Biographical Data

NAME — Sarah Kathryn Patch

EDUCATION

National Science Foundation Math. Sciences Postdoc. 1994–1997
1994-1995 program on Waves & Scattering at the Institute for Math & its Applications
1996-1997 Stanford University, department of mathematics

Alexander von Humboldt Forschungsstipendiatin at the Universitaet Muenster, Aug. 1995 – Jan. 1996

Ph.D. in Applied Mathematics, University of California at Berkeley, 1994
Dissertation: Recursive Recovery of Markov Transition Probabilities from Boundary Value Data

B.S. in Mathematics and Computational Sciences, Stanford University, 1989

EMPLOYMENT

UW-Milwaukee, Department of Physics Sept. 2005-present

GE Healthcare, Applied Science Lab. Sept. 1999-Sept. 2005
Develop reconstruction algorithms across modalities: xray CT, MRI, and thermoacoustic tomography. Firefight as required.

GE Corporate Research & Development. June 1997–Aug 1999
Developed reconstruction algorithms for 3D computerized tomography. Supported other GE businesses as required, for example, led project on thermal modeling of glass kitchen cooktops.

Stanford University. Lecturer Sept. 1996 - May 1997
Taught ordinary differential equations and linear algebra.

HONORS & AWARDS

NSF Postdoctoral Fellowship in Mathematical Sciences
AvHumboldt Stipendiatin
GE Awards – patent & retention
UWM Research Growth Initiative #101XB16
UWM Research Growth Initiative #101X065
NIH R21CA137364
UWM Graduate School Instrumentation Award (co-I)
MCW CTSI Award
AAPM Science Council Session, 2016

ADJUNCT APPOINTMENTS

MCW, CTSI	2010-present
UW-Madison, Medical Physics	2002-present
Rensselaer Polytechnic Institute, Mathematics	1998-1999

