

LAWRENCE CARIN

Education

Ph. D. in Electrical Engineering, August 1989
University of Maryland
College Park, MD

M.S.E.E., December 1986
University of Maryland, College Park

B.S.E.E., May 1985
University of Maryland, College Park

Employment

James L. Meriam Distinguished Professor of Engineering, 8/1/2023 – present
Duke University

Provost, 2/1/2021 – 8/1/2023
King Abdullah University of Science and Technology (KAUST)

Vice President for Research, 8/1/2019 – 2/28/2021
Duke University

Co-Founder and Chief Scientist, 2/1/2017 – 9/8/2023
Infinia ML, Inc. (Acquired by Aspirion in Sept. 2023)
Durham, NC

Vice Provost for Research, 7/1/2014 – 8/1/2019
Duke University

Chair, Electrical & Computer Engineering Department, 9/1/2011 – 6/30/2014
Duke University

James L. Meriam Distinguished Professor of Engineering, 7/1/2018 – 1/31/2021
William H. Younger Distinguished Professor of Engineering, 7/1/2003 – 1/1/2014
Duke University

Co-Founder and Director of Technology, 5/1/2005 – 9/1/2014
Signal Innovations Group, Inc. (Acquired by BAE Systems in 2014)
Durham, NC

Professor, 1/1/2001 – 1/31/2021
Department of Electrical Engineering

Duke University
Durham, N.C.

Associate Professor, 8/1/1995 – 12/31/2000
Department of Electrical Engineering
Duke University

Associate Professor, 9/1/1994-7/31/1995
Department of Electrical Engineering
Polytechnic University
Brooklyn, N.Y.

Assistant Professor, 9/1/1989-8/31/1994
Department of Electrical Engineering
Polytechnic University

Honors

James L. Meriam Distinguished Professor of Engineering (2018-2021)
William H. Younger Distinguished Professor of Engineering (2003-2014)
IEEE Fellow (2001)
Distinguished Alumnus, University of Maryland Engineering School (2014)
Research Award, Duke University School of Engineering (2002)
Nominated for Duke University Alumni Distinguished Undergraduate Teaching Award (2001-2002)
Member, White House Advisory Panel on the Future of Landmine Research (2002)
Best Paper, OSA Computational Optical Sensing and Imaging, 2013
2000 Applied High-Power Electromagnetics Paper of the Year (conferred by SUMMA Foundation)
DoD SERDP Cleanup Project of the Year (2000 and 2005)
National Science Foundation Research Initiation Award (1992)
Invited Guest Editor, *IEEE Trans. Geoscience Remote Sensing*, June 2001 (on subsurface sensing)
Invited Guest Editor, *Radio Science*, 2003 (on landmine sensing)
Associate Editor: *IEEE Trans. Signal Processing*, *J. Machine Learning Research*, *SIAM J. Imaging Science*, *IEEE Trans. Antennas and Propagation*
PI, Multidisciplinary University Research Initiative (MURI) on landmine sensing, 1996-2001
PI, DARPA MURI on multi-modality inverse scattering, 2002-2007
Full Member, URSI Commission B
Tau Beta Pi and Eta Kappa Nu

Refereed Publications

[1] L. Carin, K. J. Webb, and S. Weinreb, "Matched windows in circular waveguide," *IEEE Trans. Microwave Theory Tech.*, vol. MTT-36, pp. 1359-1362, Sept. 1988.

