LEE C. POTTER

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Degrees

PhD, E.E. 1990 — Cornell University, Ithaca NY
MS, E.E. 1987 — University of Illinois, Urbana IL
BS, E.E. & Math 1984 (summa cum laude) — Vanderbilt University, Nashville, TN

Professional Experience

Professor, 2011–present — The Ohio State University, Columbus
Research focus on signal processing.

Investigator, 2009–present — Davis Heart and Lung Research Institute
Research focus on cardiac magnetic resonance imaging.

Founding Director, 2010-2022 — NSF I/UCRC Center for Surveillance Research
Multi-investigator center developing millimeter-wave and optics sensing technologies.

Research Scientist (IPA), 2002-2003 — Air Force Research Laboratory, Dayton, OH
Research and project management for millimeter-wave and optical imaging technologies.

Associate Professor, 1996–2011 — The Ohio State University, Columbus
Research focus on signal processing.

Assistant Professor, 1991–1996 — The Ohio State University, Columbus
Research focus on signal processing.

Post-doctoral Researcher, 1990 — University of Illinois, Urbana, IL
Research focus on convex optimization for inverse problems.

Awards and Honors

- OSU ECE Department H. C. Ko Service Award, 2019
- Provost's Recognition of "Influential Faculty and Staff" 2019
- Eta Kappa Nu OSU-ECE Pumphrey Distinguished Teaching Award: 2019, 2015, 2011
- OSU ECE Departmental Distinguished Teaching Award: Au20, Sp20, Au19, Sp19, Au18
- OSU College of Engineering Boyer Undergraduate Teaching Innovation Award, 2018
- OSU College of Engineering Lumley Research Award: 2012, 2000
- OSU College of Engineering MacQuigg Award for Outstanding Teaching: 2011, 1993
- OSU College of Engineering Lumley Interdisciplinary Research Award, 2011
- Faculty Honoree, OSU Salute to Undergraduate Achievement: 2006, '04, '02, '01
- Eta Kappa Nu OSU Electrical Engineering Professor of the Year, 2000
- College of Engineering Annual Research Accomplishment Award, 1998
- DARPA Program Award, 1997
- National Science Foundation Research Initiation Award, 1991
- *Daily Illini* Outstanding Graduate Teaching Assistant Award: 1986, 1985
- Vanderbilt University EE Program Award, 1984 National Merit Scholar, 1980.

Research Supervision

Advisee Achievement

- Ashutosh Sabharwal, PhD 1999, Ernest Dell Butcher Professor & Chair, Rice University; Fellow of IEEE, Fellow of National Academy of Inventors, 2017 IEEE Jack Neubauer Memorial Award, 2018 IEEE Advances in Communications Award, 2019 ACM Sigmobile Test-of-time Award, 2019 ACM MobiCom Community Contributions Award and 2021 ACM Sigmobile Test-of-time Award; OSU College of Engineering 2023 Alumni Award for Academic Excellence; founder of WARP (Wireless Open-Access Research Platform); co-founder of Cognita Labs
- Joshua Ash, post-doctoral advisee 2014, Associate Professor, Wright State University
- Taylor Williams, MS 2012, BS2011, Wm. L. Everitt Student Award 2011; Founding math and computer science teacher at Excel Public Charter School in Kent, WA
- Rizwan Ahmad, post-doctoral advisee 2010-11, Associate Professor, Biomedical Engineering, Ohio State University
- Brian Rigling, MS 2000, Ohio Eminent Scholar and Professor, University of Dayton; formerly Professor and Dean, Wright State University; IEEE Fellow; recipient of 2015 IEEE Fred Nathanson Memorial Radar Award
- Emre Ertin, PhD 1999, Associate Professor, Ohio State University. Co-chair, NATO Research Working Group, "Integrating Compressive Sensing and Machine Learning Techniques for Radar Applications."
- Timothy R. Miller, PhD 1999, VP-Engineering, Applied Signals Intelligence, LLC, Vienna, VA
- Michael Gerry, PhD 1997, President and CEO, SAAB Sensis Corporation, East Syracuse, NY; board member, NUAIR Alliance
- Michael Geile, MS 1996, Co-founder & director of advanced technologies, Nova Engineering; Vice-President for Advanced Waveforms, Raytheon BBN Technologies, Batavia, OH

PhD dissertations

- Kaiying Xie, "Fast Spectral and Convex Methods in Clustering," 2023 (primary advisor, Dustin Mixon). Post-doctoral fellow, Johns Hopkins University, Baltimore, MD.
- Shen Zhao, "K-space Reconstruction and Velocity Estimation in Magnetic Resonance Imaging," 2022. Post-doctoral fellow, Stanford Medical Center, Palo Alto, CA
- Azer Shikhaliev, "Techniques for Adaptive Signal Detection," 2021. Lockheed Martin, Liverpool, NY (formerly NRC post-doctoral fellow)
- Adam Rich, "Bayesian Models for Practical Flow Imaging Using Phase Contrast Magnetic Resonance Imaging," 2017. Battelle, Columbus, OH
- Michael Riedl, "New Approaches to Ground Moving Target Indicator Radar," 2016. MIT Lincoln Laboratory, Lexington, MA; currently Battelle, Columbus, OH
- Derya Gol, "Subspace Techniques for Parallel Magnetic Resonance Imaging," 2014. Siemens Healthineers, San Francisco, CA
- Subhojit Som, "Sparse Reconstruction and Applications to Electron Paramagnetic Resonance Imaging," 2010. Data Scientist, Microsoft, Seattle, WA
- Kerry Dungan, "Feature-based Vehicle Classification in Wide-angle Synthetic Aperture Radar," 2010. Senior Scientist, Wright State Research Institute, Fairborn, OH
- Ravikiran Rajagopal, "An Algebraic View of Multidimensional Multiple-Input Multiple-Output Finite Impulse Response Equalizers," 2003. Broadcom, Irvine, CA
- Ashutosh Sabharwal, "Model Based Signal Processing for Communications and Radar," 1999. Ernest Dell Butcher Professor & Department Chair, Rice University, Houston, TX
- Emre Ertin, "Polarimetric Processing and Sequential Detection for Automatic Target Recognition Systems," 1999. Associate Professor, Ohio State University, Columbus, OH

- Timothy R. Miller "Detection, Estimation, and Discrimination of Frequency-Diverse Targets in Ultra-Wideband Synthetic Aperture Radar Data," 1999. Chief Technical Officer, Applied Signals Intelligence Inc., Vienna, VA
- Michael J. Gerry, "Two-Dimensional Inverse Scattering Based on the GTD Model," 1997. President and CEO, Air Traffic Systems Products, SAAB Sensis Corp., East Syracuse, NY
- Da-Ming Chiang, "Parametric Signal Processing Techniques for Model Mismatch and Mixed Parameter Estimation," 1996. VP of Engineering, Upbeat Technology
- Daniel F. Stewart, "Minimal Time-Frequency Localization Techniques and their Application to Image Compression," 1994 (co-advised with S. Ahalt). Principal Engineer, Qualcomm, Raleigh-Durhan, NC

MS research

- Zhizhong Ma, Cambricon, Beijing. "Bi-directional Sampling in Partial Fourier Reconstruction," 2022.
- Abdullah Inshaar, "Polarimetric Radar Denoising with Convolutional Neural Networks," 2020. Applied Physics Laboratory, Laurel, MD
- Azer Shikhaliev, "Low-Rank Structured Covariance Matrix Estimation," 2020. NRC postdoctoral fellow, Fairborn, OH
- S. Mirkazemi, "Evaluation of a Single Frequency Satellite Navigation Software Receiver," 2019. CE doctoral candidate, Columbus, OH
- Mary Lenk, "Respiratory Motion Tracking in Magnetic Resonance Imaging with Pilot Tone Technology," 2018. Applied Research Laboratories, Austin, TX
- Shen Zhao, "Fast Chinese Remainder Theorem for Phase Contrast Magnetic Resonance Imaging," 2017 (co-advised with R. Ahmad). OSU, Columbus, OH
- Rebekah Farrar, "Bayesian Inference via Low-Dimensional Manifolds for Attributed Data Points," 2013 (co-advised with E. Ertin). LISNR, Mason, OH
- Frank Golub, "An Estimation Technique for Spin Echo Electron Paramagnetic Resonance," 2013 (co-advised with R. Ahmad). Ford Motor Company, Detroit, MI
- Jason Palmer, "Dual-scan Acquisition for Accelerated Continuous-wave EPR Oximetry," 2012 (co-advised with R. Ahmad). Percolate, Inc., Denver, CO
- Taylor Williams, "Compressive Sensing for Tomographic Echo Imaging in Two Dimensions," 2012. Teach For America, Seattle, WA
- Christine Bryant, "Multiple-Input Single-Output Synthetic Aperture Radar and Space-Time Adaptive Processing," 2010 (co-advised with E. Ertin). Matrix, Inc., Dayton, OH
- Amrita Ghosh, "Optimum Waveform Scheduling with Software Defined Radar for Tracking Applications," 2010 (co-advised with E. Ertin). Software Development Engineer, Amazon, Seattle, WA
- Stephen Yen, "Parametric Estimation using Electron Paramagnetic Resonance Spectral Models of Over-modulated Lorentzian Absorption and Dispersion Harmonics," 2007. Member of Technical Staff, Battelle Memorial Institute, Columbus, OH
- Samir Sharma, "Three Dimensional Parameter Estimation from Sparse, Multipass Synthetic Aperture Radar," 2007. MR Development Scientist, Toshiba Medical Research Institute, Mayfield, OH
- Linda Moore, "Three-Dimensional Resolution for Circular Synthetic Aperture," 2006. Engineer, Sensors Directorate, Air Force Research Laboratory, WPAFB, OH
- Subhojit Som, "Parametric Approach to Spectal-Spatial Electron Paramagnetic Resonance Imaging," 2006. Data Scientist, Microsoft, Seattle, WA
- Petru Cociorva, "Preconditioners for Sparse Linear Inversion" 2006. Software Design Engineer in Test (SDET), Microsoft, Seattle, WA
- A. Tansu Demirbilek, "Three Dimensional Estimation of Scattering Centers from Magnitude Radar Images," 2002. Risk Manager, North Asset Management, London, England

