture*]
- 2013 “Medical Image Computing in the Procedure Room,” Medical University of South Carolina, Charleston, SC [*Invited Lecture*]
- 2013 Quantitative Medical Imaging for Clinical Research and Practice: Hands-on Workshop, RSNA 2013, Chicago, IL [*Teaching Presentation*]
- 2013 ICIA32 - 3D Interactive Visualization of DICOM Images for Radiology Applications, RSNA 2013, Chicago, IL [*Teaching Presentation*]
- 2015 “From Bench to Bedside, Translation in Medical Image Computing,” BISTI, NIH, Bethesda, MD [*Invited Lecture*]
- 2015 3D Slicer Exhibit: Quantitative Imaging Reading Room, RSNA 2015, Chicago, IL [*Teaching Presentation*]
- 2015 “AMIGO, a Laboratory for Translational Research in Image Guided Interventions,” University of Chicago Medical Center, Chicago, IL [*Invited Lecture*]
- 2015 “Medical Image Computing,” Emory University, Atlanta, GA [*2 Invited Lectures: “Grand Rounds,” “Research in Progress (RIPS)”*]
- 2015 “State of the Slicer World and Strategic Plans for Slicer,” 2016 Winter Project Week, MIT CSAIL, Cambridge, MA [*Teaching Presentation*]

### **International**

- 1983-1984 Lecturer for radiation treatment, radiation biology, and radiation chemistry in the course for radiation oncology of the Zurich Medical School [*Invited Lecture*]
- 1987 "An Introduction to MRI of the Spine," Schweizerische Paraplegikerzentrum, Basel, Switzerland [*Invited Lecture*]
- 1988 "Analysis and Visualization of Medical Volume Data," Institut für Biomedizinische Technik of the University of Zurich and the Eidgenössische Technische H, Zurich, Switzerland [*Invited Lecture*]
- 1990 "3D Rekonstruktionen und Analysen," Department of Radiology, University Hospital, Zurich, Switzerland [*Invited Lecture*]
- 1990 "3D Reconstruction for Planning and Simulation of Surgical

- Procedures," Zurich Symposium on Picture Communication and Image Processing, Zurich, Switzerland [*Invited Lecture*]
- 1990 "3D Morphometric and Morphologic Information Derived from Clinical Brain MR Images," Children's Hospital, Zurich, Switzerland [*Invited Lecture*]
- 1991 "Computerized Planning of Neurosurgical Procedures," Department of Neurosurgery, Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland [*Invited Lecture*]
- 1991 "Computerized Planning of Neurosurgical Procedures," Institute of Radiology, German Cancer Research Center, Heidelberg, Germany [*Invited Lecture*]
- 1992 "Morphometric and Morphologic Analysis of Brain MRI Using Computerized Image Processing," Department of Neuroradiology, Universite D'Aix-Marseille, Marseille, France [*Invited Lecture*]
- 1992 "Morphometric and Morphologic Analysis of MRI Using Computerized Image Processing," Institute fur Diagnostische Radiologie Abt. Neuroradiologie, Hospital universitaire de Berne, Berne, Switzerland [*Invited Lecture*]
- 1992 "Computer Aided Analysis of Digital Imaging Data," Computer Vision Laboratory, ETH, Zurich, Switzerland [*Invited Lecture*]
- 1992 "Morphometric and Morphologic Analysis of Digital Imaging Data Using Computerized Image Processing," Department of Radiology, INRIA, Nice, France [*Invited Lecture*]
- 1993 "Computerized Image Processing of Digital Imaging Data for Quantitative Analysis and 3D Reconstructions," Kolloquium Biomathematik und Medizinische Informatik, Institute fur Mathematik und Datenverarbeitung, Erlangen, Germany [*Invited Lecture*]
- 1993 "Computerized Image Processing of Digital Imaging Data for Quantitative Analysis and 3D Reconstructions," Forschungsgruppe "Scientific Visualization," GMD-HLRZ.VIS, Bonn, Germany [*Invited Lecture*]
- 1993 "Computerized Image Processing of Brain MRI for Quantitative Analysis and 3D Reconstructions," McConnell Brain Imaging Centre, Montreal Neurological Institute, McGill University, Montreal, Canada [*Invited Lecture*]
- 1994 "New Virtual Reality Imaging Methods in Radiology and Its Use in

