**Curriculum Vitae**

**Randolph L. Moses**

The Ohio State University

College of Engineering

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**AREAS OF RESEARCH SPECIALIZATION:**

Statistical signal processing; sensor array processing; signal detection and estimation; applications to radar signal processing and sensor networks.

**EARNED DEGREES:**

* Ph.D. in Electrical Engineering, Virginia Polytechnic Institute and State University, 1984.
* M.S. in Electrical Engineering, Virginia Polytechnic Institute and State University, 1980.
* B.S. in Electrical Engineering *summa cum laude*, Virginia Polytechnic Institute and State University, 1979.

**PROFESSIONAL POSITIONS:**

* Associate Dean for Research, College of Engineering, The Ohio State University, 2008-present.
* Professor, Department of Electrical Engineering, The Ohio State University, 1996–present.
* Visiting Researcher, Air Force Research Laboratory, Dayton, OH, 2002–2003 (an IPA assignment while on sabbatical leave from Ohio State).
* Associate Professor, Department of Electrical Engineering, The Ohio State University, 1991–1996.
* Visiting Researcher, Systems and Control Group, Institute of Technology, Uppsala University, Sweden, 1994–1995 (sabbatical leave from Ohio State).
* Assistant Professor, Department of Electrical Engineering, The Ohio State University, 1985–1991.
* NATO Postdoctoral Fellow, Eindhoven University of Technology, The Netherlands, 1984–1985.
* Visiting Assistant Professor, Department of Electrical Engineering, Virginia Polytechnic Institute and State University, Summer 1984.
* Summer Faculty Research Fellow, U.S. Air Force Rome Air Development Center, Summer 1983.
* Instructor, Department of Electrical Engineering, Virginia Polytechnic Institute and State University, 1980–1983.

**CONSULTING:**

* Nova Engineering, Cincinnati, Ohio, 2002–2005.
* Signal processing for self-localization of unattended ground sensors.
* Battelle Memorial Institute, Research Triangle, NC.
* Technical Review of US/UK International Technology Alliance Program, 2008
* Signal processing techniques for sensor network calibration, 2003
* B.F. Goodrich Flight Systems, Inc., Columbus, Ohio, 1990–1996.
* Signal processing research and product development for the Stormscope lightning detection and mapping product line. Six patents awarded.
* ThermoTrex Corporation, San Diego, CA, 1993–1994.
* Signal processing research for ground penetrating synthetic aperture radar.

**HONORS AND AWARDS:**

* Fellow of the IEEE, 2010.
* IEEE Signal Processing Magazine Best Paper Award, 2009.
* Best Paper Award, International Conference on Distinguished Computing in Sensor Systems, 2009
* Lumley Research Award, College of Engineering, The Ohio State University, 2007.
* Best Paper Award, Information Processing in Sensor Networks 2004.
* Research Accomplishment Award, College of Engineering, The Ohio State University, 1997.
* DARPA Research Program Award, Information Systems Office, 1997.
* Lumley Research Award, College of Engineering, The Ohio State University, 1995.
* Honorable Mention, C. Holmes MacDonald Outstanding Teacher Award, Eta Kappa Nu, 1992.
* Harrison Faculty Award for Excellence in Engineering Education, College of Engineering, The Ohio State University, 1992.
* Lumley Research Award, College of Engineering, The Ohio State University, 1991.
* Outstanding Technical Report Award, ElectroScience Laboratory, The Ohio State University, 1990.
* NATO Postdoctoral Research Fellow, 1984–1985.
* Cunningham Dissertation Research Fellow, Virginia Polytechnic Institute and State University, 1983–1984.
* Listed in Outstanding Young Men of America, 1983.
* Cunningham Summer Dissertation Research Fellow, Virginia Polytechnic Institute and State University, 1982.
* Pratt Presidential Fellow, Virginia Polytechnic Institute and State University, 1979–1980.
* Named Outstanding Senior in the College of Engineering, Virginia Polytechnic Institute and State University, 1979.

**PROFESSIONAL SERVICE:**

Editorship

* Associate Editor, IEEE Transactions on Signal Processing, 2000–2003.
* Associate Editor, IEEE Transactions on Image Processing, 2008-2010.