- Oguz Demirci, "Parametric Modeling of Polarized Synthetic Aperture Radar Imagery," 2002. Senior Research Engineer, Sony, CA
- Anurag Jain, "On the Design of Wideband Arrays," 2001.
- Jawaharlal Tangudu, "Backprojection Algorithms for Ultra-Wideband Radar Imaging," 2000. Senior Systems Engineer, Texas Instruments, Bengaluru, India
- Ravikiran Rajagopal, "Exact FIR Inverses of FIR Filters," 2000. Broadcom, Irvine, CA
- Brian Rigling, "Physics, Fisher and Phase: Information Content in SAR Images," 2000. Ohio Eminent Scholar & Professor, University of Dayton, Dayton, OH
- Michael Geile,"Investigation of Non-Parametric Techniques for Resolving Localized Point Scatterers from Radar Returns," 1996. Vice-President for Advanced Waveforms, Raytheon BBN Technologies, Batavia, OH
- Harvey Zien, "Clutter Statistics and Detection of Targets in Ultra-Wideband Synthetic Aperture Radar Imagery," (R. L. Moses, co-advisor) 1995. Principal Engineer, Broadcom, San Diego, CA
- Ashutosh Sabharwal, "Constrained Signal Reconstruction," 1995. Ernest Dell Butcher Professor & Department Chair, Rice University, Houston, TX
- Timothy R. Miller, "Radio Frequency Interference Suppression for Foliage Penetrating Radar Imaging," 1994. Chief Technical Officer, Applied Signals Intelligence Inc., Vienna, VA
- Chung-Chi Li, "Electrocardiogram Signal Preprocessing for Noninvasive Diagnosis of Arrhythmia Vulnerability," 1993.
- Szi-Wen Chen, "Prony Modeling for Signal-Averaged Electrocardiogram Analysis," 1993.
- Da-Ming Chiang, "Non-Redundant Channel Coding for Vector Quantization," 1992. Engineering Manager, Intel, CA

BS honors theses

- Shiqi Yang, "Image Processing for Synthetic Aperture Radar (SAR) System on Light-weight Drone," 2019.
- Jingong Huang, "Fast Back-projection Algorithm for Synthetic Aperture Radar Imaging System with a Lightweight Unmanned Aircraft System," 2018.
- Sergei Preobrazhensky, "Optimizing Acoustic Array Beamforming to Aid a Speech Recognition System," 2012.
- Taylor Williams, "SONAR imaging using compressive sensing," 2011.
- Danish Siddiqui, "Development and implementation of a fast factorized backprojection code for synthetic aperture radar," 2011.
- Gerardo Balderas, "Passive time synchronization in sensor networks using opportunistic FM radio signals," (co-advised with J. Ash) 2011.
- Sean Winfree, "Angle of Arrival Estimation using Received Signal Strength with Directional Antennas," 2007.
- Albert Joon-Su Byun, "Analog Signal Conditioning Design for a Wireless Data Acquisition Device," 2005.
- Abdul Rahman Kalash, "Design and Implementation of Network Localization Service using Angle-indexed Signal Strength Measurements," 2005.

BS Student Research Associate Advisees

- Eason He (2024)
- Sarah Greenbaum (2017-18; 2018-19)
- Joy Smith (2017-18; 2018-19)
- Daniel Wharton (2017-18; 2018-19)
- Shiqi Yang (2018-19, 2019-20)

- Jingong Huang (2017-18; 2018-19)
- Isaac Zachmann (2018-19)
- Brandi Downs (2017-18)
- Gerardo Balderas, (2010-11)
- Sean Winfree (2006-2007)
- Abdul Rahman Kalash (2004-2005)

Post-doctoral researchers supported

- Rizwan Ahmad (2010-2011), Associate Professor, Biomedical Engineering, Ohio State University
- Joshua Ash (2012-2014), Associate Professor, Electrical Engineering, Wright State University

Current Students

- David Tucker
- Syed Murtaza Arshad (co-advised with R Ahmad)
- Chong Chen (co-advised with R Ahmad)
- Eason He

Teaching

Curriculum development and laboratory donations

- Developed laboratory course, "Digital communication laboratory." Textbook co-authored with Y. Yang, *A Digital Communication Laboratory: Implementing a Software-Defined Acoustic Modem*, Lulu Press, 2015 (IBSN 978-1-329-53790-3). Materials freely available at iTunes App Store, Google Play, iTunesU and Mathworks Matlab Courseware.
- Developed laboratory course, "Real-time digital signal processing." Obtained $11,913 gift from Mathworks, Inc. for hardware and curriculum development.
- Developed a senior-level technical elective, "Introduction to Digital Signal Processing."
- Developed and maintained "Signal Processing Laboratory" ($90,722 equipment donations).
- Developed a graduate-level special topics course, "Pattern Recognition."
- Instituted team-teaching for technical writing and capstone design.

Courses taught

- ECE Sophomore sequence II, ECE291 (Sp12)
- Linear Circuits, ECE301 & ECE2100.02 (Au12, Wi11, Sp10, Au09)
- Signals and Systems, ECE3050 (Sp24, Au23, Au22, Sp22, Au17, Au15, Au13)
- Signals and Systems I, ECE351 (Au03, Au98, Sp94, Sp93, Sp91)
- Signals and Systems II, ECE352 (Au10)
- Analog & Digital Communications, ECE501 & ECE5000 (Sp23, Au19, Au18, Au16, Au11, Wi09, Au08)
- Communications Laboratory, ECE508 & ECE5007 (Sp20, Sp19, Sp18, Sp17, Sp16, Sp15, Au14, Sp14, Wi09)
- ECE Capstone Design, ECE4901 (Sp18, Au17)
- ECE Design I, ECE582 (Wi03, Sp02, Wi02, Wi01, Wi00, Sp98, Wi98)
- ECE Design II, ECE682 (Sp11, Wi10, Sp08, Wi05, Sp04, Wi04, Sp03)
- Introduction to Digital Signal Processing, ECE600 & ECE5200 (Au21, Au20, Sp20, Sp19, Sp18, Sp17, Sp16, Sp15, Wi12, Wi08, Au07, Wi07, Au06, Au04, Au03, Au01, Au00, Au99, Au97, Wi96, Wi94, Au92, Au91)

- Signal Processing Laboratory, ECE609 & ECE5207 (Sp20, Sp15, Sp07, Sp06, Sp05, Sp03, Sp02, Sp01, Sp97)
- Communication Systems, ECE702 (Sp95, Sp92)
- Stochastic Digital Signal Processing, ECE800 (Sp00, Sp99, Wi95, Wi93, Wi92, Wi91)
- Detection and Estimation, ECE806 (Sp06, Sp05)
- Pattern Recognition, ECE808 (Au96, Au93)

Books

- L. Potter and Y. Yang, *A Digital Communication Laboratory: Implementing a Software-Defined Acoustic Modem*, Lulu Press, 2015 (IBSN 978-1-329-53790-3). Materials freely available at iTunes App Store, Google Play, iTunesU, and Mathworks Matlab Courseware.