- Surgical Planning,” International Diagnostic Course on Musculoskeletal Diseases, Davos, Switzerland *[Invited Lecture]*
- 1994 "3-D Digital Anatomical Atlas of the Brain,” University of New South Wales School of Computer Science and Engineering Colloquium, Kensington, New *[Invited Lecture]*
- 1995 "Surgical Planning from MR and CT: Segmentation and Visualization,” National Cancer Center Research Institute, Tokyo Japan *[Invited Lecture]*
- 1995 "Brigham & Women's Hospital Pioneering Virtual Reality for Surgical Use,” Karolinska Hospital and Karolinska Institute, Stockholm, Sweden *[Seminar]*
- 1995 "Case Study: The Operating Room of the Future.,” The 1995 Pan Asia Multimedia Convergence & Exhibition, Hong Kong *[Other]*
- 1996 "Image Guided Therapy.,” The 30th International Convention of the Information Technology Associate of Israel. Jerusalem, Israel *[Invited Lecture]*
- 1996 "Image Guided Therapy,” Digitaalisen Kuvantamisen Hyodyt and Sun Microsystems, Jerusalem, Israel *[Invited Lecture]*
- 1996 "Image Guided Therapy,” Sun Microsystems, Cortex Gruppen. Stockholm, Sweden *[Invited Lecture]*
- 1997 “3D Imaging in Neurosurgery and Neuroradiology,” Montreal Neurological Institute and Hospital, Montreal, Quebec, Canada *[Invited Lecture]*
- 1997 “High Performance Computing Application and HPC Medical Application,” Hong Kong *[Seminar]*
- 1998 “Analysis and Visualization of Medical Volume Data,” Children's Hospital, University of Zurich, Switzerland *[Research Seminar]*
- 1999 Joint Meeting mit ker Schweizerischen Anatomie und Funktion, Deutsche Gesellschaft Fur Neurochirurgie, Munich, Germany *[Moderator]*
- 1999 Anatomie and Funktion: Lokalisation von Sensomotorik, Deutsche Gesellschaft Fur Neurochirurgie, Munich, Germany *[Session Moderator]*
- 1999 Second International Conference, Medical Image Computing and Computer-Assisted Intervention (MICCAI), London, England *[Session Moderator]*

- 2001 "High Performance Computing in Image Guided Therapy, Computer Assisted 3D Planning & Real-time Navigation for Neurosurgical Procedures," Institute for Medizinische Informatik Medizinische Universität zu Lubeck, Lubeck, Germany *[Invited Lecture]*
- 2001 Navigierte Hirnchirurgie Workshop, Internationales Symposium, "Interoperative MRI State of the Art Science and Economy," Klinik für Neurochirurgie im Universitätsklinikum Kiel, Kiel, Germany *[Invited Speaker]*
- 2001 3rd Caesarium on Computer Aided Medicine, "Scaffolds for Tissue Engineering Applications Fabricated by 3D Plotting," Bonn-Roettgen, Germany *[Invited Speaker]*
- 2002 "High Performance Computing and Image Guided Therapy," Computer-Aided and Image Guided Medical Interventions (CO-ME), Zurich, Switzerland *[Invited Speaker]*
- 2002 "Medical Robotics: A Challenge to the Radiologist?" German Roentgen Congress, Wiesbaden, Germany *[Invited Speaker]*
- 2002 ISRACAS, ISRACAS, Tel-Aviv, Israel *[Invited Speaker]*
- 2002 "High Performance Computing for Image Guided Therapy," Sun/CUMS Seminar on High Performance Computing for Image Guided Therapy, Beijing, P.R. China *[Keynote Speaker]*
- 2002 "High Performance Computing for Image Guided Therapy," Keio University (hosted by GEYMS and Keio Univ.), Tokyo, Japan *[Invited Seminar]*
- 2002 "High Performance Computing for Image Guided Therapy," Shiga University, Oksu, Japan *[Invited Seminar]*
- 2002 "High Performance Computing for Image Guided Therapy," Osaka University, Oksu, Japan *[Invited Seminar]*
- 2002 Medical School of YanMeng University, Medical School of YanMeng University, Taipei, Taiwan *[Invited Teaching Presentation]*
- 2002 Medical School of National Cheng Kung University, Medical School of National Cheng Kung University, Taipei, Taiwan *[Invited Teaching Presentation]*
- 2002 "DTI and Neuronavigationavigierte Hirnchirurgie," Leipzig, Germany *[Invited Speaker]*



