CURRICULUM VITAE FOR KATHLEEN L. MELDE
(previously Kathleen L. Virga)

CHRONOLOGY OF EDUCATION

6/96 Ph.D. **Electrical Engineering**
University of California, Los Angeles (UCLA), CA
Dissertation: "Modeling and Performance Visualization of Broadband Integrated Antennas for Radio Communications Applications"
Major field: Electromagnetics
Advisor: Yahya Rahmat-Samii (elected to National Academy of Engineering, 2008)

8/87 M.S. **Electrical Engineering**
California State University, Northridge, CA
Thesis: "Switched Susceptance Phase Shifter"
Emphasis in Microwave Engineering.
Advisor: Edmund S. Gillespie

8/85 B.S. **Electrical Engineering**
California State University, Long Beach, CA

CHRONOLOGY OF EMPLOYMENT

1/19-present **Associate Dean, Faculty Affairs**
College of Engineering
University of Arizona, Tucson, Arizona

6/16-6/19 **Director of Graduate Studies**
Department of Electrical & Computer Engineering
University of Arizona, Tucson, Arizona

8/96 - present **Professor (Asst. Prof. 1996-2003, Assoc. Prof. 2003-2010)**
Department of Electrical & Computer Engineering
University of Arizona, Tucson, Arizona

2/85 - 8/96 **Staff Engineer**
Hughes Aircraft Company
El Segundo, California

12/93 - 6/95 **Research Assistant**
Department of Electrical Engineering, UCLA
Los Angeles, California

9/93 - 12/93 **Teaching Assistant**
Department of Electrical Engineering, UCLA
Los Angeles, California

9/88 - 6/89 **Part-Time Lecturer**
Dept. of Electrical Engineering, California State University, Long Beach
Long Beach, California

2/84 - 2/85 **Technical Student**
Rockwell International
Long Beach, California

NOTABLE ACHIEVEMENTS/IMPACTS SPECIFIC TO AWARD CRITERA

- First female faculty member ever to serve as Associate Dean in College of Engineering at University of Arizona
- Authored ASEE Deans Diversity Application for UArizona College of Engineering, result was award of Bronze level status
- Initiated processes for increased accountability and transparency regarding diversity, equity, and inclusion in faculty new hiring in the UArizona College of Engineering
- Co-leading College of Engineering, ReOpening Committee for Fall 2020. Leading large team of faculty, staff, and students in creating safe reopening plan for fall 2020 under conditions of global pandemic. All aspects are under my leadership, research, teaching and facilities, students, and equitable outcomes.
- Consistently mentor engineering faculty worldwide. This includes faculty of all ranks at UArizona as well as faculty in the US and around the world. This includes many faculties who are underrepresented minorities in engineering. Informal career mentor to new faculty in ECE and worldwide. Provide my academic CV to nearly all incoming assistant professors and provide informal mentoring to faculty on a regular basis.
- Served as Awards Chair for a 10,000 person technical society. IEEE-APS (Institute of Electrical and Electronic Engineers, Antennas and Propagation Society). As awards chair, I was responsible for overseeing the awards criteria, nominations, awardee selections, and awards presentation. This included provide advice and mentorship to nominators and future awardees. The Awards Chair is someone of prominence and esteem in the APS.
- 2012 Fellow of the IEEE for "Contributions to Tunable Antennas and Their Integration in Electrical Packaging,"
- 2010 Recipient of Excellence at the Student Interface Award, Department of Electrical and Computer Engineering, University of Arizona.
- Diverse teaching portfolio in CoE at all levels of our curriculum, ENGR Freshman, Junior level courses, Senior/Graduate Courses, On-Line Graduate Courses and Senior Capstone Projects.
- Fostered a culture of individual accountability among graduate students. Fostered a culture of peer-to-peer mentoring amongst students and a culture of professional responsibility with a diverse international graduate student population.
- Successfully launched the first ECE Graduate Student Research Poster Symposium in spring 2016, and held a second in fall 2017. Selected student posters were presented at spring 2018 Industrial Advisory Board Meeting. Over 50 student posters presented at inaugural event.

HONORS AND AWARDS (not previously mentioned)

- 2015 Invited Keynote Speaker to EuCAP Conference
- 2012-2014 University of Arizona College of Engineering, Teaching Fellow
- 2011 Recipient of Scialog Award from the Research Corporation of Scientific Advancement
- 2008 IBM Faculty Award
- Named "University of the Year" from Orbit F/R, for creating an environment which fosters high achievement and interactive learning in antenna measurements, 2004
- Elected to 3-year term to Administrative Committee (AdCom), IEEE (Institute of Electrical and Electronic Engineers) Antennas & Propagation Society, 1999-2001
- 2001 University of Arizona, Department of Electrical and Computer Engineering, Undergraduate Course Improvement Award
- Elected to URSI (International Radio Science Union) Commission B, in 1999

- Awarded 2nd Place in the 1996 USNC-URSI National Radio Science Meeting Student Paper Competition
- Awarded the UCLA Dept. of Electrical Engineering Graduate Woman of the Year in 1996
- Invited 1996 Keynote Speaker, California State University Northridge, School of Engineering Commencement
- Hughes Aircraft Company Doctoral Fellowship (1990-1996)
- Four Hughes Aircraft Company Invention & Patent Awards (1987-1992)
- Hughes Aircraft Company Microwave Master's Fellowship
- Rockwell International Engineering Scholarship (1983)
- TRW Engineering Scholarship (1982)
- Member Tau Beta Pi, Engineering Honor Society
- Member Eta Kappa Nu, Electrical Engineering Honor Society
- Member Sigma Psi, Science and Engineering Honor Society