Journal Papers

Citation data are available at Google Scholar and ResearcherID

1. D. Tucker*, S. Zhao*and L. C. Potter, "Maximum Likelihood Estimation in Mixed Integer Linear Models," *IEEE Signal Processing Letters*, vol. 30, pp. 1557-1561, 2023. Software. DOI:10.1109/LSP.2023.3324833
2. D. Tucker*, J. N. Ash and L. C. Potter, "SAR Coherent Change Detection with Variational Expectation Maximization," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 59, no. 3, pp. 2165-2175, 2023. DOI:10.1109/TAES.2022.3213634
3. D. Tucker*, S. Zhao*, R. Ahmad and L. C. Potter, "Alias-Free Arrays," *IEEE Signal Processing Letters*, vol. 29, pp. 2457-2461, 2022. Software. DOI: 10.1109/LSP.2022.3224834
4. S. Zhao*, R. Ahmad and L. C. Potter, "Venc Design and Velocity Estimation for Phase Contrast MRI," in *IEEE Transactions on Medical Imaging*, vol. 41, no. 12, pp. 3712-3724, Dec. 2022. DOI:10.1109/TMI.2022.3193132
5. D. Tucker*and L. C. Potter, "Polarimetric SAR Despeckling with Convolutional Neural Networks," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 60, pp. 1-12, 2022. 10.1109/TGRS.2022.3152068
6. S. Zhao*, L.C. Potter, and R. Ahmad, "High-dimensional fast convolutional framework (HICU) for calibrationless MRI," *Magnetic Resonance in Medicine*, vol. 86, pp. 1212–1225, 2021. DOI:10.1002/mrm.2872. Software.
7. A. Pruitt*, A. Rich*, Y. Liu, N. Jin, L. Potter, O. Simonetti, and R. Ahmad, "Fully Self-Gated Whole-Heart 4D Flow Imaging from a Five-Minute Scan," *Magnetic Resonance in Medicine*, vol. 85, pp. 1222-1236, 2021. DOI:10.1002/MRM.28491.
8. D. Tucker*and L.C. Potter, "Speckle Suppression in Multi-Channel Coherent Imaging: A Tractable Bayesian Approach," *IEEE Transactions on Computational Imaging*, vol. 6, pp. 1429-1439, 2020. DOI:10.1109/TCI.2020.3029385.
9. J. Varghese*, M. Smyke*, Y. Pan*, S. Rajpal, J. Craft, L.C. Potter, S.V. Raman, R. Ahmad, R. and O.P. Simonetti, "Patient-Adaptive Magnetic Resonance Oximetry: Comparison With Invasive Catheter Measurement of Blood Oxygen Saturation in Patients With Cardiovascular Disease," *Journal of Magnetic Resonance Imaging*, vol. 52, pp. 1449-1459, 2020. DOI:10.1002/jmri.27179. Subject of JMRI editorial.
10. A. Rich*, N. Jin, Y. Liu, LC Potter, OP Simonetti, R. Ahmad, "CArtesian sampling with Variable density and Adjustable temporal resolution (CAVA)," *Magnetic Resonance in Medicine*, vol. 83, pp. 2015-2025, 2020. DOI:10.1002/mrm.28059. Software.
11. A. Shikhaliev*, Y. Chi and L.C. Potter, "Low-Rank Structured Covariance Matrix Estimation," *IEEE Signal Processing Letters*, vol. 26, no. 5, pp. 700-704, May 2019. DOI:10.1109/LSP.2019.290640 Software.
12. A. Rich*, LC Potter, Ning Jin, Y. Liu, OP Simonetti, and R. Ahmad, "A Bayesian approach for 4D flow imaging of aortic valve in a single breath-hold," *Magnetic Resonance in Medicine*, vol. 81, pp. 811-824, 2019. DOI:10.1002/mrm.27386. Software.
13. M. Riedl*and L.C. Potter, "Multi-model shrinkage for knowledge-aided space-time adaptive processing," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 54, issue 5, pp. 2601-2610, October 2018. DOI:10.1109/TAES.2018.2813898.

14. C. Ebersole*, R. Ahmad, A.V. Rich*, L.C. Potter, H. Dong*, A. Kolipaka, "A Bayesian Method for Accelerated Magnetic Resonance Elastography," *Magnetic Resonance in Medicine*, vol. 80, issue 3, pp. 1178-1188, September 2018. DOI:10.1002/mrm.27083.
15. M. Riedl*and L.C. Potter, "Knowledge-aided Bayesian space-time adaptive processing," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 54, issue 4, pp. 1850-1861, August 2018. DOI:10.1109/TAES.2018.2805141.
16. J. Varghese*, L.C. Potter, R. LaFountain, X. Pan, S.V. Raman, R. Ahmad, O.P. Simonetti, "CMR-based blood oximetry via multi-parametric estimation using multiple T2 measurements," *Journal of Cardiovascular Magnetic Resonance*, vol. 19, article 88, 2017. DOI:10.1186/s12968-017-0403-1. Patent pending.
17. J. da Silveira, M. Smyke, A.V. Rich*, N. Jin, D. Scandling; Y. Liu, J.A. Dickerson, C.E. Rochitte, S.V. Raman, L.C. Potter, R. Ahmad, O.P. Simonetti, "Quantification of aortic stenosis diagnostic parameters in patients using a fast three-directional phase contrast MRI technique: comparison to unidirectional phase contrast MRI and transthoracic echocardiography," *Journal of Cardiovascular Magnetic Resonance*, vol. 19, article 35, 2017. DOI:10.1186/s12968-017-0339-5.
18. A. Rich*, L. C. Potter, N. Jin, J. Ash, O. P. Simonetti, R. Ahmad, "A Bayesian Model for Highly Accelerated Phase-Contrast MRI," *Magnetic Resonance in Medicine*, vol. 76, no. 2, pp. 689-701, 2016. DOI:10.1002/mrm.25904. Software. US Patent #10,534,059.
19. D. Gol Gungor*and L. C. Potter, "A subspace-based coil combination method for parallel magnetic resonance imaging," *Magnetic Resonance in Medicine* vol. 75, no. 2, pp. 762-774, 2016.
20. N. Goodman and L. C. Potter, "Pitfalls and Possibilities of Radar Compressive Sensing," *Applied Optics*, vol. 54, issue 8, pp. C1-C13, March 2015.
21. M. Riedl*, L. C. Potter C. Bryant*, and E. Ertin, "Joint synthetic aperture radar and space time adaptive processing on a single receive channel," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 51, no. 1, pp. 331-341, January 2015.
22. J. N. Ash, E. Ertin, L. C. Potter and E. G. Zelnio, "Wide-angle synthetic aperture radar imaging," *IEEE Signal Processing Magazine*, vol. 31, no. 4, pp. 16-26, July 2014.
23. L. Moore*, L. Potter and J. Ash, "Three-dimensional position accuracy in circular synthetic aperture radar," *IEEE Aerospace and Electronic Systems Magazine*, vol. 29, pp. 29-40, January 2014.
24. F. Golub*, L. C. Potter, J. N. Ash, A. Blank and R. Ahmad, "Estimation of spin-echo relaxation time," *Journal of Magnetic Resonance*, vol. 237, pp. 17-22, December 2013. Software.
25. J. Palmer*, L. C. Potter, D. H. Johnson*, J. L. Zweier, and R. Ahmad, "Dual-scan acquisition for accelerated continuous-wave EPR oximetry," *Journal of Magnetic Resonance*, vol. 222, pp. 53-58, September 2012.
26. Rizwan Ahmad, Lee C. Potter, and Valery V. Khramtsov, "Spectral modeling for accelerated pH spectroscopy using EPR," *Journal of Magnetic Resonance*, vol. 2817, pp. 86-92, May 2012.
27. R. Ahmad, S. Som*, D. H. Johnson*, J. L. Zweier, P. Kuppusamy, L. C. Potter, "Multisite EPR oximetry from multiple quadrature harmonics," *Journal of Magnetic Resonance*, vol. 212, pp. 135-143, January 2012.
28. Kerry E. Dungan*and Lee C. Potter, "Classifying Vehicles in Wide-angle Radar using Pyramid Match Hashing," *IEEE Journal of Selected Topics in Signal Processing*, vol. 5, no. 3, pp. 577-591, June 2011.
29. Jason Palmer*, Lee C. Potter and Rizwan Ahmad, "Optimization of magnetic field sweep and field modulation amplitude for continuous-wave EPR oximetry," *Journal of Magnetic Resonance*, vol. 209, no. 2, pp. 337-340, April 2011.
30. Kerry E. Dungan*and Lee C. Potter, "Three-dimensional Imaging of Vehicles with Wide-

angle Synthetic Aperture Radar," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 47, no. 1, pp. 187-200, January 2011.