- 2003 "Image Fusion and Reconstruction- What Makes Sense, What is Possible?" Congress German Society of Internal Medicine, Weisbaden, Germany [*Invited Plenary Speaker*]
- 2003 Second Annual Meeting of the German Society for Computer and Robotic Assisted Surgery (CURAC), Second Annual Meeting of the German Society for Computer and Robotic Assisted Surgery (CURAC), Nuremberg, Germany [*Guest Lecturer*]
- 2005 Image Processing at the Surgical Planning Lab, Academia Eurasiana Neurochirurgica, Bamberg, Germany [*Invited Lecture*]
- 2005 Dissemination: EPFL Workshop 2005, NA-MIC, Signal Processing Institute (ITS) of the Swiss Federal Institute of Technology (EPFL), Lausanne, Switzerland [*ITK Intensive Course*]
- 2006 Logarithm Odds Maps for Shape Representation, MICCAI, Copenhagen, Denmark [*Invited Lecture*]
- 2006 "Image Guided Therapy," CARS, Osaka, Japan [*Plenary Lecture*]
- 2007 "The Application of Open Source Concepts to Image Guided Therapy," CURAC, Karlsruhe, Germany [*Invited Lecture, Session Chair*]
- 2007 The Application of Open Source Concepts to Image Guided Therapy, 2007 School of Mechanical Engineering Seminars, The University of Western Australia, Crawley, Australia [*Invited Lecture*]
- 2007 Open Source Software as an Enabler of Research, MICCAI Interaction Workshop, Brisbane, Australia [*Invited Lecture*]
- 2007 "Open Source Software in NA-MIC and NCIGT," AIST, Tokyo, Japan [*Invited Lecture*]
- 2008 Segmentation and Localization Session, ISMRM, Berlin, Germany [*Co-Moderator*]
- 2008 Medical Image Computing using the NA-MIC Kit, McMaster University, Toronto, Canada [*Invited Seminar*]
- 2008 The NIH Roadmap for Bioinformatics and Computational Biology, IT Symposium DKFZ, Heidelberg, Germany [*Invited Lecture*]
- 2008 Open Source Software and Hardware as Enablers of Research, Deutsche Forschungsgemeinschaft (DFG), Bonn, Germany [*Invited Lecture*]
- 2009 Neuro-Surgical Planning, Clinical Update and Practical Applications

- Course, Cancun, Mexico *[Invited Lecture]*
- 2010 3D Slicer as a Research Platform for Medical Imaging Computing, AZE Workshop, University of Tokyo, Tokyo, Japan *[Invited Lecture]*
- 2011 3D Slicer, an Open Source Research Platform, 50th Annual Conference of Japanese Society for Medical and Biological Engineering, Tokyo, Japan *[Keynote Lecture]*
- 2011 Invited Presentation and Slicer Tutorial, Robarts Research Institute, London, Ontario, Canada *[Invited Lecture, Tutorial]*
- 2011 3D Slicer, Thematic Year on the Mathematics of Medical Imaging, Vancouver, BC, Canada *[Invited Lecture]*
- 2011 "3D Slicer," Spanish Society of Biomedical Engineering Annual Congress, Madrid, Spain *[Keynote Speaker]*
- 2012 "Medical Robotics in the United States," German Cancer Research Center, Heidelberg, Germany *[Invited Lecture]*
- 2012 "3D Slicer for Translational Clinical Research," Health Informatics Society of Australia (HISA), Melbourne, Australia *[Invited Lectures]*
- 2012 "Creating Tools for Medical Image Computing," St. Vincent's Hospital, Fitzroy VIC, Australia *[Invited Lecture]*
- 2012 "Patient Specific Image Analysis for Translational Clinical Research," Monash Medical Center, Clayton VIC, Australia *[Invited Lecture]*
- 2012 "The Medicine-Engineering Interface," The University Club of Western Australia, Perth, Australia *[Invited Lecture]*
- 2012 "Creating Tools for Medical Image Computing," The University Club of Western Australia, Perth, Australia *[Invited Lecture]*
- 2012 "Open Source Image Processing Software for Translational Clinical Research," Masterclass, Institute of Advanced Studies, UWA, Sydney, Australia *[Teaching Presentation]*
- 2012 "3D Slicer," Sir Charles Gairdiner Hospital, Perth, Australia *[Invited Lecture]*
- 2012 "3D Slicer," M+Vision, Madrid, Spain *[Invited Lecture]*
- 2012 "Revolution in the Surgical Theater" Session, IMIHEALTH Congresses, Institut Guttmann Neurorehabilitation Hospital, Barcelona, Spain *[Invited*