SERVICE/OUTREACH

Outreach (Local/state)

- College of Engineering Liaison for STEM Night, at Esperero Canyon Middle School, Spring 2014
- Participant in Society of Women Engineers mentoring event, Spring 2013
- Lecturer for Society of Women Engineering, "Suite with SWE", Spring 2013
- College of Engineering Liaison for Engineering Robotics Demonstration at Ventana Vista Elementary School "Science Night," Fall 2008
- Panelist for UA Women in Science and Engineering (WISE) in "Expanding your Horizons" event, Spring 2007
- 2014 Senior Research Project Advisor, Mr. Luke Wohlford, (High School Senior) BASIS Tucson North
- 2015 Senior Research Project Advisor, Mr. Parthib Samadder, (High School Senior) BASIS Tucson North

Outreach (National/International)

- External Reviewer, Academic Program Review, Dept. of Electrical Engineering, University of Colorado, Spring 2018
- External Reviewer, Ph.D. Dissertation, Spanish University
- External Reviewer, Ph.D. Dissertation, Indian University
- External Reviewer, Ph.D. Dissertation, Griffiths University, Australia, 2015
- 2012-2014, Reviewer for Spanish URSI Best Paper Competition
- Fellows Selection Committee, IEEE Antennas and Propagation Society (2015-2016)
- Project Connect Participant and Career Panelist at 2015 International Microwave Symposium. Project Connect is funded by the National Science Foundation as an outreach activity for under represented minorities.
- Guest Co-Editor, IEEE Transactions on Antennas and Propagation, Special Issue on Antennas and Propagation for Cognitive Radio and Systems.
- General Conference Chair, IEEE Electrical Performance of Electronic Packaging and Systems, San Jose, CA 2013
- General Conference Co-Chair, IEEE Electrical Performance of Electronic Packaging and Systems, 2012
- Finance Chair, 2016 IEEE International Symposium on Antennas and Propagation

- Special Sessions Chair, 2017 IEEE International Symposium on Antennas and Propagation
- Invited for NSF EARS Workshop (Enhancing Access to the Wireless Spectrum), 2010
- Associate Editor, IEEE Transactions on Antennas and Propagation (2001-2007)
- Associate Editor, IEEE Antennas and Wireless Propagation Letters (2006-2010)
- USNC-URSI (Commission B) Membership Committee (2008-present)
- IEEE Antennas and Propagation Society, Awards Committee (2003-2008) and (2014)
- Appointed Chair for IEEE-APS Society Advisory Committee for Annual IEEE Antennas and Propagation Society Student Paper Competition (2008-present)
- IEEE Antennas and Propagation Society Professional Activities (PACE) Chair, 1996-1999
- IEEE Antennas and Propagation Society AdCom, 3 Year Term 1999-2001
- Reviewer for
  - IEEE Transactions on Antennas and Propagation
  - IEEE Antennas and Wireless Propagation Letters
  - IEEE Transactions on Vehicular Technology
  - IEEE Transactions on Advanced Packaging
  - IEEE Transactions on Microwave Theory and Techniques
  - IEEE Microwave Components and Wireless Letters
  - IEEE Press Book Proposals
  - Cambridge University Press Book Reviews
- NSF Proposal reviews for 2012 (February 2012 and September 2012), 2013, 2014
- Committees for Conferences/Symposia
  - Chair, Student Day, for 2014 Antenna Measurements Techniques Association Conference
  - Technical Program Committee, 2006- 2009 IEEE Antennas and Propagation Symposiums,
  - Technical Program Committee, 2007-2014 IEEE Topical Meeting on Electrical Performance of Electronic Packaging and Systems,
  - Judge for Student Paper Competition for 2007 IEEE Antennas and Propagation Symposium, Honolulu, Hawaii
  - Judge for Student Paper Competition for 2006 IEEE Electrical Performance of Electronic Packaging, Phoenix, Arizona, October 2006
  - Chair, Student Paper Competition for 2004 IEEE Antennas and Propagation Symposium, Monterey, California
- Conferences/Symposia
  - Session Chairs, EPEPS and APS
  - Special Session Organizer and Chair, "Unleashing the Capabilities of Cognitive Radios," 2011 IEEE Antennas and Propagation Symposium, Spokane, WA, July, 2011
  - Session Chair for Session 411, "Electronic Devices and Applications," 2009 IEEE Antennas and Propagation Symposium, Charleston, South Carolina, June 2009.
  - Session Chair for Session 5, "Measurements," 17th Annual Conference on Electrical Performance of Electronic Packaging, San Jose, CA, October 2008.
  - Special Session Organizer and Chair for Session 319, "Enabling Technology for Antennas and RF Front Ends for Multifunction Communications Systems," 2008 IEEE Antennas and Propagation Symposium, San Diego, CA, June 2008.
  - Session Chair for Session 105, "RF Devices and Their Measurement," 2008 IEEE Antennas and Propagation Symposium, San Diego, CA, June 2008.
  - Session Chair for Session 10, "Advanced Transmission Lines," 16th Annual Conference on Electrical Performance of Electronic Packaging, Atlanta, GA, October 2007.
  - Special Session Organizer and Chair, "Antennas and RF Front Ends for Software Defined Radio," 2007 IEEE Antennas and Propagation Symposium, Honolulu Hawaii, July 2007.