31. R. Ahmad, S. Som*, E. Kesselring, P. Kuppusamy, J.L. Zweier, L.C. Potter, "Digital Detection and Processing of Multiple Quadrature Harmonics for EPR Spectroscopy," *Journal of Magnetic Resonance*, vol. 207, issue 2, pp. 322-331, December 2010.
32. R. Ahmad, G. Caia, L.C. Potter, S. Petryakov, P. Kuppusamy, and J.L. Zweier, "In Vivo Multisite Oximetry using EPR-NMR Co-imaging," *Journal of Magnetic Resonance*, vol. 207, issue 1, pp. 69-77, November 2010.
33. Kerry E. Dungan*and Lee C. Potter, "Classifying Sets of Transformation-variant Attributed Point Patterns," *Pattern Recognition*, vol. 43, issue 11, pp. 3805–3816, November 2010.
34. Lee C. Potter, Emre Ertin, Jason T. Parker*, and Mujdat Cetin, "Sparsity and Compressed Sensing in Radar Imaging," *Proceedings IEEE*, vol. 98, issue 6, pp. 1006–1020, June 2010. **Thomson Reuters Highly Cited Paper.** Listed on IEEExplore Top 100 Downloads, June 2010.
35. Emre Ertin, Lee C. Potter and Randolph L. Moses, "Interferometric Methods for 3-D Target Reconstruction with Multi-Pass Circular Synthetic Aperture Radar," *IET Radar, Sonar & Navigation*, vol. 4, issue 3, pp. 464–473, June 2010.
36. Joel T. Johnson and Lee C. Potter, "A study of algorithms for detecting pulsed sinusoidal interference in microwave radiometry," *IEEE Transactions on Geoscience and Remote Sensing*, vol. 47, no. 2, pp. 628-636, 2009.
37. Subhojit Som*, Lee C. Potter, Rizwan Ahmad*, Deepti S. Vikram*, and Periannan Kuppusamy, "EPR Oximetry in Three Dimensions using Sparse Spin Distribution," *Journal of Magnetic Resonance*, vol. 193, issue 2, pp. 210–217, August 2008.
38. Rizwan Ahmad*, Deepti S. Vikram*, Lee C. Potter and Periannan Kuppusamy,"Analysis of a Composite EPR Spectrum for Accurate pO2 Measurements," *Journal of Magnetic Resonance*, vol. 192, issue 2, pp. 269-274, June 2008.
39. Rizwan Ahmad*, Deepti S. Vikram*, Bradley Clymer, Lee C. Potter, Yuanmu Deng, Parthasarathy Srinivasan*, Jay L. Zweier and Periannan Kuppusamy, "Uniform distribution of projection data for improved reconstruction quality of 4D EPR imaging," *Journal of Magnetic Resonance*, vol. 187, issue 2, pp. 277–287, August 2007.
40. Subhojit Som*, Lee C. Potter, Rizwan Ahmad*, and Periannan Kuppusamy, "A parametric approach to spectral-spatial EPR imaging," *Journal of Magnetic Resonance*, vol. 186, issue 1, pp. 1–10, May 2007.
41. Ravikiran Rajagopal*and Lee C. Potter, "A generic effective Nullstellensatz," *Linear Algebra and its Applications*, vol. 397, pp. 1–15, March 2005.
42. Ravikiran Rajagopal*and Lee C. Potter, "Multi-Variate MIMO FIR Inverses," *IEEE Transactions on Image Processing*, vol. 12, no. 4, pp. 458–465, April 2003.
43. Ravikiran Rajagopal*and Lee C. Potter, "Multi-Channel Multi-Variate Equalizer Design," *Multidimensional Systems and Signal Processing*, vol. 14, pp. 105–118, January 2003.
44. Ashutosh Sabharwal*and Lee C. Potter, "Wald Statistics for Selection of Nested Nonlinear Models," *IEEE Transactions on Signal Processing*, vol. 50, no. 4, pp. 956–965, April 2002.
45. Hung-Chih Chiang*, Randolph L. Moses, and Lee C. Potter, "Model-Based Bayesian Feature Matching," *Pattern Recognition*, vol. 34, no. 8, pp. 1539–1553, August 2001.
46. Ashutosh Sabharwal*, Dan Avidor, and Lee C. Potter, "Sector Beam Synthesis for Cellular Systems using Phased Antenna Arrays," *IEEE Transactions on Vehicular Technology*, vol. 49, no. 5, pp. 1784–1792, September 2000. US Patent #6,127,972
47. Hung-Chih Chiang*, Randolph L. Moses, and Lee C. Potter, "Model-Based Classification of Radar Images," *IEEE Transactions on Information Theory*, vol. 46, no. 5, pp. 1842–1854, August 2000.

48. Emre Ertin*and Lee C. Potter, "Polarimetric Classification of Scattering Centers using M-ary Bayesian Decision Rules," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 36, no. 3, pp. 738–749, July 2000.
49. Michael Iverson*, Fusun Özgüner, Lee C. Potter, "Statistical Prediction of Task Execution Times Through Analytic Benchmarking for Scheduling in a Heterogeneous Environment," *IEEE Transactions on Computers*, vol. 48, no. 12, pp. 1374–1379, December 1999.
50. Michael J. Gerry*, Lee C. Potter, Inder J. Gupta, and Andria van der Merwe*, "A Parametric Model for Synthetic Aperture Radar Measurements," *IEEE Transactions on Antennas and Propagation*, vol. 47, no. 7, pp. 1179–1188, July 1999.
51. Ching-Hui Ying*and Lee C. Potter, "Minimum Variance Linear Estimation of Amplitudes for Exponential Signal Models," *IEEE Transactions on Signal Processing*, vol. 47, no. 9, pp. 2522–2525, September 1999.
52. E. Ertin*and L. C. Potter, "Polarimetric Imaging for Wide Band Synthetic Aperture Radar," *IEE Proceedings – Radar, Sonar and Navigation*, vol. 145, no. 5, pp. 275–280, October 1998.
53. Ashutosh Sabharwal*and Lee C. Potter, "Convexly Constrained Linear Inverse Problems: Iterative Least-Squares and Regularization," *IEEE Transactions on Signal Processing*, vol. 46, no. 9, pp. 2345–2352, September 1998.
54. Ashutosh Sabharwal*and Lee C. Potter, "Set Estimation via Ellipsoidal Approximations," *IEEE Transactions on Signal Processing*, vol. 45, no. 12, pp. 3107–3112, December 1997.
55. Timothy R. Miller*, John McCorkle and Lee C. Potter, "Radio Frequency Interference Suppression for Foliage Penetrating Radar Imaging," *IEEE Transactions on Aerospace and Electronic Systems*, vol. 33, no. 4, pp. 1142–1156, October 1997.
56. Lee C. Potter and Randolph L. Moses, "Attributed Scattering Centers for SAR ATR," *IEEE Transactions on Image Processing*, vol. 6, no. 1, pp. 79–91, January 1997.
57. Lee C. Potter, Da-Ming Chiang*, Rob Carrière*, and Michael Gerry*, "A GTD-Based Parametric Model for Radar Scattering," *IEEE Transactions on Antennas and Propagation*, vol. 43, no. 10, pp. 1058–1067, October 1995.
58. Da-Ming Chiang*and Lee C. Potter, "Graph Covering Index Assignment in Vector Quantisation for Noisy Channels," *IEE Electronics Letters*, vol. 31, no. 18, pp. 1550–1552, August 1995.
59. Lee C. Potter and Da-Ming Chiang*, "Minimax Nonredundant Channel Coding," *IEEE Transactions on Communications*, vol. 43, no. 2/3/4, pp. 804–811, February/March/April 1995.
60. Daniel F. Stewart*, Lee C. Potter, and Stanley C. Ahalt, "Computationally Attractive Real Gabor Transforms," *IEEE Transactions on Signal Processing*, vol. 43, no. 1, pp. 77–84, January 1995.
61. Lee C. Potter and K. S. Arun, "A Dual Approach to Linear Inverse Problems with Convex Constraints," *SIAM Journal of Control and Optimization*, vol. 31, no. 4, pp. 1080–1092, July 1993.
62. K. S. Arun and Lee C. Potter, "Existence and Uniqueness of Band-Limited, Positive Semidefinite Sequences," *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol. ASSP-38, no. 3, pp. 547–549, March 1990.
63. Lee C. Potter and K. S. Arun, "Energy Concentration in Band-Limited Extrapolation," *IEEE Transactions on Acoustics, Speech, and Signal Processing*, vol. ASSP-37, no. 7, pp. 1027–1041, July 1989.

Patents & Pending

1. S. Zhao*, L. Potter, and R. Ahmad. "Venc Design and Velocity Estimation for Phase-Contrast MRI." Application 63/324,133, filed March 27, 2022.
2. S. Zhao*, L. Potter, and R. Ahmad. "High-dimensional Fast Convolutional Framework (HICU) for Calibrationless MRI." Application No. 63/141,520, filed January 26, 2021.
3. O.P. Simonetti, L.C. Potter, R. Ahmad, and J. Varghese*. "Magnetic resonance imaging

method to non-invasively measure blood oxygen saturation." US Patent #11,026,606. Filed January 26, 2017. Awarded June 8, 2021.

4. A. Rich*; L. Potter, R. Ahmad, O. Simonetti, N. Jin, and J. Ash. "A Bayesian Model for Highly Accelerated Phase-Contrast MRI." US Patent #10,534,059. Awarded January 14, 2020. Filed May 20, 2016.
5. R. Ahmad, O. Simonetti, L. Potter, A. Rich*, and S. Ting*. "Low-Field MRI Scanner for Cardiac Imaging." US Patent #10,345,408, Awarded July 9, 2019.
6. R. Ahmad, O. Simonetti, L. Potter, A. Rich*, and S. Ting*. "Low-Field MRI Scanner for Cardiac Imaging." US Patent #9,874,620, Awarded January 23, 2018.