*Lecture]*

- 2012 "Innovations in Image Guided Therapy," Duesseldorf, Germany [*Plenary Lecture]*
- 2012 Geometry of Anisotropy Workshop, Manchester, UK [*Teaching Presentation]*
- 2012 "Subject Specific Exploration of Connectivity," 1st International Symposium on Deep Brain Connectomics, Clermont-Ferrand, France [*Invited Lecture]*
- 2012 DTI Validation Challenge Workshop, MICCAI 2012, Nice, France [*Teaching Presentation]*
- 2013 "Medical Image Computing for Translational Biomedical Research," BVM, Heidelberg, Germany [*Invited Lecture]*
- 2013 "Von der Forschung in die Klinik," BVM, Heidelberg, Germany [*Session Moderator with Hans-Peter Meinzer]*
- 2013 "NA-MIC and 3D Slicer," AZE, Tokyo, Japan [*Invited Lecture]*
- 2013 Slicer Workshop, AZE, Tokyo, Japan [*Teaching Presentation]*
- 2013 Slicer Workshop, Japanese RSNA, Tokohama, Japan [*Teaching Presentation]*
- 2013 "3D Slicer, Platform for Research," Iwate Medical University, Iwate, Japan [*Invited Special Lecture]*
- 2013 "General Topics on Medical Image Processing and Open Source Software" (Ron Kikinis/Nobuhiko Hata), Iwate Medical University, Iwate, Japan [*Invited Special Lecture]*
- 2013 Data Challenges and Skills Needed: Imaging. BD2K Training Workshop, Rockville, MD [*Invited Lecture]*
- 2013 "Medical Image Computing in the Procedure Room," GMDS, Lübeck, Germany [*Invited Keynote Lecture]*
- 2013 "Medical Image Computing in the Procedure Room," SMIT 2013 conference, Baden-Baden, Germany [*Invited Keynote Lecture]*
- 2013 Slicer Ultrasound Workshop, Iwate Medical University, Iwate, Japan [*Teaching Presentation]*
- 2013 "Medical Image Computing and Image Guided Therapy," University of

- Edinburgh, Edinburgh, UK *[Invited Lecture]*
- 2013 "Medical Image Computing and Image Guided Therapy," University of Dundee, Dundee, UK *[Invited Lecture]*
- 2013 DTI Challenge, MICCAI, Nagoya, Japan *[Teaching Presentation]*
- 2013 "Supervised Algorithms, the Stepchildren of the MIC community," Medical Computer Vision Workshop, MICCAI, Nagoya, Japan *[Teaching Presentation]*
- 2013 "Introduction to NA-MIC and the Slicer community," Slicer2013 Beijing workshop, Chinese PLA General Hospital, Beijing, China *[Keynote Speaker & Teaching Presentation]*
- 2013 "AMIGO Operating Suite," The First Hospital of Jilin University, Changchun, China *[Keynote Speaker]*
- 2014 "Medical Image Computing and Therapeutic Procedures," GSDM, Tokyo, Japan *[Keynote Speaker]*
- 2014 "Medical Image Computing in the Procedure Room," Queen's University, Kingston, Ontario, Canada *[Invited Lecture]*
- 2015 "3D Slicer as a IGS research platform," Rennes University, France *[Invited Lecture]*
- 2015 "Medical Image Computing," Changzheng Hospital, Shanghai, China *[Invited Lecture]*
- 2015 "Introduction to NA-MIC and the Slicer community," Zhejiang University of Technology, Hangzhou, China *[Invited Lecture]*
- 2015 "Introduction to NA-MIC and the Slicer community," Fudan University, Shanghai, China *[Invited Lecture]*
- 2015 "Medical Image Computing," Brain and Spine Institute (ICM), Paris, France *[Invited Lecture]*
- 2015 "Introduction to the SPL and Slicer," Szeged, Hungary *[Invited Lecture]*
- 2015 "Tsunami in the Procedure Room: The Growing Challenge of Managing Data in Image Guided Interventions and Surgery," Kaposvar, Hungary *[Invited Lecture]*