Professional Committee Service

* American Society of Engineering Education,
  + Member, Board of Directors, 2014-2016.
  + Member, Executive Committee, Board of Directors, 2015-2016.
  + Chair, Engineering Research Council, 2014-2016.
  + Member, Engineering Research Council Board of Directors, 2009-present.
* IEEE-USA Research and Development Policy Committee,
  + Vice Chair/Chair Elect, 2015-present.
  + Member, 2013-present.
* National Academy of Science Committee on Science and Technology for Defense Warning, 2012-2014.
* National Academy of Science Panel on Digitization and Communications Science, 2012.
* External Review Panel, Wright State University Engineering PhD Program, 2012.
* National Academy of Science Panel on Sensors and Electron Devices, 2011-present.
* External Advisory Board, Department of Electrical and Computer Engineering, North Carolina A&T State University, 2010-2014.
* Sensor Array and Multichannel (SAM) Technical Committee, IEEE Signal Processing Society, 2008-2014.
* Data to Decision Study Group, Institute for Defense Analysis, 2010.
* Technical Review Board, US/UK International Technology Alliance Program, 2008.
* IEEE Signal Processing Society, Chair of Columbus Section, 1998-2005.
* External Dissertation Examination Committee member, Uppsala University, May 1995
* Member, Statistical Signal and Array Processing Technical Committee, IEEE Signal Processing Society, 1991–1994.
* Member, IEEE Columbus Section Executive Committee, 1989–1993 (Secretary, 1992–1993).
* Organized the Columbus Chapter of the IEEE Signal Processing Society, 1989, and served as Chairman and Vice Chairman, 1989–present.

Conference Activities

* Technical Programme Committee, Sensor Signal Processing for Defence Conference, 2015, 2016, 2017.
* Technical Program Committee, Algorithms for Synthetic Aperture Radar Imagery (SPIE Defense Security Symposium), 2004–2011.
* Technical Program Committee, International Symposium on Information Processing in Sensor Networks (IPSN), 2005–2008.
* Technical Program Committee, Adaptive Sensor Array Processing Workshop (ASAP), 2005–2007.
* Organized and chaired a special session on Compressive Sensing at the Radar Signal Processing at the 15th Algorithms for Synthetic Aperture Radar Imagery Conference, 2008.
* Organized and chaired a special session on Radar Signal Processing at the 38th Asilomar Conference on Systems, Systems and Computers, 2004.
* Organized and chaired a special session on Automatic Target Recognition for the 34th Asilomar Conference on Systems, Control, and Computing, 2000.
* Program Committee Member for the SPIE Automatic Object Recognition Conference, 1993–present. Session Chair in 1993, 1994, 1996–2000.
* Organized and chaired a session on Automatic Target Recognition at the 1991 International Conference on Systems Engineering, Dayton, OH.
* Organized and chaired the session on Automatic Target Recognition at the 1990 International Conference on Systems Engineering, Pittsburgh, PA.

Reviewer

* External Dissertation Examination Committee Member, University of Melbourne, Australia, May 2016.
* External Dissertation Examination Committee Member, Uppsala University, Sweden, May 1995.
* External Reviewer for Master of Engineering Science Thesis, University of Melbourne, Australia, Jan. 1993.
* Proposal Reviewer:
  + Israeli Science Foundation
  + National Science Foundation
  + Army Research Office
  + Air Force Office of Scientific Research
  + Swedish Research Council
* Paper Reviewer:
  + IEEE Transactions on Signal Processing
  + IEEE Transactions on Antennas and Propagation
  + IEEE Transactions on Automatic Control
  + IEEE Transactions on Information Theory
  + IEEE Transactions on Aerospace and Electronic Systems
  + IEEE Transactions on Circuits and Systems
  + IEEE/ACM Transactions on Sensor Networks
  + Optical Engineering
  + SIAM Journal on Applied Mathematics
  + IET Proceedings on Radar, Sonar, and Navigation
  + International Journal of Control
  + Automatica
  + Electronics Letters
  + Signal Processing
  + IEEE Control Systems Magazine
  + IEEE Signal Processing Letters

University Committee Service (1995–present):