Conference Papers
(Selected)

1. S Zhao*, R Ahmad, LC Potter, "Maximizing Unambiguous Velocity Range in Phase-Contrast MRI with Multipoint Encoding." 2022 IEEE 19th International Symposium on Biomedical Imaging (ISBI), 1-5, DOI: 10.1109/TMI.2022.3193132.
2. S Zhao*, R Ahmad, LC Potter, "Calibrationless MRI Reconstruction with a Plug-in Denoiser," 2021 IEEE 18th International Symposium on Biomedical Imaging (ISBI), 1846-1849. DOI: 10.1109/ISBI48211.2021.9433815.
3. S. Zhao*, L.C. Potter, K. Lee, and R . Ahmad, "Convolutional Framework for Accelerated Magnetic Resonance Imaging," 2020 IEEE 17th International Symposium on Biomedical Imaging (ISBI), 1-4. DOI:10.1109/ISBI45749.2020.9098393.
4. S. Zhao*, L.C. Potter, and R . Ahmad, "Low-Rank Tensor Completion for Accelerated Magnetic Resonance Imaging," ISMRM & SMRT Virtual Conference, 8-14 August 2020. Online.
5. A.A. Pruitt*, A. Rich*, Y. Liu, N. Jin, LC Potter, OP Simonetti, and R. Ahmad, "Self-gated 5-minute whole heart 4D flow imaging," ISMRM 27th Annual Meeting & Exhibition, 11-16 May 2019, Montreal, QC, Canada
6. A. Rich*, Y. Liu, LC Potter, N. Jin, OP Simonetti, R. Ahmad, "4D Flow Assessment of Aortic Valve Stenosis in a Single Breath-Hold," ISMRM 27th Annual Meeting & Exhibition, 11-16 May 2019, Montreal, QC, Canada
7. S. Zhao*, Lee Potter, Ning Jin, Y. Liu, OP Simonetti, R. Ahmad, "PC-MRI with Phase Recovery from Multiple Wrapped Measurements (PRoM)." 26th ISMRM Meeting & Exhibition, June 2018. (*summa cum laude*: top 5% of submissions)
8. J. Varghese*, L. Desai, R. Ahmad, L. Potter, Ning Jin, C. Rigsby, P. Tannous, A. Armstrong, M. Markl, K. Hor, S. Raman, O. Simonetti, "Non-invasive MR-based blood oximetry via multi-parametric, non-linear estimation: initial multi-center experience in adult and pediatric patients." 26th ISMRM Meeting & Exhibition, June 2018.
9. J. Varghese*, R. Ahmad, S. Raman, L. Potter, O. Simonetti, "Non-invasive quantitative estimation of blood oxygen saturation with MRI: feasibility of machine learning." 26th ISMRM Meeting & Exhibition, June 2018.
10. A. Rich*, Ning Jin, Y. Liu, L. Potter, O. Simonetti, R. Ahmad, "CArtesian sampling with Variable density and Adjustable temporal resolution (CAVA) ." 26th ISMRM Meeting & Exhibition, June 2018.
11. A.V. Rich*, et al., "A Bayesian Approach to Enable Single Breath-Hold 4D Flow MRI," ISMRM 25th Annual Meeting & Exhibition, Honolulu, HI, April 22-27, 2017. (ISMRM merit award, magna cum laude.)
12. C. Ebersole*, R. Ahmad, A. Rich*, L. Potter, A. Kolipaka, "Highly accelerated magnetic resonance elastography via Bayesian modeling," 25th ISMRM Meeting & Exhibition, April 2017.
13. Juliet Varghese*, Rizwan Ahmad, Lee C. Potter, Orlando P. Simonetti, "A calibration-free method to estimate blood oxygen saturation," SMRA 28th Annual International Conference, Chicago, IL, September 21-23, 2016.
14. A. Rich*, et al., "Joint Processing of Highly Accelerated Multi-Directional PC-MRI Data Using ReVEAL," ISMRM 24th Annual Meeting & Exhibition, Singapore, May 7-13, 2016.

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15. J. Varghese*, et al., "Non-invasive blood oxygen saturation measurement by a calibration-free MRI method," *Circulation* 134 (Suppl 1) A15125-A15125, 2016. (Abstract appears in a supplement to the journal.)
16. J. Varghese*, et al., "Venous oxygen saturation estimation from multiple T2 maps with varying inter-echo spacing," 19th Annual Scientific Sessions of Society for Cardiovascular Magnetic Resonance (SCMR), Los Angeles, CA, January 27-30, 2016. Abstract appears in *Journal of Cardiovascular Magnetic Resonance* vol. 18 (Suppl 1):W29.
17. Da Silveira, et al., "Highly accelerated phase-contrast MRI-based multi-directional flow imaging for peak velocity estimation in aortic stenosis patients," 19th Annual Scientific Sessions of Society for Cardiovascular Magnetic Resonance (SCMR), Los Angeles, CA, January 27-30, 2016. Abstract appears in *Journal of Cardiovascular Magnetic Resonance* vol. 18 (Suppl 1):W22.
18. A. Rich*, et al., "Factor Graphs for Inverse Problems: Accelerated Phase Contrast Magnetic Resonance Imaging," IEEE International Conference on Image Processing (ICIP 2015), 27-30 September, 2015 Quebec City, Canada. (Selected for Show-N-Tell demonstration session: 10% of 1270 manuscripts.)
19. A. Rich*, et al., "A Bayesian Approach for Accelerated Phase-contrast MRI," ISMRM 23rd Annual Meeting & Exhibition, Toronto, Ontario, Canada (Selected for Power Pitch: 2.7% of 6038 manuscripts.)
20. M. Riedl*and L. C. Potter, "Knowledge-Aided GMTI in a Bayesian Framework," 2015 IEEE International Radar Conference.
21. M. Riedl*and L. C. Potter, "Knowledge-Aided GMTI in a Bayesian Framework," SPIE Proceedings Vol. 9475: Algorithms for Synthetic Aperture Radar Imagery XXII, May 2015.
22. D. Gol Gungor*, R. Ahmad, and L. C. Potter, "A subspace approach to blind coil sensitivity estimation in parallel MRI," *Journal of Cardiovascular Magnetic Resonance 16* (Suppl 1), W1. Abstract, 17th Annual SCMR Scientific Sessions, January 16-19, 2014, New Orleans, LA. 10.1186/1532-429X-16-S1-W1.
23. R. Ahmad, L. C. Potter, and P. Kuppusamy, "Multisite EPR Oximetry using Multiple Field Modulation Harmonics," *53rd Rocky Mountain Conference for Analytical Chemistry* (EPR Symposium), July 2011.
24. R. Ahmad, C. Austin, and L. C. Potter, "Toeplitz embedding for fast iterative regularized imaging," *Algorithms for Synthetic Aperture Radar Imagery XVIII*, Proc. SPIE, E. G. Zelnio and F. D. Garber, Eds., Apr. 2011.
25. F. Lee-Elkin*and L.C. Potter, YAn algorithm for wide aperture 3D SAR imaging with measured data," *Algorithms for Synthetic Aperture Radar Imagery XVIII*, Proc. SPIE, E. G. Zelnio and F. D. Garber, Eds., Apr. 2011.
26. C. Bryant*, E. Ertin and L.C. Potter, "Combining synthetic aperture radar and space-time adaptive processing using a single-receive channel," *Algorithms for Synthetic Aperture Radar Imagery XVIII*, Proc. SPIE, E. G. Zelnio and F. D. Garber, Eds., Apr. 2011.
27. J. Parker*, LJ Moore, LC Potter, "Resolution and Side-lobe Structure Analysis for RF Tomography," *2011 IEEE Radar Conference*.
28. E. Ertin, L.C. Potter, and R.L. Moses, "Sparse Target Recovery Performance of Multi-frequency Chirp Waveforms," 9th European Signal Processing Conference (EUSIPCO 2011). Print ISSN: 2076-1465.
29. D. Gol*and L.C. Potter, "Ambiguity and regularization in parallel MRI," EMBC 2011, pp. 2829-2832. DOI:10.1109/IEMBS.2011.6090782.
30. S. Som*, L. C. Potter, and P. Schniter, "Compressive Imaging using Approximate Message Passing and a Markov-Tree Prior," *Proceedings of the Asilomar Conference on Signals, Systems, and Computers*, (Pacific Grove, CA), Nov. 2010.
31. J. Ziniel*, L. C. Potter, and P. Schniter, "Tracking and Smoothing of Time-Varying Sparse

Signals via Approximate Belief Propagation," *Proceedings of the Asilomar Conference on Signals, Systems, and Computers*, (Pacific Grove, CA), Nov. 2010.