Research Achievement

JOURNAL ARTICLES

1. S.K. Patch, D.E.M. Hoff, T. B. Webb, L.G. Sobotka, T. Zhao "Two-Stage Ionoacoustic Range Verification Leveraging Monte Carlo and Acoustic Simulations to Stably Account for Tissue Inhomogeneity and Accelerator–Specific Time Structure – a simulation study," accepted for publication in *Medical Physics.*
2. SK Patch, M Kireeff Covo, A Jackson, YM Qadadha, KS Campbell, RA Albright, P Bloemhard, AP Donoghue, CR Siero, TL Gimpel, SM Small, BF Ninemire, MB Johnson, and L Phair, "Thermoacoustic Range Verification using a Clinical Ultrasound Array Provides Perfectly co-Registered Overlay of the Bragg peak onto an Ultrasound Image," *Physics in Medicine and Biology,* **61**, pp. 5621-5638, (2016).
3. SK Patch, D Hull, WA See, GW Hanson, "Toward Quantitative Whole Organ Thermoacoustics With a Clinical Array Plus One Very Low-Frequency Channel Applied to Prostate Cancer Imaging," *IEEE Trans Ultrason Ferroelectr Freq Control,* **63**(2), pp. 245-55 (2016).
4. SK Patch, D Hull, M Thomas, SK Griep, K Jacobsohn, WA See, "Thermoacoustic contrast of prostate cancer due to heating by very high frequency irradiation," *Physics in Medicine and Biology,* **60**, pp. 689-708, (2015).
5. MA Roggenbuck, RD Walker, JW Catenacci, SK Patch, "Volumetric Thermoacoustic Imaging over Large Fields of View," *Ultrasonic Imaging,* **35**(1), p. 57-6, (2013). PMID: 23287507
6. D Li, YS Jung, HK Kim, J Chen, DA Geller, MV Shuba, SA Maksimenko, S Patch, E Forati, and George W. Hanson, "The Effect of Sample Holder Geometry on Electromagnetic Heating of Nanoparticle and NaCl Solutions at 13.56 MHz," *IEEE Transactions on Biomedical Engineering*, **59**(12), pp. 3468-3474, (2012).
7. SK Patch, N Rao, H Kelly, K Jacobsohn, and WA See, "Specific Heat Capacity of Freshly Excised Prostate Specimens," *Physiological Measurement,* **32**, pp. N55-64, (2011).
8. A Eckhart, R Balmer, W See, SK Patch, "Ex Vivo Thermoacoustic Imaging over Large Fields of View with 108 MHz Irradiation," *IEEE Transactions on Biomedical Engineering,* **58**(8), pp. 2238 - 2246, (2011).
9. D. Fallon, L. Yan, GW Hanson, SK Patch, "RF Testbed for Thermoacoustic Tomography," *Review of Scientific Instruments,* **80**, #064301, (2009).
10. GW Hanson, SK Patch, "Optimum Heating of Nanoparticle Thermal Contrast Agents at RF Frequencies," *Journal of Applied Physics,* **106**, #054309, (2009).
11. B. Treeby, B. Cox, E.Z. Zhang, S.K. Patch, P.C. Beard, "Measurement of broadband temperature-dependent ultrasonic attenuation and dispersion using photoacoustics," *IEEE Trans. Ultrasonics, Ferroelectrics, & Freq. Control,* **58**(8), pp. 1666-1676, (2009).
12. S. K. Patch, O. Scherzer, "Photo- and Thermo-Acoustic Imaging," *Inverse Problems* **23** S01-S10, (2007).
13. *S. K. Patch, "Thermoacoustic Tomography - Consistency Conditions and the Partial Scan Problem," *Physics in Medicine & Biology,* **49** no 11, pp. 2305 – 2315, (2004)
14. D. Finch, S. K. Patch, Rakesh, "Determining a Function from its Mean Values over Spheres," *SIAM J. Math. Anal.,* **35** no 5, pp. 1213-1240, (2003).
15. *S. K. Patch, "Consistency Conditions upon 3D CT Data and the Wave Equation*," Physics in Medicine & Biology,* **47** no 15, pp. 2637-2650, (2002).
16. S. K. Patch, "Computation of Unmeasured 3rd Generation VCT Views from Measured Views," *IEEE-Transactions in Medical Imaging,* **21** no 7, (2002).
17. *S. K. Patch, "Moment Conditions Indirectly Improve Image Quality," *Contemporary Mathematics*, **278**, pp. 193-205, (2000).
18. S. K. Patch, "An Iterative Algorithm for Discrete Tomography," *International Journal of Imaging Systems and Technology*, **9**, pp. 132-143, (1998).
19. S. K. Patch, "Diffuse Tomography Modulo Grassmann and Laplace," *Journal of Mathematical Physics*, **37**, no. 7, pp. 3283-3305, (1996).
20. S. K. Patch, "Recursive Recovery of a family of Markov Transition Probabilities from Boundary Value Data," *Journal of Mathematical Physics,* **36**, no. 7, pp. 3395-3412, (1995).

21. S. K. Patch, “Consistency Conditions in Diffuse Tomography,” *Inverse Problems*, **10**, no.1, pp. 199-212, (1994).
22. *F. A. Grunbaum, S. K. Patch, “How many parameters can one solve for in Diffuse tomography,” G. Papanicolaou, A. Friedman, R. Gulliver, eds., *I.M.A. Volumes in Mathematics and its Applications*, **90**, pp. 219-236.
23. *S. K. Patch, “A Note on Consistency Conditions in Three Dimensional Diffuse Tomography,” *Lectures in Applied Mathematics*, **30**, pp. 211-30, (1994).
24. *F. A. Grunbaum, S. K. Patch, “The use of Grassmann Identities for inversion of a general model in diffuse tomography,” Lapland Conference on Inverse Problems, June 14-20, 1992. Saariselkaa, Finland.
25. S. K. Patch, E. P. Dever, R. C. Beardsley, S. J. Lentz, “Response Characteristics of the V.A.C.M. Compass and Vane Follower,” *Journal of Atmospheric and Oceanic Technology*, **9,** No. 4, 459-469, (1992).