* University Committees:
  + University Senate, 2004–2006
  + Faculty Council, 2004–2007
  + Faculty Hearing Committee, 2004–2009
  + University P&T Committee, 2003–2006
* College Committees:
  + Executive Committee, 2008-present
  + Chief Advancement Officer Search Committee (Chair), 2015-2016
  + Research Committee (Chair), 2008-present
  + Awards Committee (Chair), 2008 – 2011
  + Budget Committee, 2007–2010
  + Strategic Planning Committee, 2005–2006
  + Engineering Experiment Station Advisory Board, 2003–2007
  + Promotion and Tenure Committee, 2000–2002 (Chair 2001–2002)
  + Core Curriculum and College Services Committee, 2000–2001
  + Wright State University Ph.D. Program Coordinating Committee, 1996–2000
* Department Committees:
  + Faculty Council (Chair), 2001–2002
  + Undergraduate Studies Committee (Chair), 1999–2001
  + Advisory Committee, 1998–2008
  + Curriculum Committee, 1997–2001 and 2004–2005 (Chair 1998–2001 and 2005–2006)
  + Graduate Examination Committee, 1998–2000
  + Communications/Signal Processing Area Committee, 1997–present (Chair 1998–1999)
  + Promotion and Tenure Committee, 1999–2000
  + Communications/Signal Processing Area Committee, 1997–present (Chair 1998–1999)

**COURSES TAUGHT:**

* + Digital Signal Processing
  + Stochastic Signal Processing
  + Random Signal Analysis
  + Stochastic Processes
  + Random Signals and Systems
  + Detection and Estimation Theory
  + Spectral Estimation
  + Radar Signal Processing
  + Communication Systems
  + Linear Systems Theory
  + Control Theory
  + Adaptive Signal Processing
  + Electronics Laboratory
  + Coding and Information Theory
  + Senior Capstone Design

**SOCIETY MEMBERSHIPS:**

* American Society of Engineering Education (ASEE)
  + Institute of Electrical and Electronics Engineers (IEEE)
  + Society of Photonics and Instrumentation Engineers (SPIE)
  + Eta Kappa Nu
  + Tau Beta Pi
  + Phi Kappa Phi
  + Sigma Xi

**PERSONAL:** U.S Citizen; Married; Two children (Laura, 26; Daniel, 23)

**PUBLICATIONS:** Student co-authors are denoted by \*

Books

1. P. Stoica and **R. Moses**, *Spectral Analysis of Signals*, Prentice Hall, 2005.

Chinese language edition: Publishing House of Electronics Industry, 2012.

1. P. Stoica and **R. Moses**, *Introduction to Spectral Analysis*, Prentice Hall, 1997.

Book Chapters

1. “Through-the-Wall SAR for Characterization of Building Interior Structure using Attributed Scattering Center Features,” E. Ertin\* and **R. Moses**, in *Through-Wall Radar Imaging* (M. Amin, ed.), CRC Press, 2010.
2. **“Self Localization of Sensor Networks,” J. Ash\* and R. Moses, in *Handbook on Array Processing and Sensor Networks* (Simon Haykin and K. J. Ray Liu, eds.), IEEE-Wiley, 2009.**
3. **“Distributed Fusion in Sensor Networks: A Graphical Models Perspective,” M. Cetin, L. Chen\*, J. Fisher, A. Ihler,. P. Kreidl, R. Moses, M. Wainwright, J. Williams\*, and A. Willsky, in *Wireless Sensor Networks: Signal Processing and Communications Perspectives,* (A. Swami, Q. Zhao, Y.-W. Hong, and L. Tong, eds.), Wiley, 2007.**