32. K. E. Dungan*and L. C. Potter, "Effects of Polarization on Wide-angle SAR Classification Performance," *Proceedings IEEE National Aerospace & Electronics Conference,* Dayton, OH, Jul. 2010.
33. S. Som*, L. C. Potter, and P. Schniter, "On Approximate Message Passing for Reconstruction of Non-Uniformly Sparse Signals," *Proceedings IEEE National Aerospace & Electronics Conference,* Dayton, OH, Jul. 2010.
34. J. T. Parker*and L. C. Potter, "Bayesian perspective on sparse regularization for STAP post-processing," *Proceedings IEEE Radar Conference*, May 2010.
35. R. Ahmad, L. C. Potter and P. Kuppusamy, "Nested uniform sampling for multi-resolution 3-D tomography," *Proceedings IEEE International Conference on Acoustics, Speech, and Signal Processing (ICASSP '10)*, Dallas, Apr. 2010.
36. K.E. Dungan*, C. Austin*, J. Nehrbass, and L.C. Potter,"Civilian vehicle radar data domes," Algorithms for Synthetic Aperture Radar Imagery XVII, Proc. SPIE, E. G. Zelnio and F. D. Garber, Eds., Apr. 2010. DOI:10.1117/12.823462. Data set.
37. K.E. Dungan*and L.C. Potter,"Classifying sets of attributed scattering centers using a hash coded database," Algorithms for Synthetic Aperture Radar Imagery XVII, Proc. SPIE, E. G. Zelnio and F. D. Garber, Eds., Apr. 2010. **Student Best Paper Award** DOI:10.1117/12.823462.
38. L.C. Potter, P. Schniter, and J. Ziniel*, "Sparse Reconstruction for Radar," Algorithms for Synthetic Aperture Radar Imagery XV, Proc. SPIE, E. G. Zelnio and F. D. Garber, Eds., vol. 6970, 2008. DOI:10.1117/12.786286.
39. P. Schniter, L.C. Potter, and J. Ziniel*, "Fast Bayesian matching pursuit," Information Theory and Applications Workshop, pp. 326-333, 2008. DOI:10.1109/ITA.2008.4601068.
40. E. Ertin, C.D. Austin*, S. Sharma*, R.L. Moses and L.C. Potter, "GOTCHA experience report: three-dimensional SAR imaging with complete circular apertures," Algorithms for Synthetic Aperture Radar Imagery XIV, Proc. SPIE, E. G. Zelnio and F. D. Garber, Eds., vol. 6568, 2007, p. 656802. DOI:10.1117/12.723245.
41. R.L. Moses, L.C. Potter, and M. Cetin, "Wide-angle SAR imaging," Proc SPIE Vol. 5427, pp. 164-175, Algorithms for Synthetic Aperture Radar Imagery XI; E. G. Zelnio and F. D. Garber, Eds. (April 2004). DOI:10.1117/12.544935.
42. J.N. Ash*and L.C. Potter, "Sensor network localization via received signal strength measurements with directional antennas," 42nd Annual Allerton Conference on Communications, Control and Computing, Monticello, IL, September, 2004. Citeseerx.
43. E. Ertin, J.W. Fisher, and L.C. Potter, "Maximum Mutual Information Principle for Dynamic Sensor Query Problems," Information Processing in Sensor Networks (IPSN) 2003.
44. J. Tangudu*and L.C. Potter, "Back-projection radar imaging for non-uniformly sampled apertures," Proceedings Fourth Annual ARL Federated Laboratory Symposium, Advanced Sensors Consortium, pp. 181-185, March 2000, College Park, MD.
45. L.C. Potter, "Convergence of successive approximations for nonexpansive operators," Twenty-ninth Allerton Conference on Communications, Control and Computing, pp. 149-158, Monticello, IL (1991). pdf.

Technical Reports (Selected)

1. L. C. Potter, "Shooting-and-Bouncing Rays Simulation: Targets on a Dielectric Ground Plane," September 2011.
2. L. C. Potter and K. E. Dungan*, "CVarray: A Distance Array for Simulated X-band Signatures of Civilian Vehicles," January 2010.
3. L. C. Potter, J. W. Nehrbass, and K. E. Dungan*, "GotchaCV: A Data Set of Simulated X-band Signatures of Civilian Vehicles," August 2008.
4. L. C. Potter, "Wide-Angle Imaging," AFRL/SN Technical Report, September 2003.

5. J. Tangudu*and L. C. Potter, "Modifications to ARL Imaging Code for Aperture Weighting," IPS Technical Report TR-99-01, Ohio State University, July 1999.
6. L. C. Potter, T. R. Miller* E. Ertin*, Anthony Dean*, and Randolph Moses, "Ultra-Wideband Wide-Angle Radar Target Detection Algorithms," IPS Laboratory Technical Report TR-97-10, The Ohio State University, August 1997.
7. L. C. Potter, "Feature-Based Automatic Target Recognition: Final Report," IPS Laboratory Technical Report TR-97-09, The Ohio State University, June 1997.
8. L. C. Potter, T. R. Miller*, E. Ertin* and Randolph Moses, "Ultra-Wideband Wide-Angle Radar Target Detection Algorithms," IPS Laboratory Technical Report TR-97-08, The Ohio State University, June 1997.
9. E. Ertin*and L. C. Potter, "Phase Center Corrections for ARL BoomSAR Motion Compensation Files," IPS Laboratory Technical Report TR-97-07, The Ohio State University, March 1997.
10. E. Erten*, R. L. Moses, and L. C. Potter, "Ultra-Wideband Wide-Angle Radar Target Detection Algorithms," IPS Laboratory Technical Report TR-97-03, The Ohio State University, January 1997.
11. T. R. Miller*, J. McCorkle and L. C. Potter, "Radio Frequency Interference Suppression for Ultra-Wideband Radar Imaging," SPANN Laboratory Technical Report TR-96-04, The Ohio State University, October 1996.
12. T. R. Miller*and L. C. Potter, "RFI Suppression Algorithm and Coding Handbook," SPANN Laboratory Technical Report TR-96-01, The Ohio State University, May 1996.
13. E. Ertin*and L. C. Potter, "Polarimetric Feature Extraction Algorithms," SPANN Laboratory Technical Report TR-95-08, The Ohio State University, December 1995.
14. A. Sabharwal*and L. C. Potter, "Radar Target Discrimination Features: A Review of Existing K-band and L-band Approaches," SPANN Laboratory Technical Report TR-95-07, The Ohio State University, December 1995.
15. L. C. Potter, M. P. Desai and D.-M. Chiang*, "Minimax Embedding of a Hypercube," SPANN Laboratory Technical Report TR-92-09, The Ohio State University, November 1992.
16. D.-M. Chiang*and L. C. Potter, "Index Sorting: Programs and Theory for Nonredundant Channel Coding of VQ Codebooks," SPANN Laboratory Technical Report TR-92-08, The Ohio State University, November 1992.
17. L. C. Potter, S. D. Nelson, G. Sen*, S.-W. Chen*, M. R. Carbonara*and B. Ulug*, "An ECG-EPS Database," SPANN Laboratory Technical Report TR-92-04, The Ohio State University, September 1992.
18. L. C. Potter,"A Survey of the Method of Successive Projections and Related Least-Squares Techniques," SPANN Laboratory Technical Report TR-92-03, The Ohio State University, August 1992.

Book Chapters

1. J. Parker*, M. Ferrara, and L. C. Potter, "Sparse Reconstruction and Compressed Sensing with Applications to Radar," in *Principles of Modern Radar: Advanced Techniques.* WH Melvin and JA Scheer, eds., SciTech, 2013.
2. R. Rajagopal*and L. C. Potter, "Multi-channel Multi-variate Equalizer Design," in *Radar Signal Processign and Its Applications.* J. Li et al., eds., Springer, 2013.
3. E. Erten*, R. L. Moses, and L. C. Potter, "Performance analysis of anisotropic scattering center detection," in *Selected SPIE Papers on CD-ROM Series, Vol 6: Automatic Target Recognition*, F. Sadjadi, ed., 2000.

Dissertation

Constrained Signal Reconstruction, University of Illinois, Urbana, IL, 1990.