- 2015 “Medical Image Computing Meets Biomechanics,” MICCAI conference, Munich, Germany [*Invited Lecture*]
- 2015 “Interactive Analysis of Clinical dMRI Data,” MICCAI, Munich, Germany [*Invited Lecture*]
- 2015 “Perspektiven der universitären Radiologie,” Konferenzraum des Universitätsklinikums Regensburg, Regensburg, Germany [*Invited Lecture*]
- 2015 “Tsunami in the Procedure Room: The Growing Challenge of Managing Data in Image Guided Interventions and Surgery,” School of Mechanical Engineering, Shanghai Jiao Tong University (SJTU), Shanghai, China [*Invited Lecture*]
- 2016 “Interactive Analysis of Clinical dMRI Data,” Diffusion Workshop 2016, Backaskog Castle, Skane, Sweden [*Invited Lecture*]
- 2016 “Tsunami in the Procedure Room: The Growing Challenge of Managing Data in Image Guided Interventions and Surgery,” Instituto de Astrofísica de Canarias (IAC), Canary Islands, Spain [*Invited Lecture*]

### **Report of Technological and Other Scientific Innovations**

1. Grimson WEL, White SJ, Ettinger GJ, Wells III WM, Lozano-Perez T, **Kikinis R**. United States Patent: System and method of registration of three-dimensional data sets. US patent 5,999,840. 1995 Aug 30.
2. Grimson EL, White SJ, Ettinger GJ, Wells WM, Lozano-Perez T, Kikinis R. United States Patent: System and method of registration of three-dimensional data sets including anatomical body data. US patent 5,531,520. 1996 Jul 2.
3. Wells WM, Kikinis R. United States Patent: Correction of Magnetic Resonance imager intensity inhomogeneities using tissue properties. US patent 5,551,431. 1996 Sep 3.
4. Lorensen, WE, Jolesz FA, Kikinis R. United States Patent: Virtual internal cavity inspection system. US patent 5,611,025. 1997 Mar 11.
5. Nafts CA, Kelleher TP, Lorensen WE, Cline HE, Altobelli DE, Kikinis R, Darrow RD, Cumoulin CL. United States Patent: Computer graphic and live video system enhancing visualization of body structures during surgery. US patent 5,740,802. 1998 Apr 21.
6. Berger JW, Leventon M, and Kikinis R. United States Patent: Technique for creating an ophthalmic augmented reality environment. US patent 5,912,720. 1999 Jun 15.
7. Gibson SFF, Grimson WEL, Kanade T, and Kikinis R. United States Patent: Personal patient simulation. US patent 6,077,082. 1999 Jun 20.
8. Estepar RSJ, Washko GG, Silverman EK, Reilly J, Kikinis R, Westin CF.

International Application Published Under the Patent Cooperation Treaty (PCT),  
World Intellectual Property Organization International Bureau. Measurement of  
Thin-layered Structures in X-ray Computer Tomography. International Publication  
Number WO 2008/042934 A1. 10 April 2008.

