

Curriculum Vitae

Name: John W. Dyer
Title: Biomedical Engineering Research Fellow, OUHSC
Research Assistant Professor, Aviation Research Institute, OU
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EDUCATION

Degree	Major	Institution	Date
B.S.	Physiology	OSU	Dec 85
B.S.	Electrical Engineering	OU	Dec 93
M.S.	Electrical Engineering	OU	Dec. 95
Ph.D.	Electrical and Computer Engineering	OU	May 08

RESEARCH EXPERIENCE

Research Assistant Professor <i>Aviation Research Institute</i>	OU	2012-present
Biomedical Engineering Research Fellow <i>Heart Rhythm Institute</i>	OUHSC	2010-present
Post-doctoral Research Associate <i>Develop algorithm to detect atrial arrhythmia mechanism in clinical data</i>	OUHSC	2009-2010
Post-doctoral Research Associate <i>Analyze local behavior of ionosphere range delays for LAAS using L1/L2 data</i>	OU	2008-2012
Graduate Research Associate <i>Develop siting model for Reference Stations in a differential GPS-based landing system</i>	OU	2003-2008
Biomedical Engineer <i>Instrumentation and data collection for cardiac arrhythmia research</i>	IUPUI	1995-1996
Graduate Research Associate <i>Design and construct 128-channel mapping system for epicardial and body-surface mapping</i>	OUHSC	1993-1995

TEACHING EXPERIENCE

Teaching Associate	Electrical Science	OU, Fall 2003
Teaching Associate	Introduction to Engineering	OU, 2004-2005
Teaching Associate	Numerical Methods	OU, Spring 2006
Instructor	Signals and Systems	OU, Fall 2006

Visiting Assistant Professor	Electrical Science, Analog Electronics Lab, Physics Lab General Physics II Intro to Engineering Experimentation Signals and Systems	UCO, 2008-2009
Lecturer	Signals and Systems Random Processes Statistical Digital Signal Processing Circuits II Digital Systems Interfaces	OU, Fall 2009 to present

EMPLOYMENT

University of Oklahoma <i>Research Assistant Professor</i>		2012-present
University of Oklahoma <i>Lecturer and Research Fellow</i>		2009-2012
University of Oklahoma Health Sciences Center <i>Biomedical Engineering Fellow</i>		2009-present
University of Central Oklahoma <i>Visiting Assistant Professor</i>		2008-2009
University of Oklahoma <i>Graduate Research Assistant for Differential GPS-Based Landing System research</i>		2003-2008
Boeing Aerospace <i>Project engineer for non-recurring engineering on E-4B platform</i>		2001-2002
Lucent Technologies <i>System test engineer for digital switch telephone systems</i>		1998-2001
Department of Defense, Tinker AFB <i>Team lead and test set development engineer for hybrid circuits, B-2 platform</i>		1996-1997
Indiana University-Purdue University at Indianapolis <i>Biomedical Engineer</i>		1995-1996
University of Oklahoma Health Sciences Center <i>Animal Research Technician</i> 1986-1988 <i>Research Associate</i> 1988-1991 <i>Graduate Research Assistant</i> 1991-1995		1986-1995

HONORS, AWARDS, AND MEMBERSHIPS

- Eta Kappa Nu, Electrical Engineering Honor Society
- Member of Institute of Electrical and Electronics Engineers (IEEE)
 - Aerospace and Electronics Society
 - Engineering in Medicine and Biology Society
- Member of International Society for Computerized Electrocardiology (ISCE)
- Platinum Award for Manufacturing Excellence, Lucent Technologies

- Gold Award for Manufacturing Excellence, Lucent Technologies
- Winner of Poster Session, ISCE 2010, Albuquerque, NM

PRINCIPAL RESEARCH EXPERIENCE/INTEREST

- Signal Processing (biomedical, imaging, stochastic data analysis)
- Data acquisition and instrumentation
- GPS and Differential GPS uses in aviation

CONFERENCES and SEMINARS

1. "Distribution of noise on the body surface using a 128-channel signal averaged ECG," Computers in Cardiology, Vienna, September, 1985.
2. "Closed-Loop Ground-Based Augmentation System," Invited Lecture, Airport Authority of India, Delhi, India, October, 2006.
3. "Differentiating Atrial Fibrillation Mechanisms by Signal Processing of the Electrocardiogram." International Society for Computerized Electrocardiography, Albuquerque, NM, April 2010
4. "Differentiating Focal from Macro-Reentrant Atrial Fibrillation: Basic and Clinical Findings," Cardiology Grand Rounds Invited Lecture for CME Credit, 2010.