Research Funding

Principal Investigator

- "Beyond Linear Processing (BLiP)," Defense Advanced Research Projects Agency via Matrix Research, $715,540. July 11, 2023 - September 30, 2024. (Multiple CoE investigators.)
- "Learning with Confidence for Multi-Sensor Exploitation," Air Force Research Laboratory Sensors Directorate, Air Force Materiel Command, $754,500, September 27, 2021 – September 20, 2024. (Multiple sub-awards to CoE faculty investigators.)
- "I/UCRC Phase II: Center for Surveillance Research," National Science Foundation, $593,710, August 1, 2015 – July 31, 2021. (Center director for multi-university industry/university consortium; NSF support includes ARL and ONR MIPR transfers, as well as REU supplements. Additionally, $1,014,307 industry & AFRL dues supported students for multiple advisors.)
- "RF Signal Processing," Air Force Research Laboratory, FA8650-14-C-1712, $989,098, April 4, 2014 – June 30, 2017 (multiple subawards to Ash, Baker, Davis, Ertin, and summer interns).
- "OPERA Task Order 2," Leidos, Inc., $10,000, July 27, 2015 – July 1, 2019 (with Emre Ertin).
- "OPERA Task Order 1," Leidos, Inc., $91,400, September 27, 2013 – February 2, 2015 (with Emre Ertin and Josh Ash).
- "Active Sensing via Compressive Illumination," DARPA, $2,533,804, November 2010 – November 2013 (with Emre Ertin, Philip Schniter, and Joshua Ash co-Is at OSU; subcontracts to Rice, Minnesota, Wisconsin, and UC-Davis).
- "Calibration, image formation, and feature extraction for polarimetric radar," Raytheon, $170,000, June 1, 2010 – October 31, 2013 (with Emre Ertin, co-I).
- "Center for Surveillance Research," National Science Foundation I/UCRC, $400,000, March 2010 – February 2015. (Center director for multi-university industry/university consortium; $352,000/year annual industry contributions across the OSU and WSU sites.)
- "Sparse multispectral processing for accelerated EPR oximetry in three dimension," National Institutes of Health, R21-EB008836, $285,183, June 2009 – May 2011.
- "Radar signal decomposition," Dayton Area Graduate Studies Institute, $189,021, September 2008 – September 2011.
- "Phase II SBIR: Constrained Sparse Inverses for Synthetic Aperture Radar," SET Associates, $175,000, February 2008 – December 2009.
- "Center for Automatic Target Recognition Research," Air Force Research Laboratory, FA8650-07-D-1220, $6,527,559, October 2007 – August 2014. (Subawards to three universities, two companies, and twelve OSU investigators.)
- "AFRL Sensors Graduate Fellowship," Air Force Office of Scientific Research, RF-60014403, $39,917, October 2006 – September 2007.
- "Phase I SBIR: Constrained Sparse Inverses for Synthetic Aperture Radar," SET Associates, RF-60010321 $30,000, October 2006 – December 2006.
- "Phase II SBIR: All Weather Feature Based Combat Identification," SET Associates, RF-60008986. $150,000, May 2006 – April 2008.
- "Intergovernmental Personnel Act (IPA) agreement," Air Force Research Laboratory, RF-743147, $76,181, July 1, 2002 – September 30, 2003.
- "Polarimetric Feature Extraction for Radar Target Detection and Recognition," Army Research Office Augmentation Award for Science and Engineering Training (AASERT), RF-732409, $93,790, June 1, 1996 – May 31, 1999.
- "ARL Federated Laboratory, Advanced Sensors: Signal Processing," Lockheed-Sanders, Inc., RF-735331, $267,000, January 16, 1996 – May 31, 2001.
- "ARL Federated Laboratory, Advanced Sensors: Multi-Sensor Fusion Target Recognition " Lockheed-Sanders, Inc., RF-732172, $144,000, January 16, 1996 – May 31, 2001.

- 'Feature Extraction Module For Model-Based ATR," Environmental Research Institute of Michigan, RF-731498 and 731958, $62,080, July 1, 1995 – November 30, 1996.
- "Feature Extraction for SAR Target Recognition," Advanced Research Projects Agency (administered through the Ohio Aerospace Institute), RF-728345, $220,146, September 1, 1993 – September 30, 1997.
- "Constraint-Based Non-Linear Signal Processing for High Resolution Signal Recovery," National Science Foundation, Research Initiation Award, $60,000, September 1, 1991 – August 31, 1993.

Co-Investigator

- "A comprehensive valvular heart disease assessment with stress cardiac MRI," National Institutes of Health, NIBIB, R01HL151697, $3,377,873, August 1, 2021 – July 31, 2026, (R. Ahmad, PI; 5% responsibility).
- "Development and administration of a robust consortium of minority-serving institutions for the advancement of AFRL's research and workforce," Air Force Research Laboratory, $15,271,050, August 29, 2020 - August 28, 2026, (M. Groeber, PI; 10% responsibility; multiple sub-awards partner institutions.)
- "Prospective slice tracking for cardiac MRI," National Institutes of Health, NIBIB, $408,944, August 2018 - May 2020, (R. Ahmad, PI; 5% responsibility)
- "A Bayesian model for MRI-based accelerated 4D flow imaging of aortic valve stenosis," National Institutes of Health, NIBIB, $405,117, February 2016 - December 2018, (R. Ahmad, PI; 6% responsibility).
- "Target recognition and adaption in contested environments," Leidos (subaward from DARPA), $182,000, August 2015 – October 2017 (with E. Ertin, PI; 24% responsibility).
- "Optimization of EPR acquistion and post-processing," National Institutes of Health, NIBIB, $51,260, April 2011 – March 2012 (with D. H. Johnson (PI) and J. L. Zweier; 10% responsibility).
- "C1 AFRL MIPR," Air Force Research Laboratory, $170,000, July 2010 – June 2012 (with E. Ertin, 33% responsibility).
- "Collaborative research: I/UCRC planning grant," National Science Foundation, $9,996, August 1, 2009 – July 31, 2010 (with R. L. Moses, PI; 35% responsibility).
- "Research Cluster for Layered Sensing," University of Dayton (Ohio Research Scholars Program), $936,475, August 18, 2008 – April 30, 2014 (non-ERP capital with R Lee, RL Moses and JL Volakis; 25% responsibility).
- "Multi-mode, Multi-band Software Defined Radar for Adaptive Tracking and Identification of Targets in Urban Environments," Air Force Office of Scientific Research, $975,024, January 2008 – December 2010, (with E. Ertin (PI) and J. Johnson; 20% responsibility).
- "AFRL Sensors Fellows,"Wright Brothers Institute, Inc., $32,632, October 2007 – June 2010.
- "MURI: Integrated Fusion, Performance Prediction, and Sensor Management for Automatic Target Exploitation," Air Force Office of Scientific Research, RF-60006916, $5,525,211, May 2006 – December 2011, (with R. L. Moses (PI) *et al.*, 10% responsibility).
- "Research Experience for Undergraduates (REU) Supplement to ITR: Cooperative Wireless Networking," National Science Foundation, RF-60005445, June 1, 2005 - July 31, 2006 (with H. El Gamal (PI) and J. Ash, 33% responsibility).
- "Physics-based Radar Feature Extraction and Reconstruction," Air Force Research Laboratory, $504,091, October 1, 2004 - December 29, 2007 (with R. L. Moses (PI), 50% responsibility).
- "Gotcha Support for Sensor ATR Technology," RF-746199, Sverdrup, $53,000, December 15, 2003 – August 15, 2004 (with R. L. Moses (PI), 33% responsibility).

- "Performance assessment for foliage penetrating radar target detection." Dayton Area Graduate Studies Program, $108,278 July 1, 2001 – June 6, 2004 (with R. L. Moses (PI), 40% responsibility).
- "Auto-calibration for acoustic array networks," Battelle, $65,803, July 13, 2001 – June 30, 2002 (with R. L. Moses (PI), 40% responsibility).
- "Feature Extraction using Attributed Scattering Center Models for Model-Based Automatic Target Recognition," Defense Advanced Research Projects Agency, $720,805, February 21, 1997 – February 29, 2004 (with R. L. Moses (PI), 50% responsibility).
- "ARL Federated Laboratory, Advanced Sensors: Radar Algorithms" Lockheed-Sanders, Inc., RF-731993, $769,000, January 16, 1996 – May 31, 2001 (with R. L. Moses (PI), 50% responsibility).
- "Signal Processing Techniques Research for Synthetic Aperture UWB (Ultra-Wide Bandwidth) Radar Detection and Identification," Harry Diamond Labs DAAL01-93-C-0095, $363,269, September 16, 1993 – January 31, 1997. (with R. L. Moses (PI), 50% responsibility).
- "Detection Techniques for Synthetic Aperture Ultra Wide Bandwidth (UWB) Radar," Harry Diamond Labs DAAL02-92-K-0050, $69,862, June 17, 1992 – August 31, 1994, (with R. L. Moses (PI), 10% responsibility).
- "Ultra Wide Band Radar Target Detection and Identification," Harry Diamond Labs AASERT Award DAAL03-92-G-0052, $80,968, June 1, 1992 – May 31, 1995. (with R. L. Moses (PI), 40% responsibility).

Professional Service

External Service

- Technical Track Chair, Radar Imaging, IEEE Radar Conference, 2014.
- Program Committee, Algorithms for Synthetic Aperture Radar Imagery, SPIE: 2009-2024.
- Associate editor, *IEEE Transactions on Image Processing*, 2008
- Session Chair, Advanced Imaging, SPIE: 2011, 2010, 2009
- Session Chair, "MIMO Systems," 2003 IEEE Workshop on Statistical Signal Processing, St. Louis, MO, September 2003.
- Panelist, First Annual ATR Theory Workshop, Dayton, Ohio, August 8-9, 2001.
- Panelist, "Algorithms for Synthetic Aperture Radar Imagery, VII," SPIE Aerosense 2000, Orlando, FL, April 26, 2000.
- Panelist, ARO/DARPA UWB Technology Conference, Washington, DC, 1999.
- Vice-Chair, IEEE Signal Processing Society, Columbus Chapter, 1998
- Chair, IEEE Signal Processing Society, Columbus Chapter: 1997, 1996
- Project Discovery Ohio, innovative STEM instruction for K-12, 1993