Journal Articles

1. “Distributed Detection of Binary Decisions with Collisions in a Large, Random Network," G. Whipps\*, E. Ertin, and **R. Moses**, *IEEE Transactions on Signal Processing*, vol. 63, no.6, pp.1477-1489, March 2015.
2. “Dynamic Dictionary Algorithms for Model Order and Parameter Estimation,” C. Austin\*, J. Ash, and **R. Moses**, *IEEE Transactions on Signal Processing*, vol. 61, no. 20, pp. 5117-5130, October 2013.
3. “Application of Model-Based Change Detection to Airborne VNIR/SWIR Hyperspectral Imagery,” J. Meola\*, M. Eismann, **R. Moses**, and J. Ash, *IEEE Transactions on Geoscience and Remote Sensing*, vol. 50, no. 10, pp. 3693-3706, October 2012.
4. “Synthetic Aperture Radar for Arbitrary Flight Paths,” J. Jackson\* and **R. Moses**, *IEEE Transactions on Aerospace and Electronic Systems*, vol. 48, no. 3, pp. 2065-2084, July 2012.
5. “Fast Fourier Methods for Synthetic Aperture Radar Imaging,” F. Andersson, **R. Moses**, and F. Natterer, *IEEE Transactions on Aerospace and Electronic Systems*, vol. 48, no. 1, pp. 215-229, January 2012.
6. “An autoregressive formulation for SAR backprojection imaging,” **R. Moses** and J. Ash\*, *IEEE Trans. On Aerospace and Electronic Systems*, vol. 47, no. 4, pp. 2860-2873, October 2011.
7. “Gossip-Based Algorithm for Joint Signature Estimation and Node Calibration in Sensor Networks,” N. Ramakrishnan, E. Ertin\* and **R. Moses**, *IEEE Transactions on Selected Topics in Signal Processing*, vol. 5, no. 4, pp. 665-673, August 2011.
8. “Detecting Changes in Hyperspectral Imagery using a Model-based Approach,” J. Meola\*, M. Eismann, **R. Moses**, and J. Ash\*, *IEEE Transactions on Geoscience and Remote Sensing*, vol. 49, no. 7, pp. 2647-2661, July 2011.
9. “Sparse Signal Methods for 3D Radar Imaging,” C. D. Austin\*, E. Ertin\*, and **R. Moses**, *IEEE Journal of Selected Topics in Signal Processing*, vol. 5, no. 3, pp. 408-423, June 2011.
10. “Enhancement of Coupled Multichannel Images using Sparsity Constraints,” N. Ramakrishnan\***,** E. Ertin\* and **R. Moses**, *IEEE Transactions on Image Processing*, vol. 19, no. 8, pp. 2115-2126, August 2010.
11. “On the relation between sparse reconstruction and parameter estimation with model order selection,” C. Austin\*, **R. Moses** , J. Ash\*, and E. Ertin, *IEEE Journal of Selected Topics in Signal Processing*, vol. 4, no. 3, pp. 560-570, June 2010.
12. “Canonical Scattering Feature Models for 3D and Bistatic SAR,” J. Jackson\*, B. Rigling, and **R. Moses**, *IEEE Transactions on Aerospace and Electronic Systems*, vol. 46, no.2, pp. 525-541, April 2010
13. “Interferometric Methods for 3-D Target Reconstruction with Multi-Pass Circular SAR”E. Ertin\*, **R. Moses** and L. Potter, *Special Issue on EUSAR, IET Journal on Radar, Sonar and Navigation*, vol. 4, no. 2, pp. 464-473, March 2010.
14. “A Model for Generating Synthetic VHF SAR Forest Clutter Images,” J. Jackson\* and **R. Moses**, *IEEE Transactions on Aerospace and Electronic Systems*, vol. 45,no.3, pp. 1138-1152, July 2009.
15. “Through-the-wall SAR attributed scattering center feature estimation,” E. Ertin\* and **R. Moses**, *Special Issue on Through-Wall-Imaging, IEEE Transactions on Geoscience and Remote Sensing*, vol .47 no 5, pp. 1338-1348, May 2009.