PUBLICATIONS

1. WM Jackman, X Wang, KJ Friday, DM Fitzgerald, C Roman, K Moulton, PD Margolis, AJ Bowman, KH Kuck, GV Naccarelli, JV Pitha, **J Dyer**, R Lazzara. "Catheter Ablation of Atrioventricular Junction Using Radiofrequency Current in 17 Patients: Comparison of Standard and Large-tip Catheter Electrodes. *Circulation*, 1991;83:1562-1576.
2. **JW Dyer**, E Berbari, P Landers, DB Geselowitz, "Simulation of intracardiac electrograms with a moving dipole source. Role of electrode geometry and high-pass filtering," *Jnl of Electrocardiology*, 1994, no. 27, Suppl., pp 146-150.
3. D Romberg D, DB Geselowitz, EJ Berbari, **JW Dyer**, P Persson, "Spatial filtering of epicardial electrograms from infarct regions : an in vitro study," *Computers in Cardiology* 1994, pp.153-156, 25-28 Sep 1994.
4. EJ Berbari, **JW Dyer**, P Lander, D Romberg, DB Geselowitz, "Simulation of infarct zone electrograms: determining activation time in unipolar recordings," *Computers in Cardiology* 1994, pp.149-152, 25-28 Sep 1994.
5. **JW Dyer**, "The Spatial Distribution of Noise and Signal-to-Noise Ratio as Measured With a 128-Lead Signal-Averaged Electrocardiogram," M.S. Thesis, 1995.
6. **JW Dyer**, P Lander, G Ballouz, EJ Berbari, "Distribution of noise on the body surface using a 128-channel signal averaged ECG," *Computers in Cardiology* 1995, pp.83-86, 10-13 Sep 1995.
7. MA Reiger, **JW Dyer**, DB Geselowitz, EJ Berbari, "Interpolation of local activation times versus potentials to derive an activation map in infarcted myocardium," *Computers in Cardiology* 1996, pp 137-140, 8-11 Sep 1996.
8. H Wen, P Huang, **J Dyer**, A Archinal, J Fagan, "Integrating WAAS into LAAS to Improve the Integrity of LAAS," *Proceedings of the 18th International Technical Meeting of the Satellite Division of the Institute of Navigation ION GNSS 2005*, September 13-16, Long Beach, California, pp 2855-2860.
9. P Huang, H Wen, **J Dyer**, J Fagan, G McCartor, "Flight Test Results of a MOPS Compliant LAAS System to Provide Guided Straight and Curved Path Departures and Missed Approaches," *Proceedings of the 18th International Technical Meeting of the Satellite Division of the Institute of Navigation ION GNSS 2005*, September 13-16, Long Beach, California, pp 2830-2836.
10. H Wen, P Huang, **J Dyer**, A Archinal, J Fagan, "Countermeasures for GPS Signal Spoofing," *Proceedings of the 18th International Technical Meeting of the Satellite Division of the Institute of Navigation ION GNSS 2005*, September 13-16, Long Beach, California, pp 1285-1290.
11. **JW Dyer**, VE DeBrunner, G McCartor, JE Fagan, "GPS-WAAS Static Error Analysis Using Wavelet Decomposition and Spectral Estimation," *Proceedings of the 18th International Technical Meeting of the Satellite Division of the Institute of Navigation ION GNSS 2005*, September 13-16, Long Beach, California, pp 2385-2392.

12. C Davis, A Archinal, **J Dyer**, H Wen, J Fagan, "Initial Design and Performance Results of the University of Oklahoma LAAS Far-Field Monitor," *Proceedings of the 20th International Technical Meeting of the Satellite Division of the Institute of Navigation ION GNSS 2007*, September 25-28, Fort Worth, Texas, pp. 379-385.
13. C Davis, **J Dyer**, A Archinal, H Wen, J Fagan, "Conceptualization and Implementation of a Closed-Loop Ground Based Augmentation System," *Proceedings of the 20th International Technical Meeting of the Satellite Division of the Institute of Navigation ION GNSS 2007*, September 25-28, Fort Worth, Texas, pp 461-466.
14. **JW Dyer**, "A New Siting Model for Reference Station Placement in a Ground Based Augmentation System," Ph.D. Dissertation, 2008.
15. **JW Dyer**, BJ Scherlag, L Yu, SS Po, "Differentiating atrial fibrillation mechanisms by signal processing of the electrocardiogram," *Journal of Electrocardiology*, Vol 43, Iss 6, pg 646, 2010.

FUNDED RESEARCH

- Co-Principal Investigator, "LAAS Data Link Vulnerability Assessment and Mitigation," \$251,800, 2005-2007
- Co-Principal Investigator, "Development of a Portable WAAS Data Acquisition Tool for Fixed Wing and Rotary Wing Data Gathering, \$278,038, 2009-2010
- Principal Investigator, "Biomedical Engineering and Signal Processing," Heart Rhythm Institute, \$107,340, 2009-2010
- Principal Investigator, "Biomedical Engineering and Signal Processing," Heart Rhythm Institute, \$108,500, 2010-2011
- Co-Principal Investigator, "Vertical and Lateral Tracking Data Baseline Collection," FAA, \$43,853, 2011
- Co-Principal Investigator, "Develop ADS-B Out Capabilities for Flight Test Assets," FAA, \$149,730, 2011
- Principal Investigator, "AF Mechanistic Assessment from the 12-Lead ECG," Heart Rhythm Institute, \$109,800, 2011-2012

SKILLS

Computer:

- MATLAB[®], LabVIEW, MS Office Suite
- Latex typesetting environment
- Windows, Linux, OS-X

Pilot:

- Instrument rated
- Commercial rated

PERSONAL

- Married, with 2 children
- Hobbies:
 - Auto restoration
 - Flying
 - Antiquarian books on technology

References furnished upon request.