- Session Chair for Session 14, "EM Modeling for Transmission Lines," 15th Annual Conference on Electrical Performance of Electronic Packaging, Phoenix, AZ, October 2006.
- Session Chair for Session 5.4 "Reconfigurable Antennas" 2005 Software Defined Radio Forum (SDR '05), Orange County, California.
- Session Chair for Session 96 "Array Analysis and Optimization Techniques," 2004 Antennas and Propagation Symposium in Monterey, California.

Intramural Citizenship (ECE Department Committees)

- Director Graduate Studies, ECE, June 2016-present
- Chair, ECE Graduate Studies Committee 2016-present
- Member, ECE Executive Committee 2016-present
- Chair, ECE Peer Review Committee 2015
- Member, ECE Faculty Status Committee (promotion and tenure) 2014-2016
- Chair, ECE Faculty Search Committee (3 positions)
- Elected Member, ECE Committee on Committees, 2009 and 2010
- Member, ECE Faculty Status (promotion and tenure) Committee, 2010-present (Chair in 2011)
- Chair, ECE Instructional Software and Equipment Planning Committee 2003-present
- Member, ECE Department Graduate Studies Committee 2005-2010
- Member, ECE Department Academic Program Review, Self-Study Report Committee (Fall 2007)
- Member, Nomination Committee for Regents' Professor Award (2007)
- Member, ECE Department Peer Review Committee, 2005-2006 Academic Year
- Member, ECE Department Head Search Committee, 2002-2004 Academic Years

College Committees

- Associate Dean of Research, Search Committee 2019-2020
- Mining and Geological Engineering, Dept. Head, Search Committee, 20-19-2020
- ECE Department Head Five Year Review Committee, 2018
- AME Department Head Search Committee 2017-2018
- Special Faculty Status Committee for Systems and Industry Engineering Dept. 2017
- College of Engineering, Outstanding Senior Selection Committee 2013 and 2014
- College of Engineering, Faculty Status Committee, 2012-2013
- College of Engineering, Dean's Strategic Planning Committee, 2010-2011
- College of Engineering, Faculty Advisory Council, 2010-present
- College of Engineering, Academic Grade Appeal Committee, Fall 2006

University Committees

- Associate Deans for Research Committee, 2020
- University Conflict of Interest Committee, 2019-present
- Goldwater Nominee Selection Committee, Honors College, Fall 2008
- University Fees Committee Fall 2004-Spring 2007

PUBLICATIONS

http://orcid.org/0000-0002-9806-8841
Scopus Author ID: 6506065488
Scopus Author ID: 35613629300

Chapters in scholarly books and monographs:

[1] Sungjong You and Kathleen L. Melde, Flexible VHF animal collar antenna for GPS-aided wildlife tracking,"*Advancement in Wearable and Flexible Antennas*, WIT Press, Haider Khaleel, Editor, 24 Pages, June 2014

[2] K. L. Virga and Y. Rahmat-Samii, "Generation of wideband antenna performance by [Z] and [Y] matrix interpolation in the method of moments," in *Ultra-Wideband Short-Pulse Electromagnetics III,* Editors C.E. Baum, L. Carin and A.P. Stone, Plenum Publishing, pp. 185-196, 1997.

Refereed Journal Articles:

[J1] Prabhat Baniya and Kathleen L. Melde, "Switched beam SIW horn arrays at 60 GHz for 360° reconfigurable chip-to-chip communications with interference considerations," *IEEE Access*, vol. 9, pp. 100460-100471, Jul. 2021.

[J2] Byul Hur, William R. Eisenstadt, and Kathleen L. Melde. "Testing and Validation of Adaptive Impedance Matching System for Broadband Antenna," *Electronics 8*, no. 9 (2019): 1055.

[J3] Prabhat Baniya, Aimeric Bisognin, Kathleen L. Melde, and Cyril Luxey. "Chip-to-Chip Switched Beam 60 GHz Circular Patch Planar Antenna Array and Pattern Considerations." *IEEE Transactions on Antennas and Propagation* Vol. 66, No. 4, pp. 1776-1787, April 2018.

[J4] Prabhat Baniya, Sungjong Yoo, Kathleen L. Melde, Aimeric Bisognin, and Cyril Luxey. "Switched-Beam 60-GHz Four-Element Array for Multichip Multicore System." *IEEE Transactions on Components, Packaging and Manufacturing Technology* Vol. 8, No. 2 pp. 251-260, April 2018.

[J5] Baniya, Prabhat, and Kathleen L. Melde. "Switched-beam endfire planar array with integrated 2-D Butler matrix for 60 GHz chip-to-chip space-surface wave communications." *IEEE Antennas and Wireless Propagation Letters* 18, no. 2 (2018): 236-240, February 2018.