16. “On the relative and absolute positioning errors in self-localization systems, J. Ash\* and **R. Moses**, *IEEE Trans. on Signal Processing,* vol. 56, no. 11, pp. 5668-5679, November 2008.
17. “A Model for Generating Synthetic VHF SAR Forest Clutter Images,” J. Jackson\* and **R. Moses**, *IEEE Trans. on Aerospace and Electronic Systems,* 2008 (to appear).
18. “Distributed Fusion in Sensor Networks: A Graphical Models Perspective,” M. Cetin, L. Chen, J. Fisher, A. Ihler\*, **R. Mose**s, M. Wainwright, A. Willksy, *IEEE Signal Processing Magazine*, vol. 23, no. 4, July 2006.
19. **“Motion measurement errors and autofocus in bistatic SAR,” B. Rigling\* and R. Moses, *IEEE Transactions on Image Processing,* vol. 15, no. 4, pp. 1008-1016, April 2006.**
20. **“An Analysis of Error Inducing Parameters in Multihop Sensor Node Localization**,” A. Savvides\*, W. Garber\*, **R. Moses**, and M. Srivastava, *IEEE Transactions on Mobile Computing*, vol. 4, no. 6, p. 567-577, Nov/Dec 2005.
21. **“Acoustic time delay estimation and sensor network self-localization: Experimental results,” J. Ash\* and R. Moses, *Journal of the Acoustical Society of America,* vol. 118, no. 2, pp. 841-850, August 2005.**
22. **“Three-dimensional Surface Reconstruction from Multistatic SAR Images**,” B. Rigling\* and **R. Moses**, *IEEE Transactions on Image Processing*, vol. 14, no. 8, pp. 1159-1172, August 2005.
23. **“Locating the nodes: cooperative localization in wireless sensor networks,” N. Patwari\*, J. Ash\*, S. Kyperountas, A. Hero, R. Moses, N. Correal, *IEEE Signal Processing Magazine, special issue on Signal Processing in Positioning and Navigation*, vol. 22, no. 4, pp. 54-69, July 2005.**
24. **“A Bayesian Approach to Array Geometry Design,” Ü. Oktel\* and R. Moses, *IEEE Transactions on Signal Processing*,** vol. 53, no. 5, pp. 1919–1923, May 2005.
25. **“Nonparametric Belief Propagation for Sensor Network Self-Calibration,”** A. Ihler\*, J. Fisher, **R. Moses**, A. Willsky, *IEEE Journal on Selected Areas of Communication*, vol. 23, no. 4, pp. 809-819, April 2005.
26. **“Taylor Expansion of the Differential Range for Monostatic SAR”**, B. Rigling\* and **R. Moses**, *IEEE Transactions on Aerospace and Electronic Systems***,** vol. 41, no. 1, pp. 60–64, January 2005.
27. “Polar Format Algorithm for Bistatic SAR,” B. Rigling\* and **R. Moses**, *IEEE Transactions on Aerospace and Electronic Systems*, vol. 40, no. 4, pp. 1147–1159, Oct. 2004.
28. “Flight Path Strategies for 3-D Scene Reconstruction from Bistatic SAR,” B. Rigling\* and **R. Moses**, *IEE Proceedings on Radar, Sonar, and Navigation*, vol. 151, no. 3, pp. 149–157, June 2004.
29. “Source Localization with Isotropic Arrays,” Ü. Oktel\* and **R. Moses**, *IEEE Signal Processing Letters*, vol. 11, no. 5, pp. 501–504, May 2004.
30. “On the Geometry of Isotropic Arrays,” Ü. Baysal\* and **R. Moses**, *IEEE Transactions on Signal Processing*, vol. 51, no. 6, pp. 1469–1478, June 2003.
31. “A Self-Localization Method for Wireless Sensor Networks,” **R. Moses**, D. Krishnamurthy, and R. Patterson, *Eurasip Journal on Applied Signal Processing, Special Issue on Sensor Networks*, vol. 2003, no. 4, pp. 148–158, Mar. 2003.
