BIOGRAPHICAL SKETCH

Name: **Jeffrey A. Fessler, Ph.D.**	Position Title: Professor
eRA Commons User Name: fessler	

Education/Training

Institution, Location	Degree	Year	Field of Study
Purdue University, W. Lafayette, IN	B.S.	1985	Electrical Engineering
Stanford University, Stanford, CA	M.S.	1986	Electrical Engineering
Stanford University, Stanford, CA	M.S.	1989	Statistics
Stanford University, Stanford, CA	Ph.D.	1990	Electrical Engineering

Research and professional experience

1986-1989 Research Assistant for A. Macovski, Electrical Engineering Dept., Stanford University, Stanford, CA
1990-1992 Research Fellow, Nuclear Medicine Division, University of Michigan, Ann Arbor, MI
1993-1995 Asst. Professor, Nuclear Medicine Division, University of Michigan, Ann Arbor, MI
1995-1997 Asst. Professor, Electrical Engineering and Comp. Sci. Dept., University of Michigan, Ann Arbor, MI
1998-2004 Assoc. Professor, Electrical Engineering and Comp. Sci. Dept., University of Michigan, Ann Arbor, MI
2004- Professor, EECS Dept., BME Dept., Dept. of Radiology, University of Michigan, Ann Arbor, MI
2006- Associate Chair, ECE Division, EECS Dept., University of Michigan, Ann Arbor, MI

Honors

2007 University of Michigan Faculty Recognition Award
2006 IEEE Fellow
2005 UM College of Engineering Education Excellence Award
2003 EECS Department Outstanding Achievement Award
2002-5 AIMBE Fellow (American Institute for Medical and Biological Engineering)
2000 Henry Russel Award, Univ. of Michigan
(university level award for scholarship and teaching)
1998 IEEE Signal Processing Society 1998 Best Paper Award:
"Exploring estimator bias-variance tradeoffs using the uniform CR bound,"
AO Hero, JA Fessler, M Usman, IEEE Tr. Sig. Proc. 44(8):2026-41, Aug. 1996
1998 Biomedical Engineering Department Teaching Excellence Award
1994 Journal of Nuclear Medicine, Outstanding Manuscript Award (Human Studies)
In vivo mapping of cholinergic neurons in the human brain using SPECT and IBVM,
D. E. Kuhl *et al.*, 35(3):405-10, Mar. 1994.
1993 Francois Erbsmann Investigator Award, Information Processing in Medical Imaging
Conference. Best presentation by young investigator
1991-1992 Dept. of Energy Alexander Hollaender Distinguished Postdoctoral Fellowship
1990-1991 National Institutes of Health National Cancer Institute Postdoctoral Training Fellowship
1985-1988 National Science Foundation Graduate Fellowship

Journal publications (in last 3 years)

[1] Y. Zhang-O'Connor and J. A. Fessler. Fast predictions of variance images for fan-beam transmission tomography with quadratic regularization. *IEEE Trans. Med. Imag.*, 26(3):335–46, March 2007.

[2] R. Zeng, J. A. Fessler, and J. M. Balter. Estimating 3-D respiratory motion from orbiting views by tomographic image registration. *IEEE Trans. Med. Imag.*, 26(2):153–63, February 2007.

[3] W. Grissom, C. Yip, Z. Zhang, V. A. Stenger, J. A. Fessler, and D. Noll. Spatial domain method for the design of RF pulses in multi-coil parallel excitation. *Mag. Res. Med.*, 56(3):620–9, September 2006.

[4] C. Yip, J. A. Fessler, and D. C. Noll. Advanced three-dimensional tailored RF pulse for signal recovery in T_2^*-weighted functional magnetic resonance imaging. *Mag. Res. Med.*, 56(5):1050–9, November 2006.

[5] P. E. Kinahan, A. M. Alessio, and J. A. Fessler. Dual energy CT attenuation correction methods for quantitative assessment of response to cancer therapy with PET/CT imaging. *Technology in Cancer Research and Treatment*, 5(4):319–28, August 2006.

[6] D. Ruan, J. A. Fessler, J. M. Balter, and J-J. Sonke. Exploring breathing pattern irregularity with projection-based method. *Med. Phys.*, 33(7):2491–9, July 2006.

[7] B. Feng, J. A. Fessler, and M. A. King. Incorporation of system resolution compensation (RC) in the ordered-subset transmission (OSTR) algorithm for transmission imaging in SPECT. *IEEE Trans. Med. Imag.*, 25(7):941–9, July 2006.