University, College, and Department Service

- ECE Promotion & Tenure Committee, chair, 2022-present
- OSP "Red-Team" proposal reviewer for NSF I/UCRC program, 2023
- Proposal writer for CoE submission to OSU RAISE program, "Equity by Design." Proposal won $2M salary and start-up for three CoE faculty positions. Co-authored with Kevin Passino and Rachel Kleit.
- ECE Advisory Committee, 2022-2024
- Oversight designee, ECE Promotion & Tenure Committee, 2016-2022
- Faculty advisory board, Advanced Materials Corridor II, 2018-19
- Department Chair Search Committee 2021, 2017 (chair)
- College of Engineering Faculty Mentoring Committees, 2018-present
- College of Engineering Faculty Professional Development Advisory Group, 2017-18

- Faculty advisory board, Translational Data Analytics, 2015-16
- Faculty advisor, University Honors Collegium: 2015, 2014, 2013
- OSU Denman Undergraduate Research Forum, Judge: 2014, 2012, 2011, 2010, 2009, 2008, 2007.
- OSU First Year Experience Program, Buckeyes Beyond Ohio, 2007
- OSU Signatory at Nile University/American Chamber of Commerce in Egypt Luncheon, Washington, DC, 2007
- College Faculty and Professional Leave Committee, 2006–2009
- Member, ECE Promotion & Tenure Committee, 2011-present
- Member, ECE Advisory Committee, 2008-2018
- Member, ECE Recruiting Committee, 2009-2011
- Member, Curriculum Committee, 2018–2022, 2007–2011, 2000–2002
- Member, Communications/Signal Processing Area Committee, 1991–2019
- Member, Control/Signal Processing Area, 2022–2024
- Chair, Control/Signal Processing Area, 2019–2022
- Chair, Communications/Signal Processing Area, 2019, 2008–2012, 2000–2005
- Member, Graduate Admissions Committee, 2007–2008
- Member, Research Committee, 1997–2005
- ECE Faculty Secretary, 2004-2005
- Member, Graduate Examination Subcommittee, 2002–2003, 1991–1994
- Bollinger-Kissell Scholarship Committee, 1999–2002
- Member, Ad Hoc Strategic Planning Committee, Summer 2001
- Member, Personnel Committee, 1996–2000
- Member, Ad Hoc Committee for Development Staffing, 1998
- Member, Undergraduate Studies Committee, 2018–2020, 1993–1996
- Faculty advisor, Eta Kappa Nu ECE Honorary Society, 1991–2001
- Member, Ad Hoc Hiring Search Committees: 2016, 2009, 2002, 2001, 1999, 1998, 1997, 1996, 1994

Reviewer

- National Science Foundation
- Air Force Research Office
- Army Research Office
- Air Force Office of Scientific Research
- Defense Advanced Projects Agency
- Ohio Supercomputer Center
- *Proceedings of the IEEE*
- *IEEE Trans. Signal Processing*
- *IEEE Trans. Antennas and Propagation*
- *IEEE Trans. Aerospace and Electronic Systems*
- *IEEE Trans. Information Theory*
- *IEEE Trans. Image Processing*
- *IEEE Trans. Selected Areas in Communications*
- *IEEE Trans. Neural Networks*
- *IEEE Trans. Patt. Anal. Machine Intell.*
- *IEEE Trans. Geoscience and Remote Sensing*
- *IEEE Geoscience and Remote Sensing Letters*
- *IEEE Trans. Microwave Theory and Techniques*
- *IEEE Antennas and Propagation Letters*
- *IEEE J. Sel. Topics Appl. Earth Observ. & Remote Sensing*
- *IEEE J. Sel. Topics Signal Processing*

- *IEEE Trans. Acoust., Speech, Sig. Proc.*
- *IEEE AES Magazine*
- *IEEE Signal Processing Magazine*
- *IEEE Signal Processing Letters*
- *IEEE Trans. Computational Imaging*
- *IEEE Trans. Biomedical Engineering*
- *Advances in Signal Processing (EURASIP)*
- *Computer Vision and Image Understanding*
- Irwin Publishers
- *J. Electromagnetic Waves and Applications*
- *J. Magnetic Resonance*
- *J. Optical Society of America, Series A*
- *Magnetic Resonance Imaging*
- *Multidimensional Signals and Systems*
- *Neural Networks*
- *Numerische Mathematik*
- *Optics Letters*
- *PLOSone*
- *Remote Sensing*
- *Sensors MDPI*
- *SIAM J Imaging Sciences*
- *Signal Processing*
- ACM Conference on Embedded Networked Sensor Systems
- American Control Conference
- Asilomar Conference on Signals, Systems, and Computers
- IEEE Intl. Conf. Image Processing (ICIP)
- IEEE Int'l Conf. Acoustics, Speech and Signal Processing (ICASSP)
- IEEE Statistical Signal Processing Conference
- IEEE Milcom Conference
- IEEE Radar Conference
- IEEE Sensor Array and Multichannel Signal Processing Workshop

Professional Memberships

- Senior Member of IEEE
- Eta Kappa Nu
- Phi Beta Kappa

Consulting

- Technology Service Corporation, Trumbull, Connecticut, 2008
- ATK-Mission Research, Dayton, Ohio, 2004
- ThermoTrex Corporation, San Diego, California, 1993 – 1994
- Schlumberger-Doll Research, Ridgefield, Connecticut, 1992

Invited Talks

- "Multi-channel Coherent Imaging." Purdue University, West Lafayette, IN (July 2019)
- "Cardiac MRI: Bayesian Inference for Quantitative Computational Imaging." Translation Meets Foundation Symposium, sponsored by The Mathematical Biosciences Institute (MBI) and TDA@OhioState (Dec 2015)
- "Accelerating Phase-Contrast Cardiac Magnetic Resonance Imaging: A Case Study in Computational Imaging." Carnegie Mellon ECE Graduate Seminar (Mar 2015)
- "Compressive Sensing for Radio Frequency: Hype, Hope, or Help?" Presented at Optical Society of America Incubator: Implications of Compressive Sensing Concepts to Imaging Systems, Washington, DC (Apr 2014)
- "Active Sensing via Compressive Illumination Radar Applications." Presented at Department of Homeland Security Industry Day (Sep 2012)
- "CS for Radio Frequency: Hype, History & Hope." Presented to OSD Jasons Study Group on Compressive Sensing, La Jolla, CA (Jun 2012)

- "Doing More with Less: Comments on Linear Inverse Problems," Applied Mathematics Series, OSU, Columbus, April 21, 2011
- "Turbo Reconstruction of Structured Images: Compressive Sensing for Radar," National Geospatial-Intelligence Agency, McLean, Virgina, June 22, 2010.
- "Accelerated Data Acquisition for EPR Spectral-spatial Imaging," Dorothy M. Davis Heart and Lung Research Institute, Columbus, Ohio, March 19, 2010.
- "Regularization Techniques for Linear Inverse Problems:Compressive Sensing for Radar," AFRL/RYA, Wright-Patterson AFB, July 15, 2009.
- "Accelerated Data Acquisition for EPR Spectral-spatial Imaging," CESBMI Seminar series, Ohio State University, Nov 30, 2009.
- "Regularization Techniques for Linear Inverse Problems: Compressive Sensing for Radar," ATR Center Summer Seminar Series, WPAFB, OH, July 15, 2009.
- "Bayes to the Bone: Sparse Reconstruction from Limited Data," Compressive Sensing Workshop, Durham, NC, February 25, 2009.
- "Doing More with Less: Accelerated Data Acquisition for EPR Imaging," 2008 Engineering & Medicine Translational Research Symposium, Center for Clinical and Translational Science, Ohio State University Medical Center, September 29, 2008.
- "Reduced Acquisition Spectral-Spatial Electron Paramagnetic Resonance Imaging," Coordinated Science Laboratory and Beckman Institute, University of Illinois, Urbana, November 9, 2006.
- "Convex Regularization for EPR Tomographic Imaging," Davis Heart & Lung Institute, Ohio State University, November 1, 2005.
- "Ultra Wideband Radar Imaging," Army Research Laboratory's Federated Laboratory Program Distinguished Lecturer Series, November 16, 2000.
- "Bayes Feature Matching for Radar Target Classification," Department of Electrical Engineering, Rice University, Houston, Texas, December 1999.
- "Signal Processing for Radar Applications," Beckman Institute, University of Illinois, Urbana, Illinois, March 24, 1999.
- "Scattering Models for Processing High Frequency and Polarimetric Radar Data," Center for Image and Signal Processing, Georgia Institute of Technology, Atlanta GA, January 27, 1998.
- "Software Antennas for UWB Communications," ARO-USC Ultrawideband Radio Workshop, Solvang, CA, May 26, 1998.
- "Feature Extraction using Attributed Scattering Center Models," Air Force Institute of Technology, Dayton, Ohio, February 25, 1997.
- "Prony Analysis of ECG Late Potentials," Invited Lecture, Department of Biomedical Engineering, The Ohio State University, May 19, 1993.
- "Dual-Use Signal Processing in Cardiology," The Ohio Aerospace Institute, Cleveland, Ohio, Dual-Use Medical Imaging and Signal Processing Workshop, February 23-24, 1993.
- "Constrained Signal Recovery," University of Colorado, Department of Electrical Engineering Colloquium, Boulder, CO, September 10, 1990.