32. “Model-Based Bayesian Feature Matching with Application to Synthetic Aperture Radar Target Recognition,” H.Chiang\*, **R. Moses**, and L. Potter, *Pattern Recognition, Special Issue on Data and Information Fusion in Image Processing and Computer Vision*, vol. 34, no. 8, pp. 1539–1553, Aug. 2001.
33. “Model-Based Classification of Radar Images,” H. Chiang\*, **R. Moses**, and L. Potter, *IEEE Transactions on Information Theory, Special Issue on Information-Theoretic Imaging*, vol. 46, no. 5, pp. 1842–1854, Aug. 2000.
34. “A Combined Order Selection and Parameter Estimation Algorithm for Undamped Exponentials,” C. Ying\*, A. Sabharwal\*, and **R. Moses**, *IEEE Transactions on Signal Processing*, vol. 48, no. 3, pp. 693–701, Mar. 2000.
35. “Design and Analysis of Receiver Filters for Multiple Chip-Rate DS-CDMA Systems,” R. Srinivasan\*, U. Mitra, and **R. Moses**, *IEEE Journal on Selected Areas in Communications*, vol. 17, no. 12, pp. 2096–2109, Dec. 1999.
36. “Effects of Nonzero Bandwidth on Direction of Arrival Estimators in Array Signal Processing,” J. Sorelius\*, **R. Moses**, T. Söderström, and A. Swindlehurst, *IEEE Proceedings on Radar, Sonar and Navigation*, vol. 145, no. 6, pp. 317–324, Dec. 1998.
37. “MODE-type Algorithm for Estimating Damped, Undamped or Explosive Modes,” M. Cedervall\*, P. Stoica, and **R. Moses**, *Circuits, Systems, and Signal Processing*, vol. 16, no. 3, pp. 981–985, May 1997.
38. “Diffusion Approximation of Frequency Sensitive Competitive Learning,” A. Galanopoulos\*, **R. Moses**, and S. Ahalt, *IEEE Transactions on Neural Networks*, vol. 8, no. 5, pp 1026–1030, Sept. 1997.
39. “Efficient Maximum Likelihood DOA Estimation for Signals with Known Waveforms in the Presence of Multipath,” M. Cedervall\* and **R. Moses**, *IEEE Transactions on Signal Processing*, vol. 45, no. 3, pp. 808–811, Mar. 1997.
40. “Attributed Scattering Centers for SAR ATR,” L. Potter and **R. Moses**, *IEEE Transactions on Image Processing (Special Issue on Automatic Target Recognition)*, vol.6, no. 1, pp. 79–91, Jan. 1997.
41. “Maximum Likelihood Array Processing for Stochastic Coherent Soures,” P. Stoica, B. Ottersten, **R. Moses**, and M. Viberg, *IEEE Transactions on Signal Processing*, vol. 44, no. 1, pp. 96–105, Jan. 1996.
42. “Radar Target Identification Using the Bispectrum,” I. Jouny\*, F. Garber, and **R. Moses**, *IEEE Transactions on Aerospace and Electronic Systems*, vol. 31, no. 1, pp. 69–77, Jan. 1995.
43. “Bispectra of Modulated Stationary Signals,” I. Jouny\* and **R. Moses**, *Electronics Letters*, vol. 30, no. 18, pp. 1465–1466, Sept. 1994.
44. “An Efficient Linear Method for ARMA Spectral Estimation,” **R. Moses**, V. Šimonytė, P. Stoica, and T. Söderström, *International Journal of Control*, vol. 59, no. 2, pp. 337–356, Feb. 1994.
45. “Statistical Analysis of TLS-Based Prony Techniques,” W. Steedly\*, C. Ying\*, and **R. Moses**, *Automatica, Special Issue on Statistical Signal Processing and Control*, vol. 30, no. 1, pp. 115–129, Jan. 1994.