** denotes a special proceedings issue of a refereed journal*

BOOK CHAPTERS

26. MA Roggenbuck, JW Catenacci, RD Walker, E Hanson, J Hsieh, SK Patch, “Thermoacoustic Imaging with VHF Signal Generation: A New Contrast Mechanism for Cancer Imaging over Large Fields of View,” *Abdomen and Thoracic Imaging: An Engineering & Clinical Perspective,* DOI 10.1007/978-1-4614-8498-1_21, Springer New York 2014.
27. S. K. Patch, “Photoacoustic or thermoacoustic tomography - consistency conditions and the partial scan problem,” in *Photoacoustic Imaging and Spectroscopy*, CRC Press, (2009).
28. S. K. Patch, “k-space Data Preprocessing for Artifact Reduction in MRI,” Radiological Society of North America 2005 Categorical Course in Diagnostic Radiology Physics.
29. S. K. Patch, “Recursive Solution for Diffuse Tomographic Systems of Arbitrary Size,” *Discrete Tomography: Foundations, Algorithms, and Applications*, in Appl. Numer. Harmon. Anal., G.T. Herman and A. Kuba, eds., Birkhauser, pp. 435-454, (1999).

PROCEEDINGS

30. SK Patch, WA See, “Broadband & Volumetric Thermoacoustic Imaging of Fresh Human Prostates Using a Clinical Array,” IEEE-Great Lakes Biomedical Conference, 2015.
31. Patch, S.; Thomas, M.; Hull, D.; Griep, S.; Jacobsohn, K.; See, W. , “Thermoacoustic contrast of prostate cancer due to heating by very high frequency irradiation,” IEEE Ultrasonics Symposium (IUS), 2014. Pages: 1670 - 1673, DOI: 10.1109/ULTSYM.2014.0414
32. S. K. Patch, S. K. Griep; K. Jacobsohn; W. A. See; D. Hull, “Thermoacoustic imaging of prostate cancer: comparison to histology, “*Proc. SPIE*. 8943, Photons Plus Ultrasound: Imaging and Sensing 2014, 894305. (March 03, 2014) doi: 10.1117/12.2036091
33. S. K. Patch, E. Hanson; M. Thomas; H. Kelly; K. Jacobsohn; W. A. See, “Thermoacoustic imaging of fresh prostates up to 6-cm diameter,” *Proc. SPIE*. 8581, Photons Plus Ultrasound: Imaging and Sensing 2013, 85812K. (March 04, 2013) doi: 10.1117/12.2001896
34. Roggenbuck, M.; Catenacci, J.; Patch, S.K., “Multislice ex vivo thermoacoustic imaging of porcine kidneys,” IEEE International Symposium on Biomedical Imaging: From Nano to Macro, (2011), pages: 944 - 948, DOI: 10.1109/ISBI.2011.5872559
35. DW Byrd, GW Hanson, SK Patch, “Carbon Nanotubes for Thermoacoustic Contrast Enhancement – Preliminary Results,” PROC SPIE **7564-17**, (2010).
36. A Eckhart, M Schrauth, M Rhodes, J Becker, S. K. Patch, “Phantoms for Thermoacoustic Tomography with RF Heating,” PROC SPIE **7177-66**, (2009).
37. D. Fallon, L. Yan, GW Hanson, SK Patch, “RF testbed for thermoacoustic tomography,” PROC SPIE **7177-67**, (2009).
38. SK Patch, L Yan, E-field polarization in thermoacoustic tomography,” PROC SPIE 7177-74, (2009).
39. S. K. Patch, L. Yan, “Object orientation in RF field determines thermoacoustic contrast,” *Proc. SPIE*. 7177, Photons Plus Ultrasound: Imaging and Sensing 2009, 717721. (February 12, 2009) doi: 10.1117/12.807765
40. Deepti Pachauri, Timothy A. Stiles, Namrta Purwar, Prasenjit Dey, SK Patch, “Transducer frequency response and impact on TPOAT signal,” Proc. SPIE 6856, 68561H (2008).