[J6] Arghya Sain and Kathleen L. Melde. "Impact of Ground via Placement in Grounded Coplanar Waveguide Interconnects." *IEEE Transactions on Components, Packaging and Manufacturing Technology* Vol. 6, No. 1, pp.136-144, Jan. 2016.

[J7] J. Bernhard, E. Bonek, C. Christoldoulou, D. Kunkee, K. L. Melde, "Guest Editorial for the Special Section on Antenna Systems and Propagation for Cognitive Radio," *IEEE Transactions on Antennas and Propagation* Vol. 62, No. 3, pp. 1015-1018, March 2014.

[J8] (Invited Paper) Ho-Hsin Yeh and Kathleen L. Melde, "Development of 60 GHz RF Interconnects for Parallelized Multi-Processor Computing," *IEEE Transactions on Advanced Packaging, Special Issue on RF-ICs and Interconnects*, Vol. 3, No. 11, pp. 1946–1952, November 2013.

[J9] A. Sain and K. L. Melde, "Broadband Characterization of Coplanar Waveguide Interconnects with Rough Conductor Surfaces using Full Wave Simulation" *IEEE Transactions on Advanced Packaging*, Vol. 3, No. 6 pp. 1038-1046, June 2013.

[J10]Christin Lundgren, Rene Lopez, Joan Redwing, and Kathleen Melde, "FDTD modeling of solar energy absorption in silicon branched nanowires," *Optics Express*, Vol. 21, Issue S3, pp. A392-A400 (2013)

[J11] Ho-Hsin Yeh, Nobuki Hiramatsu and Kathleen L. Melde, "The Design of Broadband 60 GHz AMC Antenna in Multi-Chip RF Data Transmission," *IEEE Trans. on Antennas and Propagation*, Vol. 61, No. 4, pp. April 2013.

[J12] Sung Jong Yoo and Kathleen L. Melde, "VHF Collar Integrated Antenna for Ground Link of GPS Based Location System," *IEEE Transactions Antennas and Propagation,* Vol. 61, No. 1, pp. 26-32, Jan. 2013.

[J13] Kathleen L. Melde, Hyun-Jin Park, Ho-Hsin Yeh, Beatrice Fankem, Zhen Zhou, and William R. Eisenstadt, "Software defined match control circuit integrated with a planar inverted F antenna," *IEEE Transactions Antennas and Propagation,* Vol. 58, No. 12, pp. 3884-3890, Dec. 2010.

[J14] (Invited Paper) Alina Deutsch, Roger Krabbenhoft, Kathleen L. Melde, Christopher V. Surovic, George A. Katopis, Gerard V. Kopcsay, Zhen Zhou, Young Kwark, Thomas-Michael Winkel, Xiaoxiong Gu, and Theodorus Standaert, "Overview of the application of the short-pulse-propagation techniques for broadband interconnect characterization," *Special issue of IEEE Transactions on Electromagnetic Compatability,* Special Issue on PCB Level Signal Integrity, Power Integrity and EMC, Vol., 52, No. 2, pp. 266-287, May 2010.

[J15] Zhen Zhou and Kathleen L. Melde, "A comprehensive technique to determine the broadband physically-consistent material characteristics of microstrip lines," *IEEE Transactions on Microwave Theory and Techniques*, Vol. 58, No. 1, pp. 185-194 January 2010.

[J16] Qian Li and Kathleen L. Melde, "The impact of on-wafer calibration method on the measured results of coplanar waveguide circuits," *IEEE Transactions on Advanced Packaging,* Vol. 33, No. 1, pp. 285-292, January 2010.

[J17] Natalia Gaviria, Jeffrey J. Rodriguez, Kathleen Melde, and Kevin McNeill, "Design of low sidelobe linear arrays with high aperture efficiency and interference nulls" *IEEE Antennas amd Wireless Propagation Letters*, vol. 8, pp. 607-610, 2009

[J18] Beatrice Fankem and Kathleen L. Melde, "Nested PIFAs for dual mode of operation: GPS and global communications," *IEEE Antennas and Wireless Propag. Letters,* vol. 7, pp. 701-705, 2008.

[J19] Zhen Zhou and Kathleen L. Melde, "Development of a broadband coplanar waveguide-to-microstrip transition with vias," *IEEE Transactions on Advanced Packaging,* vol. 31 no. 4, pp. 861-872, November, 2008.

[J20] Peng Jin, Nathan A. Goodman, and Kathleen L. Melde, "Exploiting directional antennas for reduced-dimension space-time RAKE receiving," *IEEE Transactions on Vehicular Technology*, vol. 57, no. 6, pp. 3880-3885, November 2008.

[J21] Zhen Zhou and Kathleen L. Melde, "Frequency agility of broadband antennas integrated with a reconfigurable RF impedance tuner," *IEEE Antennas and Wireless Propagation Letters*, vol. 6, pp. 56-59, 2007.

[J22] N. Goodman and K. L. Melde, "The impact of antenna directivity on the small-scale fading in indoor environments," *IEEE Transactions Antennas and Propagation,* vol. 54, no. 12, pp. 3771-3777, December 2006.

[J23] L. Zhu and K. L. Melde, "On-wafer measurement of microstrip-based circuits with a vialess transition," *IEEE Transactions on Advanced Packaging*, vol. 29, no. 3, pp. 654-659, August 2006.