46. “Enforcing Positiveness on Estimated Spectral Densities,” A. Stoica, **R. Moses**, and P. Stoica, *Electronics Letters*, vol. 29, no. 23, pp. 2009–11, Nov. 1993.
47. “Two-Dimensional Prony Modeling and Parameter Estimation,” J. Sacchini\*, W. Steedly\*, and **R. Moses**, *IEEE Transactions on Signal Processing*, vol. 41, no. 10, pp. 3127–3137, Nov. 1993.
48. “The Cramér-Rao Bound for Pole and Amplitude Estimates of Damped Exponential Signals in Noise,” W. Steedly\* and **R. Moses**, *IEEE Transactions on Signal Processing*, vol. 41, no. 3, pp. 1305–1318, Mar. 1993.
49. “Analysis of Modified SMI Method for Adaptive Array Weight Control,” R. Dilsavor\* and **R. Moses**, *IEEE Transactions on Signal Processing*, vol. 41, no. 2, pp. 721–726, Feb. 1993.
50. “The Bispectrum of Complex Signals: Definitions and Properties,” I. Jouny\* and **R. Moses**,  
    *IEEE Transactions on Signal Processing*, vol. 40, no. 11, pp. 2833–2836, Nov. 1992.
51. “High Resolution Radar Target Modeling Using a Modified Prony Estimator,” R. Carrière\* and **R. Moses**, *IEEE Transactions on Antennas and Propagation*, vol. 40, no. 1, pp. 13–18, Jan. 1992.
52. “On the Unit Circle Problem: the Schur-Cohn Procedure Revisited,” P. Stoica and **R. Moses**, *Signal Processing*, vol. 26, no. 1, pp. 95–118, Jan. 1992.
53. “Optimal Non-Negative Definite Approximations of Noisy Covariance Sequences,” **R. Moses** and D. Liu\*, *IEEE Transactions on Signal Processing*, vol. 39, no. 9, pp. 2007–2015, Sept. 1991.
54. “Optimal High Order Yule-Walker Estimation of Sinusoidal Frequencies,” P. Stoica, **R. Moses**, T. Söderström, and J. Li\*, *IEEE Transactions on Signal Processing*, vol. 39, no. 6, pp. 1360–1368, June 1991.
55. “High Resolution Exponential Modeling of Fully Polarized Radar Returns,” W. Steedly\* and **R. Moses**, *IEEE Transactions on Aerospace and Electronics Systems*, vol. 37, no. 3, pp. 459–469, May 1991.
56. “Determining the Closest Stable Polynomial to an Unstable One,” **R. Moses** and D. Liu\*, *IEEE Transactions on Signal Processing*, vol. 39, no. 4, pp. 901–906, Apr. 1991.
57. “On Biased Estimators and the Unbiased Cramér-Rao Lower Bound,” P. Stoica and **R. Moses**, *Signal Processing*, vol. 21, no. 4, pp. 349–350, 1990.
58. “Convergence of the SMI and the Diagonally Loaded SMI Algorithms with Weak Interference,” M. Ganz\*, **R. Moses**, and S. Wilson, *IEEE Transactions on Antennas and Propagation*, vol. 38, no. 3, pp. 394–399, Mar. 1990.
59. “Maximum Likelihood Estimation of the Parameters of Multiple Sinusoids from Noisy Measurements,” P. Stoica, **R. Moses**, B. Friedlander, and T. Söderström, *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol. 37, no. 3, pp. 378–392, Mar. 1989.
60. “Instrumental Variable Adaptive Array Processing,” **R. Moses** and A. Beex, *IEEE Transactions on Aerospace and Electronic Systems*, vol. 24, no. 2, pp. 192–202, Mar. 1988.
61. “A Comparison of Numerator Estimators for ARMA Spectra,” **R. Moses** and A. Beex, *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol. ASSP-34, no. 6, pp. 1668–1671, Dec. 1986.
62. “A Recursive Procedure for ARMA Modeling,” **R. Moses**, J. Cadzow, and A. Beex, *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol. ASSP-33, no. 4, pp. 1188–1196, Oct. 1985.