41. M. Mitchell, G. Becker, P. Dey, J. Generotzky, S. K. Patch, “Shielding for thermoacoustic tomography with RF excitation,” Proc. SPIE 6856, 68560X (2008).
42. G. Ambartsoumian, SK Patch, “Thermoacoustic Tomography: Numerical Results,” PROC SPIE 6437-47, 2007.
43. A Greenleaf, SK Patch, “Ultrasound Attenuation and thermo/photo/opto-acoustic Tomography: Theoretical Foundation,” PROC SPIE 6437-77, 2007.
44. Patch, S.K.; Haltmeier, M., “Thermoacoustic Tomography - Ultrasound Attenuation Artifacts,” IEEE Nuclear Science Symposium Conference Record, (2006), vol 4, pages: 2604 - 2606, DOI: 10.1109/NSSMIC.2006.354441
45. G. Besson, S.K. Patch, “Cone-beam correction for 3rd generation multislice CT” Nuclear Science Symposium, IEEE Conference Record, **3**. Oct. 1999 pp:1314 – 1317.
46. S. K. Patch, “Opportunities for Parallel Solution in Diffuse Tomography,” D. Bailey, P. Bjorstadt, J. Gilbert, M. Mascagni, R. Schreiber, H. Simon, eds., *7th SIAM Conference on Parallel Processing for Scientific Computing*, pp. 45-49, (1995).
47. S. K. Patch, “Analytic Recovery of Transition Probabilities in Three Dimensional Diffuse Tomography,” *Inverse Optics III*, PROC SPIE, **2241,** (1994).
48. F. A. Grunbaum, S. K. Patch, “Simplification of a general model in diffuse tomography,” *Inverse Problems in Scattering and Imaging*, PROC SPIE, **1888,** (1993).
49. F. A. Grunbaum, S. K. Patch, “Analytic inversion of a general model in diffuse tomography,” *Inverse Problems in Scattering and Imaging,* Michael A. Fiddy, Editor, PROC SPIE, **1767,** (1992).
50. S. K. Patch, R. C. Beardsley, S. J. Lentz, “A note on response characteristics of the V.A.C.M. compass,” Proc. of the IEEE fourth Working Conference on Current Measurement, (1990).