[J24] R. B. Whatley, Z. Zhou, and K. L. Melde, "Reconfigurable RF impedance tuner for match control in broadband wireless devices," *IEEE Transactions Antennas and Propagation,* vol. 54, no. 2, pp. 470-478, February 2006.

[J25] Guang Chen and K. L. Melde, "The application of EBG structures in power/ground plane pair SSN suppression," *IEEE Transactions on Advanced Packaging,* vol. 29, no. 1, pp. 21-30, February 2006.

[J26] S. Kyle Smith, Julio C. Brégains, Kathleen L. Melde, and Francisco Ares, "A comparison of optimization techniques for power patterns with low sidelobes generated by linear arrays with efficient excitation distributions," *Microwave and Optical Technology Letters*, vol. 45, no. 1, pp. 57-60, 2005.

[J27] K. L. Melde and M. L. Taylor, "Pattern characteristics of linear arrays using the constrained least squares distribution," *IEEE Transactions Antennas and Propagation,* vol. 51, no. 4, pp. 772-775, April 2003.

[J28] M.C. Greenberg, K. L. Virga, and C. L. Hammond, "Performance of the dual exponential tapered slot antenna (DETSA) for wireless communications applications," *IEEE Transactions on Vehicular Technology*, vol. 52, no. 2, pp. 305-312, March 2003.

[J29] T. E. Moran, K. L. Virga, G. Aguirre, and J. L Prince, "Methods to reduce radiation form split ground planes in RF and mixed signal packaging structures," *IEEE Transactions on Advanced Packaging*, vol. 25, no. 3, pp. 409-416, August, 2002.

[J30] Guang Chen, Andrej Jancura, Kathleen L. Virga, Gert Winkler, and John L. Prince, "Accurate frequency domain modeling of LTCC solid-gridded plane structures," *Microwave and Optical Technology Letters*, vol. 36, no. 5, pp. 367-371, 2003.

[J31] D. Beauvarlet and K. L. Virga, "Measured characteristics of 30-GHz indoor propagation channels with low-profile directional antennas," *IEEE Antennas and Wireless Propagation Letters*, vol. 1, pp. 87-90, 2002.

[J32] K. L. Virga and M. L. Taylor, "Transmit patterns for linear active arrays with peak amplitude and radiated effective voltage constraints," *IEEE Transactions Antennas and Propagation,* vol. 49, no. 5, pp. 732-739, May 2001.

[J33] M. Elzinga, K. L. Virga, and J. L. Prince, "Improved global rational approximation macromodeling algorithm for networks characterized by frequency-sampled data," *IEEE Transactions on Microwave Theory and Techniques,* vol. 48, no. 9, pp. 1461-1468, September 2000.

[J34] M. Elzinga, K. L. Virga, L. Zhao, and J. L. Prince, "Pole-residue formulation for transient simulation of high-frequency interconnects using householder-LS curve-fitting techniques," *IEEE Transactions on Components, Packaging, and Manufacturing Technology, Part B: Advanced Packaging*, vol. 23, no. 2, pp. 142-147, May 2000.

[J35] C. G. Green, J. M. Seligman, J. L. Prince, and K. L. Virga, "Electrical characterization of integrated circuit molding compound," *IEEE Transactions on Components, Packaging, and Manufacturing Tech., Part B: Advanced Packaging,* vol. 22, no. 3, pp. 337-342, August 1999.

[J36] K. L. Virga and Y. Rahmat-Samii, "Efficient wideband evaluation of mobile communications antennas using [Z] or [Y] matrix interpolation with the method of moments," *IEEE Transactions Antennas and Propagation,* vol. 47, no. 1, pp. 65-76, January 1999.

[J37] H. Yue, K. L. Virga, and J. L. Prince, "Dielectric constant and loss tangent measurement using a stripline fixture," *IEEE Transactions on Components, Packaging, and Manufacturing Technology, Part B: Advanced Packaging,* vol. 21, no. 4, pp. 441-446, November 1998.

[J38] K. L. Virga and Y. Rahmat-Samii, "Low-profile enhanced-bandwidth PIFA antennas for wireless communications packaging," *IEEE Transactions on Microwave Theory and Techniques,* vol. 45, no. 10, pp. 1879-1888, October 1997.

[J39] K. L. Virga and Y. Rahmat-Samii, "RCS characterization of a finite ground plane with perforated apertures: simulations and measurements," *IEEE Transactions Antennas and Propagation,* vol. 42, no. 11, pp. 1491-1501, November 1994.

[J40] K. L. Virga, A. F. Seaton, and L. R. Walker, "New waveguide switched patch phase shifter," *Applied Microwave and Wireless Magazine*, pp. 109-116, 1990. J. F. White Publications. Winchester, MA.

SCHOLARLY PRESENTATIONS

Symposia/Conferences

[1] Prabhat Baniya and Kathleen L. Melde, "Switched beam SIW horn arrays at 60 GHz for 360° chip-to-chip communications," *2021 IEEE Radio and Wireless Symposium (RWS),* San Diego, CA, USA, Jan. 2021, pp. 39-42.

[2] Prabhat Baniya and Kathleen L. Melde, "360° switched beam SIW horn arrays at 60 GHz, phase centers, and Friis equation," *2021 United States National Committee for the International Union of Radio Science (USNC-URSI) National Radio Science Meeting,* Boulder, CO, USA, Jan. 2021, pp. 113-114.