## Bibliography

### Original Articles

1. Wolfensberger M, **Kikinis R**, Schmid S, Wichmann W. [Computerized tomography in the classification of hypo pharyngeal and laryngeal cancers]. *Laryngol RhinolOtol* (Stuttg). 1987 Feb;66(2):84-7. German. PMID: 3573895.
2. Wolfensberger M, Jecklin A, Franze I, **Kikinis R**. [Computed tomography for the preoperative classification of oral cavity and oropharyngeal carcinomas]. *Laryngol Rhinol Otol* (Stuttg). 1987 Jun;66(6):324-8. German. PMID: 3626715.
3. **Kikinis R**, von Schulthess GK, Jäger P, Dürr R, Bino M, Kuoni W, Kübler O. Normal and hydronephrotic kidney: evaluation of renal function with contrast-enhanced MR imaging. *Radiology*. 1987 Dec;165(3):837-42. PMID: 3685363.
4. Martin E, Boesch C, Grütter R, **Kikinis R**, Kewitz G, Boltshauser E, Werner B, Eich G. [Magnetic resonance in pediatric research and clinical practice. II. Studies on the development and pathology of the brain in neonates, infants and young children]. *Helv Paediatr Acta*. 1988 Aug;43(1-2):75-86. German. PMID: 3170248.
5. Martin E, **Kikinis R**, Zuerrer M, Boesch C, Briner J, Kewitz G, Kaelin P. Developmental stages of human brain: an MR study. *J Comput Assist Tomogr*. 1988 Nov-Dec;12(6):917-22. PMID: 3183125.
6. Boesch C, Issakainen J, Kewitz G, **Kikinis R**, Martin E, Boltshauser E. Magnetic resonance imaging of the brain in congenital cytomegalovirus infection. *Pediatr Radiol*. 1989;19(2):91-3. PMID: 2537944.
7. Kikinis R, Wolfensberger M, Boesch C, Martin E. Larynx: MR imaging at 25T. *Radiology*. 1989 Apr;171(1):165-9. PMID: 2928521.
8. Martin E, Boesch C, Zuerrer M, **Kikinis R**, Molinari L, Kaelin P, Boltshauser E, Duc G. MR imaging of brain maturation in normal and developmentally handicapped children. *J Comput Assist Tomogr*. 1990 Sep-Oct;14(5):685-92. PMID: 1697866.
9. Cline HE, Lorensen WE, **Kikinis R**, Jolesz FA. Three-dimensional segmentation of MR images of the head using probability and connectivity. *J Comput Assist Tomogr*. 1990 Nov-Dec;14(6):1037-45. PMID: 2229557.
10. Cline HE, Lorensen WE, Souza SP, Jolesz FA, **Kikinis R**, Gerig G, Kennedy TE. 3D surface rendered MR images of the brain and its vasculature. *J Comput Assist Tomogr*. 1991 Mar-Apr;15(2):344-51. PMID: 2002124.
11. Shenton ME, **Kikinis R**, McCarley RW, Metcalf D, Tieman J, Jolesz FA. Application of automated MRI volumetric measurement techniques to the ventricular system in schizophrenics and normal controls. *Schizophr Res*. 1991 Sep;5(2):103-13. PMID: 1931803.
12. Gerig G, **Kikinis R**, Kuoni W, von Schulthess GK, Kübler O. Semi automated ROI analysis in dynamic MR studies. Part I: Image analysis tools for automatic correction of organ displacements. *J Comput Assist Tomogr*. 1991 Sep-Oct;15(5):725-32. PMID:

1885789.

13. Gerig G, Kubler O, **Kikinis R**, Jolesz FA. Nonlinear anisotropic filtering of MRI data. *IEEE Trans Med Imaging*. 1992;11(2):221-32. PMID: 18218376.
14. Sandor T, Jolesz FA, Tieman J, **Kikinis R**, Jones K, Albert M. Comparative analysis of computed tomographic and magnetic resonance imaging scans in Alzheimer patients and controls. *Arch Neurol*. 1992 Apr;49(4):381-4. PMID: 1558519.
15. Shenton ME, **Kikinis R**, Jolesz FA, Pollak SD, LeMay M, Wible CG, Hokama H, Martin J, Metcalf D, Coleman M, et al. Abnormalities of the left temporal lobe and thought disorder in schizophrenia. A quantitative magnetic resonance imaging study. *N Engl J Med*. 1992 Aug 27;327(9):604-12. PMID: 1640954.
16. Schwartz RB, Jones KM, Chernoff DM, Mukherji SK, Khorasani R, Tice HM, **Kikinis R**, Hooton SM, Stieg PE, Polak JF. Common carotid artery bifurcation: evaluation with spiral CT. Work in progress. *Radiology*. 1992 Nov; 185(2):513-9. PMID: 1410365.
17. **Kikinis R**, Shenton ME, Gerig G, Martin J, Anderson M, Metcalf D, GuttmanCR, McCarley RW, Lorensen W, Cline H, et al. Routine quantitative analysis of brain and cerebrospinal fluid spaces with MR imaging. *J Magn Reson Imaging*. 1992 Nov-Dec;2(6):619-29. PMID: 1446105.
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### **Narrative Report of Research, Teaching, and Clinical Contributions**

### Scientific Activities:

The fundamental question driving the research of this investigator is how to increase the amount and quality of information gleaned from diagnostic imaging data. He started this quest within a few years of graduating from medical school during his residency in radiology in Zurich, Switzerland during the early 80's. Ever since, he has been building bridges between biomedical research, clinical translational research, and different branches of computer science, including computer vision, computer graphics and high performance computing. He is the principal investigator for the 3D Slicer image computing platform, which is used for image processing in biomedical research in the brain, head and neck, musculo skeletal system, cardio-vascular, respiratory, gastro-intestinal, genitourinary and for image guided interventions. This work is funded through a variety of grants, including several center grants in which he has leadership functions, including the Neuroimage Analysis Center, a National Resource Center. Furthermore, he serves as the scientific director for the National Center for Image Guided Therapy.