ABSTRACTS & POSTERS

51. M Thomas, E Hanson, H Kelly, K Jacobsohn, W See, S Patch, “Ex Vivo Thermoacoustic Prostate Cancer Imaging,” 3rd Annual Milwaukee Regional Research Forum, 2012.
52. M Roggenbuck, J Catenacci, S Patch, “Multislice *ex vivo* thermoacoustic imaging of porcine kidneys,” IEEE International Symposium on Biomedical Imaging, 2011.
53. M Roggenbuck, Sarah Patch, “Using Labview to Collect Multiple Transducer TCT Data,” UWM Office of Undergraduate Research Symposium, 2011.
54. J Catenacci, S Patch, “Radio Frequency and Transducer Optimization for Thermoacoustic Computerized Tomography,” UWM Office of Undergraduate Research Symposium, 2011.
55. J Catenacci, S Patch, “Blood Product Strength of Signal using Thermoacoustic Computerized Tomography,” UWM Office of Undergraduate Research Symposium, 2011.
56. M Roggenbuck, S Patch, “Glycine as an Acoustic Couplant,” UWM Office of Undergraduate Research Symposium, 2011.
57. A Eckhart-UW Civil Eng, SK Patch and D Shurilla, “Thermoacoustic and Ultrasound Tomography,” Great Lakes Biomedical Conference, Milwaukee WI 2010.
58. Ke Xu, SK Patch, “A Tissue-Mimicking Prostate Phantom,” Great Lakes Biomedical Conference, Milwaukee WI 2010.
59. A Eckhart, M Schrauth, S Patch, “Phantoms of Thermoacoustic Tomography and RF Heating,” UWM Office of Undergraduate Research Symposium, 2009.
60. Haltmeier, SK Patch, “Thermoacoustic Tomography - Ultrasound Attenuation Artifacts,” Nuclear Science Symposium Conference Record 4, pp. 2604 – 2606, (2006).
61. SK Patch, “ρ-filtered reconstruction: 2D xray CT vs. 3D TCT,” Proc. Fully 3D Reconstruction in Radiology and Nuclear Medicine 2005, pp. 145-148, posted online at http://www.ucair.med.utah.edu/3D05/PaperPDF/3D05proceedings-part4-pages143-202.pdf
62. S. Patch, M. Hartley, A. Gaddipatti, R. Peters, K. Gould, JG Pipe, KF King, “Improved Propeller in-plane translation correction,” Proc of the Int’l. Soc. Magnetic Resonance in Medicine May 2005.
63. S. Patch, “Reconstruction of Partial Scan Thermoacoustic Tomography Data,” IEEE-MIC, 2004.
64. H. Nam, S. Patch, “Feasibility of MRI with Inhomogeneous Background Fields,” Fully 3D 2003.
65. R. Boutchko, C. Mistretta, G.H. Chen, J. Hsieh, S.K. Patch, “Z-scan : Feasibility of an

ultrafast volume CT scanner," Fully 3D 2003.

66. S. Patch, A. Nishide, A. Hagiwara, "Volumetric computed tomography data weights – resolution vs. artifact," RADIOLOGY 225: 496-496 Suppl. S NOV 2002
67. S. Patch, T. Shubhachint, "Robust Phase Unwrapping in the Plane," Proc of the ISMRM 2002.
68. S. Patch, G. Besson, "Practical helical cone-beam algorithms for multislice volumetric CT," RADIOLOGY 213P: 451-451 1506 NOV 1999
69. S. Patch, C.J. Hardy, H. Cline, "Efficient Spiral Imaging: Sensitivity to Static Field Inhomogeneity," Proc of the ISMRM 1999.

PATENTS

70. US Patent #8529449, "Method and system of thermoacoustic computed tomography," 10/10/2013.
71. US Patent #7878976, "Method and system of thermoacoustic imaging with exact inversion," 01/02/2011.
72. US Patent #7176684, "Method and System of Determining in-plane Motion in Propeller Data," 13/02/2007.
73. US Patent #6084936 "Almost Everywhere Extrapolation from Cone Beam Data," 07/04/2000.
    Issued internationally as
    - European Patent #0971318B1, 12/04/2002.
    - German Patent DE69920820T2, 11/17/2005.
    - Japan JP2000046761A, 02/18/2000.
74. US Patent #6173030 "Almost Everywhere Extrapolation Using 2D Transforms from Cone Beam Data," 1/09/2001.

75. US Patent #6264365 "Background monitoring of CT data for existence and location of a bad detector," 7/24/2001.
    Filed internationally in
    - Germany DE10052678A1, 04/17/2003.
    - Japan JP2001170042A, 06/26/2001
76. US Patent #6292526 "Methods and apparatus for preprocessing volumetric computed tomography data," 9/18/2001.
    Filed internationally in
    - Germany DE10053178A1, 10/26/2000
    - Japan JP2001224584A, 08/21/2001
77. US Patent #6292530 "Method and apparatus for reconstructing image data acquired by a tomosynthesis x-ray imaging system," 09/19/2001.
    Filed internationally in
    - France FR2798804, 23/03/2001.
    - Japan JP2000350721A, 19/12/2000.
78. US Patent #6317478 "Method and apparatus for imaging based on calculated inversion values of cone beam data," 11/13/2001.
79. US Patent #6459754 "Methods and apparatus for cone beam multislice CT correction," 10/01/2002.
    Filed internationally as
    - European Patent #1096426, 05/02/2001.
    - Japan JP2001161678A, 06/19/2001.
80. US Patent #6703835 "System and method for unwrapping phase difference images," 09/03/2004.
81. US Patent #6754299 "Methods and apparatus for weighting of computed tomography data," 06/22/2004.
    Issued internationally in
    - European Patent #EP1387321, 2004/02/04.
    - Japan # JP2004065983A
82. US Patent # 6845144, "Three dimensional back projection method and an X-ray CT apparatus," 01/18/2005