[3] Baniya, Prabhat, and Kathleen L. Melde. "PCB bowing effects on 60 GHz switched-beam antenna modules." In *2019 IEEE International Symposium on Antennas and Propagation and USNC-URSI Radio Science Meeting,* pp. 687-688. IEEE, 2019.

[4] Prabhat Baniya and Kathleen L. Melde, 'Standing Wave Considerations in the Link Model of 60 GHz Directional Surface Wave Arrays," *2018 IEEE International Symposium on Antennas and Propagation*, Boston, MA, 2018

[5] Erica Messinger, Kathleen L. Melde, Jonathan Chisum, Julio Urbina, Jing Wang, and Stephen E. Ralph. "Different strategies for preparing students to tackle the RF engineering challenges of tomorrow: A panel discussion." In *ASEE Annual Conference and Exposition, Conference Proceedings*, vol. 2018. 2018.

[6] Prabhat Baniya and Kathleen L. Melde, "Link Characteristics of Directional Surface Wave Antenna Arrays," *IEEE 12th European Conference on Antennas and Propagation (EuCAP)*, London, UK, April 2018.

[7] P. Baniya and Kathleen L. Melde, "Investigation of Lateral Space Wave and Surface Wave on the Link Budget of Chip-to-Chip Switched Beam 60 GHz Array," *2017 USNC-URSI National Radio Science Meeting*, Boulder CO, Jan. 2017.

[8] Kevin Garrick, Xavi Giroud, Nico Fajardo, Andrew Maggio, Cecilia Read, Brian Kehn, Kathleen Melde, and Michael Marcelling, "Wearable Heart Rate and Fall Detection Notification System," *Proceedings of the International Telemetry Conference*, Phoenix, AZ, October, 2016, 7 pages.

[9] Prabhat Baniya, Aimeric Bisognin, Kathleen L. Melde, and Cyril Luxey, "Chip-to-chip switched-beam 60-GHz array integrated with modified Butler feed matrix network," *2016 IEEE International Symposium on Antennas and Propagation and USNC-URSI National Radio Science Meeting,* Fajardo, PR, Jun/Jul 2016.

[10]Prabhat Baniya, Aimeric Bisognin, Kathleen L. Melde, and Cyril Luxey. "Impact of gain and polarization in the design of reconfigurable chip-to-chip antennas." In *Antennas and Propagation (EuCAP), 2016 10th European Conference on*, pp. 1-4. IEEE, 2016.

[11] Andrea Vilarasau, James Ringle, Asif Shahidullah, Michaelina Sorrell-Strong, Luke Zurmehly, Michael Marcellin, and Kathleen Melde, "A Low Cost Open-Air Tracking System Based on an Empirical Path-Loss Model," *Proceedings of the International Telemetry Conference*, Las Vegas, NV, October, 2015, 7 pages.

[12] Arghya Sain, Ian P. Armstrong, Marcos A. Vargas, and Kathleen L. Melde. "Introducing embedded patterned layers for improved broadband performance of high density transmission line routing." In *Radio Science Meeting (Joint with AP-S Symposium), 2015 USNC-URSI*, pp. 229, IEEE, 2015.

[13] He Zhou, Sungjong Yoo, Janet Roveda, Kathleen Melde, " HyNoc: An All-Direction Millemeter-Wave Wireless and Wired Reconfigurable Communication Fabric Design for Network on a Chip," *Proceedings of the Design Automation Conference* 85.29, San Francisco, CA, June 2015

[14] Kathleen L. Melde, Sungjong Yoo, and Ho-Hsin Yeh. "On-chip antenna arrays for multi-chip RF data transmission." In *Antennas and Propagation (EuCAP), 2015 9th European Conference on*, pp. 1-4. IEEE, 2015.

[15] M. A. Vargas and K. L. Melde, "Impact of geometry of embedded pattern layer on signal integrity of coupled microstrips," *IEEE 23rd Conference on Electrical Performance of Electronic Packaging and Systems (EPEPS)*, pp. 121-124, October 2014.

[16] B. Noriega, A. Kundu, Connor O'Brien, Corey Speros, Dawei Ju, Michael Marcellin, and Kathleen Melde, "Time Difference of Arrival for Small Animal Tracking System," *Proceedings of the International Telemetry Conference*, San Diego, NV 2014, 7 pages.

[17] Sungjong Yoo, Kathleen L. Melde, "Reconfigurable on-chip antenna arrays for multi-chip RF data transmission," *Proceedings of 2014 USNC-URSI Radio Science Meeting (Joint with AP-S Symposium), USNC-URSI* , June 2014.

[18] Ina Kundu; Sean Rice; Kevin Klug; Hao Chen; Elizabeth Marquez; Yizhou Zhong; Michael Marcellin; Kathleen Melde "Collar Integrated Small GPS Tracker," *Proceedings of the International Telemetry Conference*, Las Vegas, NV 2013, 7 pages.