[8] B. Feng, J. A. Fessler, P. H. Pretorius, R. D. Beach, G. L. Zeng, and M. A. King. Evaluation of the ordered-subset transmission (OSTR) algorithm for transmission imaging on SPECT systems using axially overlapping cone-beams. *IEEE Trans. Nuc. Sci.*, 53(3):1221–9, June 2006.

[9] M. Ting, A. O. Hero, D. Rugar, C. Yip, and J. A. Fessler. Near optimal signal detection for finite state Markov signals with application to magnetic resonance force microscopy. *IEEE Trans. Sig. Proc.*, 54(6):2049–62, June 2006.

[10] Y. Zhang-O'Connor and J. A. Fessler. Fourier-based forward and back-projectors in iterative fan-beam tomographic image reconstruction. *IEEE Trans. Med. Imag.*, 25(5):582–9, May 2006.

[11] S. Ahn, J. A. Fessler, D. Blatt, and A. O. Hero. Convergent incremental optimization transfer algorithms: Application to tomography. *IEEE Trans. Med. Imag.*, 25(3):283–96, March 2006.

[12] Y. K. Dewaraja, M. Ljungberg, and J. A. Fessler. 3-D Monte Carlo-based scatter compensation in quantitative I-131 SPECT reconstruction. *IEEE Trans. Nuc. Sci.*, 53(1):181–8, February 2006.

[13] A. Yendiki and J. A. Fessler. Analysis of observer performance in known-location tasks for tomographic image reconstruction. *IEEE Trans. Med. Imag.*, 25(1):28–41, January 2006.

[14] C. Yip, J. A. Fessler, and D. C. Noll. Iterative RF pulse design for multidimensional, small-tip-angle selective excitation. *Mag. Res. Med.*, 54(4):908–17, October 2005.

[15] J. A. Fessler, S. Lee, V. T. Olafsson, H. R. Shi, and D. C. Noll. Toeplitz-based iterative image reconstruction for MRI with correction for magnetic field inhomogeneity. *IEEE Trans. Sig. Proc.*, 53(9):3393–402, September 2005.

[16] R. Zeng, J. A. Fessler, and J. M. Balter. Respiratory motion estimation from slowly rotating X-ray projections: Theory and simulation. *Med. Phys.*, 32(4):984–91, April 2005.

[17] D. C. Noll, J. A. Fessler, and B. P. Sutton. Conjugate phase MRI reconstruction with spatially variant sample density correction. *IEEE Trans. Med. Imag.*, 24(3):325–36, March 2005.

[18] J. W. Stayman and J. A. Fessler. Efficient calculation of resolution and covariance for fully-3D SPECT. *IEEE Trans. Med. Imag.*, 23(12):1543–56, December 2004.

[19] J. Kim and J. A. Fessler. Intensity-based image registration using robust correlation coefficients. *IEEE Trans. Med. Imag.*, 23(11):1430–44, November 2004.

[20] K. Lee, P. E. Kinahan, J. A. Fessler, R. S. Miyaoka, M. Janes, and T. K. Lewellen. Pragmatic fully 3D image reconstruction for the MiCES mouse imaging PET scanner. *Phys. Med. Biol.*, 49(19):4563–78, October 2004.

[21] K. F. Koral, A. Yendiki, Q. Lin, Y. K. Dewaraja, and J. A. Fessler. Determining total I-131 activity within a VoI using SPECT, a UHE collimator, OSEM, and a constant conversion factor. *IEEE Trans. Nuc. Sci.*, 51(3):611–8, June 2004.

[22] B. P. Sutton, D. C. Noll, and J. A. Fessler. Dynamic field map estimation using a spiral-in / spiral-out acquisition. *Mag. Res. Med.*, 51(6):1194–204, June 2004.

[23] A. Yendiki and J. A. Fessler. A comparison of rotation- and blob-based system models for 3D SPECT with depth-dependent detector response. *Phys. Med. Biol.*, 49(11):2157–68, June 2004.

[24] S. Sotthivirat and J. A. Fessler. Penalized-likelihood image reconstruction for digital holography. *J. Opt. Soc. Am. A*, 21(5):737–50, May 2004.

[25] S. Ahn and J. A. Fessler. Emission image reconstruction for randoms-precorrected PET allowing negative sinogram values. *IEEE Trans. Med. Imag.*, 23(5):591–601, May 2004.

[26] S. Matej, J. A. Fessler, and I. G. Kazantsev. Iterative tomographic image reconstruction using Fourier-based forward and back- projectors. *IEEE Trans. Med. Imag.*, 23(4):401–12, April 2004.

[27] J. W. Stayman and J. A. Fessler. Compensation for nonuniform resolution using penalized-likelihood reconstruction in space-variant imaging systems. *IEEE Trans. Med. Imag.*, 23(3):269–84, March 2004.