Filed internationally in
- China # CN1518956 (A), 2/6/2004.
- Europe # EP1445735(A1), 04/02/2004.
- Japan JP2004237088, 08/26/2004.

INVITED PAPERS PRESENTED AT INTERNATIONAL MEETINGS

83. “Mathematical and numerical approaches for multi-wave inverse problems,” CIRM April 1-5, 2019
84. “Computational and Analytical Aspects of Image Reconstruction,” ICERM July 13-17, 2015
85. Fields-MITACS Conference on the Mathematics of Medical Imaging, 2011
86. Oberwolfach, “Mathematical Methods in Tomography,” every 4 years starting 1994, (could not attend 2010)
87. Oberwolfach, “The Mathematics of Discrete Tomography” 2000
88. Radiological Society of North America Categorical Course, November 2005, 2006, and 2007.
89. Applied Inverse Problems, June 2007
90. Applied Inverse Problems, June 2005
91. American Math. Soc., Special Session on Radon Transform and Inverse Problems, Jan 2005
92. SPIE - Photons+Ultrasound:Imaging and Sensing, 2004
93. Pacific Inst. for Math. Sciences, “Inverse Problems and Medical Imaging," 2003
94. IMPA - VIII Workshop on PDEs (in honor of FA Grunbaum's 60th Bday), 2003
95. Math Sciences Research Institute, “Inverse Problems” 2001
96. Math Sciences Research Institute, Inverse Problems program, 1999

ORAL PRESENTATIONS AT INTERNATIONAL MEETINGS

97. Particle Therapy Co-operative Group-North America, October 2017
98. American Association of Physicists in Medicine, most recently 2016
99. Radiological Society of North America, most recently 2015
100. SPIE BIOS, *Photons Plus Ultrasound,* most recently 2016
101. Fully 3D Reconstruction in Radiology & Nuclear Medicine, 2011, 2007, 2005, 2003, 2001
102. IEEE International Symposium on Biomedical Imaging, 2011
103. IEEE Medical Imaging Conference, 2004 & 1999
104. New Approaches to the Phase Problem for Non-Periodic Objects, 2001.
105. AMS/IMS/SIAM Conference on Radon Transforms & Tomography, 2000.
106. Inverse and Ill-posed Problems: Moscow, 1996.

INVITED LECTURES

2012	March	UW-Milwaukee BME seminar
2011	May	University of Michigan-Radiology seminar
2011	Oct	University of Kentucky – Math seminar
2008	September	University of Maryland-Baltimore County, Math Colloquium
2005	Feb	Brown University, Department of Chemistry seminar
	March	U. Chicago Department of Radiology brown bag
2004	Oct	Marquette University Biomedical Engineering brown bag
	March	Tulane Center for Computational Science department seminar
2003	Dec	Johns Hopkins, Center for Imaging Science department seminar
2002	March	UW-Milwaukee Physics
2001	Feb	Rutgers Statistics department seminar
		UW-Milwaukee Mathematics
2000	September	U. Minnesota, Industrial Problems Seminar
	April	U. Illinois at Champaign-Urbana, Math Dept seminar
		Marquette University Biomedical Engineering brown bag,
		U. Wisconsin-Madison, Mathematics VIGRE brown-bag,

Mentorship

SUPERVISED MS RESEARCH

DW Byrd, “Absorption of radiofrequency and microwave radiation by single walled carbon nanotubes,” May 2010.