[19] S. Yoo and K. L. Melde, "Light Trapping Characterization of Branched Nanowire Structures for Photovoltaics," *Optics for Solar Energy in Renewable Energy and the Environment Conference, from Optical Society of America*, Nov. 2013

[20] M. Vargas and K. L. Melde, " Insertion loss characterization of tightly spaced interconnects with an embedded patterned layer,"*22nd Conference on Electrical Performance of Electronic Packaging and Systems (EPEPS)*, pp. 21-24, San Jose, CA October 2013.

[21] S. Yoo, C. Lundgren, and K. L. Melde, "Computational Design of Photovoltaics with Silicon Nanowire," *2013 URSI North America Radio Science Meeting*, Orlando FL, July, 2013.

[22] Priyank Gupta, Ali Akoglu, Kathleen Melde, Janet Roveda, "FPGA based single cycle, reconfigurable router for NoC applications," 2013 IEEE International Symposium on Circuits and Systems (ISCAS), May 2013, 2428 – 2431

[23] H-H. Yeh, K. L. Melde, and W. R. Eisenstadt, "Design and Packaging of Small 60 GHz Antenna Array for Multi-Chip Communication," *IEEE International Conference on Wireless Information Technology Systems,* November 2012, Page 1-4, 2012.

[24] Jared R. Fowler, Jon M. Austin, Kathy T. Estrada, Martin Velazquez, Robyn Mohr, Ruben Sanchez, Kathleen Melde, Michael Marcellin, "Small wearable antenna for animal tracking," *Proceedings of the International Telemetering Conference*. 2012;48.

[25] A. Sain and K. L. Melde, "Characterizing the Impact of Conductor Surface Roughness on CB-CPW Behavior via Reduced Computational Complexity," *IEEE 21th Conference on Electrical Performance of Electronic Packaging and Systems (EPEPS),* pp. 260-263, October, 2012,

[26] H.-S. Yeh, and K. L. Melde, "60 GHz Multi-Antenna Design in Multi-Core System," *2012 IEEE Symposium on Antennas and Propagation* Chicago, Il, July 2012, pages 1-2 DOI, 10.1109/APS.2012.6348520

[27] A. Sain, and K. L. Melde, "Surface Roughness Modeling for CB-CPWs," *2012 IEEE Symposium on Antennas and Propagation* Chicago, Il, July 2012, pages 1-2. DOI, 10.1109/APS.2012.6348793

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[30] Q. Li, K. L. Melde, Gong-Jong Yeh, Hui Wu, Yaochao Yang, "3D Via Modeling Simplification on Multilayer Mid-planes," *IEEE 20th Conference on Electrical Performance of Electronic Packaging and Systems (EPEPS),* 2011, pp. 207-210.

[31] William R. Eisenstadt, Jaeseok Kim, Byul Hur, Hyun-Jin Park and Kathleen Melde, "Software Control Methods for Antenna Matching Circuits for Dynamic Spectrum Allocation," *Proc. 2011 International Symposium on Antennas and Propagation and USNC-URSI/National Radio Science Meeting,* Spokane WA, July 2011

[32] N. Hiramatsu and K. L. Melde, "Folded Monopole Antenna over an Artificial Magnetic Conductor for Chip-to-Chip Communications," *Proc. 2011 International Symposium on Antennas and Propagation and USNC-URSI/National Radio Science Meeting,* Spokane WA, July 2011

[33] L. F. Wells and K. L. Melde,"Physically-consistent broadband material models for transmission lines on FR-4," *IEEE 19th Conference on Electrical Performance of Electronic Packaging and Systems (EPEPS),* 2010, pp. 145 - 148

[34] Z. Zhou and K. L. Melde, "The impact of Debye relaxation spectrum on the propagation characteristics of electromagnetic waves in low loss printed circuit materials," *Proc. 2010 International Symposium on Antennas and Propagation and USNC-URSI/National Radio Science Meeting,* Toronto, CA, 1 page, July 2010.

[35] **Invited Paper**: H. J. Park, K. L. Melde and W. R. Eisenstadt, "Design of compact adaptive RF matching circuits using Square split ring resonators," *Proc. 2010 International Symposium on Antennas and Propagation and USNC-URSI/National Radio Science Meeting,* Toronto, CA, 4 pages, July 2010.

[36] **Invited Tutorial** K. L. Melde and T. Burcham, "Challenges in high frequency measurement and simulation comparisons," *IEEE 18th Conference on Electrical Performance of Electronic Packaging and Systems,* 2009, Portland OR.

[37] L. Wells, A. Deutsch, Z. Zhou, and K. L. Melde, "The effects of time windowing on the accuracy of the short-pulse propagation technique," *18th Topical Meeting on the Electrical Performance of Electronic Packaging and Systems*, Portland, OR, pp. 57-60, Oct. 2009.

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[39] Z. Zhou and K. Melde, "A simple method of generating causal broadband RLCG Models for CPW transmission lines with surface roughness," in *Proc. 17h Topical Meeting on Electrical Performance of Electronic Packaging,* San Jose, CA, pp. 227-230, October 2008.

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[41] B. Fankem and K. Melde, "Nested planar inverted F antennas for GPS and global communications," presented at the *Proc. 2008 International Symposium on Antennas and Propagation and USNC-URSI/National Radio Science Meeting,* San Diego, CA, 1 page, July 2008.

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[45] Qian Li and Kathleen. L. Melde, "Broadband on-wafer calibrations comparison for accuracy and repeatability on co-planar waveguide structures," in *Proc. 16h Topical Meeting on Electrical Performance of Electronic Packaging,* Atlanta, GA, pp. 315-315,October 2007.