Conference Papers

1. “Distributed sensing for quickest change detection of point radiation sources,” G. Whipps\*, E. Ertin, and **R. Moses**, *IEEE 18th International Conference on Information Fusion*, Washington, DC, pp. 22-27, July 2015.
2. “A consensus-based decentralized mixture of factors analyzers,” G. Whipps\*, E. Ertin, and **R. Moses**, IEEE Intl. Workshop on Machine Learning for Signal Processing (MLSP), Reims, France, pp. 1-6, September 2014.
3. “Distributed detection with collisions in a random, single-hop wireless sensor network,” G. Whipps\*, E. Ertin, and **R. Moses**, *IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2013)*, Vancouver, Canada, pp. 4603-4607, May 2013.
4. “Waveform diversity and optimal change detection,” C. Rossler\*, E. Ertin, and **R. Moses**, *Proceedings of the 46th Asilomar Conference on Signals, Systems and Computers*, Pacific Grove, CA, November 4-7, 2012. , GA, pp. 956-961, May 2012.
5. “Optimal Detectors for Multi-Target Environments,” C. Rossler\*, M. Minardi, E. Ertin, and **R. Moses**, *Proceedings of the 2012 IEEE Radar Conference*, Atlanta, GA, pp. 956-961, May 2012.
6. “Threshold considerations in distributed detection in a network of sensors,” G. Whipps\*, E. Ertin, **R. Moses**, in *Ground/Air Multisensor Interoperability, Integration, and Networking for Persistent ISR III (Proc. SPIE 8389),* Baltimore, MD, April 2012.
7. “Multibaseline IFSAR for 3D target reconstruction,” E. Ertin\*, **R. Moses**, L. Potter, in *Ground/Air Multisensor Interoperability, Integration, and Networking for Persistent ISR III*, *(Proc. SPIE 8389),* Baltimore, MD, April 2012.
8. “Autofocus for Coherent Through-the-Wall Imaging with Multiple Antenna Arrrays, E. Ertin, R. Moses, R. Burkholder, *Proc 4th International Workshop on Computational Advances in Multi-Sensor Adaptive Processing (CAMSAP 2011),* San Juan, PR, Dec. 2011.
9. “Decentralized Recovery of Sparse Signals for Sensor Network Applications,” N. Ramakrishnan\*, E. Ertin, and **R. Moses**, *Proceedings of the 2011 IEEE Statistical Signal Processing Workshop (SSP 2011)*, Nice, France, pp. 233-236, June 2011.
10. “Assumed Density Filtering for Learning Gaussian Process Models, N. Ramakrishnan\*, E. Ertin, and **R. Moses**, *Proceedings of the 2011 IEEE Statistical Signal Processing Workshop (SSP 2011)*, *Proceedings of the 2011 IEEE Statistical Signal Processing Workshop (SSP 2011)*, Nice, France, pp. 257-260, June 2011.
11. “Parameter Estimation using Sparse Reconstruction with Dynamic Dictionaries,” C. Austin\*, J. Ash, **R. Moses**, *Proc.* *2011 International Conference on Acoustics, Speech, and Signal Processing*, Prague, Czech Republic, May 2011.
12. “A Software-Defined Radar System for Joint Communication and Sensing,” C.Rossler\*, E. Ertin\*, and **R. Moses**, *Proc. 2011 IEEE Radar Conference*, Kansas City, KS, May 2011.
13. “Extension and Implementation of a Model-Based Approach to Hyperspectral Change Detection,” J. Meola\*, M. T. Eismann, **R. L. Moses**, and J. N. Ash, in *Algorithms and Technologies for Multispectral Hyperspectral, and Ultraspectral Imagery* *XVII (Proc. SPIE 8048),* Orlando, FL, April 2011.
14. “Performance analysis of sparse 3D SAR imaging,” C. D. Austin\*, J. N. Ash\*, **R. L. Moses**, in *Algorithms for Synthetic Aperture Radar Imagery XVII* *(Proc. SPIE 8051),* Orlando, FL, April 2011.
15. “3D feature estimation for sparse, nonlinear bistatic SAR apertures,” J. Jackson and **R. Moses**, *Proceedings of the IEEE 2010 Radar Conference*, Washington, DC, pp. 298-303, May 2010.
16. “A model-based approach to hyperspectral change detection,”J. Meola\*, M. Eismann, **R. Moses**, and J. Ash, *in Algorithms and Technologies for Multispectral, Hyperspectral, and Ultraspectral Imagery XVI (Proc. SPIE 7695),* S. Shen and P. Lewis, eds., SPIE Defense and Security Symposium, Orlando, FL, 5–9 April, 2010.
17. “Analysis of motion disambiguation using multi-channel circular SAR,”A. Fasih\*, C. Rossler\*, J. Ash, and **R. L. Moses**, *in Algorithms for Synthetic Aperture Radar Imagery XVII (Proc. SPIE 7699)*, E. G. Zelnio and F. D. Garber, eds., SPIE Defense and Security Symposium, Orlando, FL, 5–9 April, 2010.
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**FUNDED RESEARCH:**

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2. “IDCAST: Institute for the Development and Commercialization of Advanced Sensor Technology,” Ohio Wright Center of Innovation, Jan 2007- Jan 2010, $3,500,000 (co-PI with J. Volakis).
3. “Center for Automatic Target Recognition Research,” Air Force Research Laboratory, Sep 2007 – Aug 2012, $7,000,000.
4. “AFRL Sensor Fellowship Program,”, Air Force Research Laboratory, $3,500,000, Sep 2007 – Aug 2012 (co-PI with J. Volakis).
5. “Radar Feature Prediction and Extraction for Visibuilding,” Raytheon Corp. (subcontract for DARPA Visibuilding Program), Phase I: $375,000, July 20007 – Aug 2008; Phase II: $570,557 April 2008 – Dec 2009 (co-PI with J. Volakis).
6. “Object Detection, Localization, and Tracking using Multiple Sensors,” Army Research Laboratory, $250,000, May 2006 – Sep 2007.
7. “MURI 06: Integrated Fusion, Performance Prediction, and Sensor Management for Automatic Target Exploitation,” Air Force Office of Scientific Research (MURI), $5,525,211, May 2006–April 2011.
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10. “Physics-Based Feature Extraction and Reconstruction,” Air Force Research Laboratory, $829,508, Oct 2004–Sep 2007; (co-PI with L. Potter).
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24. “Signal Processing and Coding for Automatic Radar Target Identification,” Wright Laboratories (administered by Veda, Inc.), Mar 1992–Mar 1993, $59,876, (co-PI with S. Ahalt).
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**GRADUATE STUDENT DIRECTION:**

**Current Students:** Gene Whipps, PhD expected January 2017.

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2. “Sparse Methods for Model Estimation with Applications to Radar Imaging,” Christian D. Austin, 2012.
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