D Pachauri, "Transducer Frequency Response and Impact on TCT Signal,” August 2009.

SUPERVISED UNDERGRADUATE RESEARCH

Student Name	Degree or Term	Subsequent position
Brittany Ahuja	BS (biosci) 2011	CSM Labs
Jared Catenacci	BS (math) 2012	NC State PhD applied math, 2016
Liz Doucette	BS (biosci) 2011	UW-Madison pharmacy program.
Andrew Eckhart	BS (Madison civil eng) 2012	IBC engineering
Michael Roggenbuck	BS (physics) 2012	Epic Software
Mike Schrauth	BS (ME) 2009	Optima Machinery Corp
Ke Xu	BA (business) 2012	UWM MS in professional accounting
Stephanie Griep	BS (USC) 2015	University of Southern California
Yazeed Qadadha	current	

SUMMER STUDENTS

Eric Hanson	summer 2012	Cambridge, PhD candidate in math
Ryan Walker	summer 2011	Fluential
Wei Wu	summer 2014	Marquette, PhD candidate in math
Mailee Yang	summer 2014	UWM/Madison, sonography program

PhD & Habilitation Committees

Markus Haltmeier,	Habilitation committee,	June 2010
Markus Haltmeier,	PhD committee,	December 2006
Liang Hongzhu,	PhD reviewer,	December 2007

Professional Service

REFEREEING *Ultrasonic Imaging, Medical Physics, Physics in Medicine & Biology, IEEE-Trans. Medical Imaging, IEEE-Trans. Biomedical Engineering, IEEE-Trans. Microwave Theory & Techniques, IEEE-Trans. Image Processing, IEEE-Trans. Magnetics, IEEE-Trans. Ultrasonics Ferroelectrics & Frequency Control, IEEE Signal Processing Letters, Contemporary Math, Real-Time Imaging, MIC & Fully 3D extended abstracts, Inverse Problems, Journal of Biomedical Optics, Inverse Problems & Imaging, SIAM J. Applied Math, Phys Rev E, Physical Review Letters, Optics Express,*

2008	NSF DMS Applied Math Program 2008, (mail review)
2008-2010	NIH Industrial-Academic study section ad hoc reviewer
2009-2010	NIH Special Conflict study section ad hoc reviewer
2010	NIH BMIT study section ad hoc reviewer
2011	U.S. Army Corps of Engineers ERDC Basic Research (mail review)
2013	NIH Shared Instrumentation: Ultrasound & Optical Study Section
2013	NIH Special Emphasis Panel/Scientific Review Group
2013	NIH Early Independence Award reviewer

SCIENTIFIC COMMITTEE	*Fully 3D Reconstruction in Radiology and Nuclear Medicine, 2007 - 2013*
EDITOR	*Inverse Problems*-Special issue on Thermoacoustic Tomography (Dec '07) *Medical Physics – guest assoc editor*
UWM Committees	Chair, BioMedImaging Faculty Search '06-'07 Chair, Medical Physics Committee Chair, Graduate Financial Committee '08-'09 Colloquium Committee, Department of Physics '05-'06

UWM Medical Imaging Seminar organizer 2008-2010
Industrial Advisory Board member for the Institute for Math and its Applications – 2004-2005
Planning professional programs

a) Organized working meeting at GE Healthcare to explore feasibility of extending Finch's method to truncated xray CT data. Academic participants included: Finch, Grunbaum, Ehrenpreis. Summer 2001.
b) Co-organized working meeting at GE Global Research with Katsevich to bring GE up to speed on his method. March 2003.
c) Organized ~quarterly "Xmodality Reconstruction Telephone Conferences" with GE scientists & engineers regularly calling in from Milwaukee, Global Research in NY, and Haifa. (Less frequently participants call in from France & Japan.) Purpose was to ensure that we take advantage of each others' expertise & do not duplicate effort, publications, or patents.