- [2] L. Carin and K. J. Webb, "Characteristic impedance of multi-level, multiconductor hybrid mode microstrip" *IEEE Trans. on Magnetics.*, vol. 25, pp. 2947-2949, July 1989.
- [3] L. Carin and K. J. Webb, "An equivalent circuit model for terminated hybrid-mode multiconductor transmission lines," *IEEE Trans. Microwave Theory Tech.*, vol. MTT-37, pp. 1784-1793, Nov. 1989.
- [3] L. Carin and K. J. Webb, "Pulse propagation on multi-layered circuit level interconnects," *J. of E. M. Waves and Appl.*, vol. 4, pp. 229-245, Mar. 1990.
- [4] G. W. Slade, L. Carin, Q. Xu, S. E. Borchardt and K. J. Webb, "A study of fin-line leaky-wave antennas," *IEEE Trans. Antennas and Prop.*, vol. AP-38, pp. 411-413, Mar. 1990.
- [5] L. Carin and K. J. Webb, "Isolation effects in single and dual plane VLSI interconnects" *IEEE Trans. Microwave Theory Tech.*, vol. MTT-38, Apr. 1990.
- [6] L. Carin, "Efficient analysis of high-frequency two-dimensional effects in multiconductor printed interconnects" *IEEE Trans. Microwave Theory Tech.*, Jan. 1992.
- [7] L. Carin and N. K. Das, "Leaky-waves on broadside-coupled microstrip," *IEEE Trans. Microwave Theory Tech.*, Jan. 1992.
- [8] L. Carin and L. B. Felsen, "Design-oriented parametrization of truncated periodic gratings," *IEEE Microwave and Guided Wave Letts.*, vol. 2, pp. 367-369, Sept. 1992.
- [9] L. Carin and L. B. Felsen, "Efficient numerical-analytic analysis of ultra-wideband plane wave scattering from a collection of strips," *Int. J. Num. Model.*, vol. 6, pp. 3-17, Jan. 1993.
- [10] L. Carin and K. Agi, "Ultra-wideband transient scattering measurements using optoelectronically switched antennas," *IEEE Microwave Theory Tech.*, vol. 41, pp. 250-254, Feb. 1993.
- [11] D. Kralj and L. Carin, "Short-pulse scattering measurements from dielectric spheres using optoelectronically switched antennas," *Appl. Phys. Lett.*, vol. 62, pp. 1301-1303, Mar. 15, 1993.
- [12] L. Carin and L. B. Felsen, "Time-harmonic and transient scattering by finite periodic flat strip arrays: Hybrid (Ray)-(Floquet Mode)-(MOM) algorithm and its GTD interpretation," *IEEE Trans. Antennas Propagat.*, vol. 41, pp. 412-421, April 1993.
- [13] L. Carin, L. B. Felsen, and M. McClure, "Time-domain design-oriented parametrization of truncated periodic gratings," *IEEE Microwave and Guided Wave Letts.*, vol. 3, pp. 110-112, April 1993.
- [14] L. Carin, K. Agi, K. M. Leung, B. A. Garetz, "Characterization of layered dielectrics with short

electromagnetic pulses," *IEEE J. Quantum Elect.*, pp. 2141-2144, July 1993.

[15] L. Carin, D. R. Kralj, M. R. Melloch, and J. M. Woodall, "Characterization of planar antennas fabricated on GaAs epilayers containing As cluster for picosecond short-pulse applications," *IEEE Microwave and Guided Wave Letts.*, Sept. 1993.

[16] L.B. Felsen and L. Carin, "Wave-oriented processing of scattering data," *Elect. Letters*, vol. 29, pp. 1930-1932, Oct. 28, 1993

[17] L. Carin, L.B. Felsen, S.U. Pillai, D. Kralj, and W.C. Lee, "Dispersive modes in the time domain: analysis and time-frequency representation," *IEEE Microwave and Guided Wave Letters*, vol. 4., pp. 23-25, Jan. 1994.

[18] L.B. Felsen and L. Carin, "Frequency and time domain bragg-modulated ray acoustics for truncated periodic arrays," *J. Acoust. Soc. Am.*, vol. 95, pp. 638-645, Feb. 1994.

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[22] L. Carin and L.B. Felsen, "Wave-Oriented Data Processing for Frequency and Time Domain Scattering by Nonuniform Truncated Array," *IEEE Antennas and Propagation Magazine*, vol. 36, pp. 29-43, June 1994.

[23] A. Sullivan and L. Carin, "Scattering by 2-D strips using an asymptotic hybrid (method of moments)-(physical optics) technique," *Microwave and Optical Technology Letts.*, Aug. 20, 1994.

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microstrip discontinuities," *IEEE Trans. Microwave Theory Tech.*, vol. 43, pp. 2066-2072, Sept. 1995.

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- [41] T. Dogaru and L. Carin, "Time-Domain Sensing of Targets Buried Under a Rough Air-Ground Interface," *IEEE Trans. Antennas Prop.*, vol. 46, pp. 360-372, Mar. 1998.
- [42] L. Carin, G.W. Slade, and K.J. Webb, "Mode coupling and leakage effects in finite size printed interconnects," *IEEE Trans. Microwave Theory and Tech.*, vol. 46, pp. 450-457, May 1998.
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- [53] N. Geng, A. Sullivan and L. Carin, "Fast multipole method for scattering from a arbitrary PEC target above or below a lossy half space," *Microwave and Optical Tech. Letts.*, June 20, 1999.

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- [71] T. Dogaru and L. Carin, "Application of multiresolution time-domain schemes to two-dimensional electromagnetic scattering problems," *IEEE Trans. Antennas Propagat.*, vol. 50 pp. 774-784, June 2002.
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