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[64] K. L. Virga, C. Hammond, D. Beauvarlet, and W. E. Ryan, “Indoor Propagation Measurements Using Low Profile and Directional Dual Exponentially Tapered Slot Antennas, ” *IEEE 5th International Symposium on Wireless Personal Multimedia Communications*, pp. 193-197, October 2002.

[65] **Invited Paper**, C. Hammond, R. Ciano, and K. L. Virga, “Modeling and Surface Current Visualization of Dual Exponentially Tapered Slot Antennas with Dielectrics,” *2002 USNC-URSI Meeting Digest,* page 179, June 2002. Session on Integration of Antennas for RF/Wireless.

[66] D. Beauvarlet and K. L. Virga, “Indoor Propagation Characteristics for Wireless Communications in the 30GHz Range,” *2002 IEEE International Symposium on Antennas and Propagation Digest*, pp. 244-248, June 2002.

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[71] K. L. Virga and H. Zhang, “Spatial Beamformer Weighting Sets for Circular Array STAP,” *IEEE International Conference on Phased Array Systems and Technology*, pp. 561-564, May 2000.

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[74] T. Moran, K. L. Virga, G. Aquirre, and J. L. Prince, "Methods to Reduce Radiation from Split Ground Plane Structures, " *IEEE 8th Topical Meeting on Electrical Performance of Electronic Packaging Digest*, pp. 203-206, October 1999.

[75] M. Elzinga, K. L. Virga, and J. L. Prince, "Improved Global Rational Approximation Macromodeling Algorithm for Transient Simulation of Interconnects" *IEEE 8th Topical Meeting on Electrical Performance of Electronic Packaging Digest*, pp. 85-88, October 1999.

[76] **Invited Paper**: T. E. Moran, K. L. Virga, G. Aguirre, and J. L. Prince, "Investigation of Radiation from Split Ground Plane Structures Utilizing S-Parameters and The Finite-Difference Time-Domain Methods, " presented at *IMAPS Next Generation IC Package and Design Automation Workshop,* July 1999.

[77] M. C. Greenberg and K. L. Virga, "Characterization and Design Methodology for the Dual Exponentially Tapered Slot Antenna" *1999 IEEE International Symposium on Antennas and Propagation Digest,* pp. 88-91, July 1999.

[78] **Invited Paper:** M. L. Taylor, K. L. Virga, and R. G. Yaccarino, "Comparison of Antenna Transmit Weighting Functions for Active Arrays," *1999 IEEE International Symposium on Antennas and Propagation Digest,* pp. 2302-2305, July 1999, Invited for Special Session in Honor of T. T. Taylor.

[79] **Invited Paper**, K. L. Virga, "Pattern Synthesis of Arc Antenna Arrays with Directional Elements," *1999 USNC-URSI Meeting Digest* page 348, July 1999. Invited for Special Session on Conformal Antennas.

[80] M. Elzinga, K. L. Virga, L. Zhao and J. L. Prince, "Pole-Residue Formulation for Transient Simulation of High-Speed Interconnects using Householder-LS Curve-fitting Techniques," *1999 Electronics Components and Technology Proceedings Digest,* pp. 500-505, May 1999.

[81] S. L. Dvorak, K. Virga, R. W. Ziolkowski, and D. G. Dudley, "Use of Microwave Laboratory Demonstrations at the University of Arizona," *1999 USNC/URSI National Radio Science Meeting*, page 120, January 1999.

[82] C. Green, J. M. Seligman, J. L. Prince, and K. L. Virga, "Characterization of Frequency Dependent Dielectric Packaging Media Using Differential and Multiple-Reflection Techniques on a Precision Stripline Test Structure," *IEEE 7th Topical Meeting on Electrical Performance of Electronic Packaging Digest*, West Point, New York, pp. 69-72, October 1998.

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[84] C. W. Brann and K. L. Virga, "Generation of Optimal Distribution Sets for Single-Ring Cylindrical Arc Arrays", *1998 IEEE International Symposium on Antennas and Propagation Digest,* pp. 732-735, June 1998.

[85] H. Yue, K. L. Virga, and J. L. Prince, "Dielectric Constant and Loss Tangent Measurement Using a Stripline Test Fixture," *1998 Electronics Components and Technology Proceedings Digest*, pp. 1077-1082, May 1998.

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[88] K. L. Virga and Y. Rahmat-Samii, "Comparison of [Z] Matrix Interpolation and [Y] Matrix Interpolation in the Method of Moments*," 1996 USNC-URSI Radio Science Meeting Digest*, page 346, July 1996.

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[91] K. L. Virga and Y. Rahmat-Samii, "An Enhanced Bandwidth Integrated Dual L Antenna for Mobile Communications Systems -- Design and Measurement*," 1995 IEEE Antennas and Propagation Society International Symposium Digest*, pp. 1120-1123, June 1995.

[92] Y. Rahmat-Samii, K. Virga, R. Hodges, M. Jensen, "Planar Inverted F Antenna (PIFA) Characterization and Performance Visualization*," 1995 USNC-URSI National Radio Science Meeting Digest*, one page, January 1995.

[93] K. L. Virga and L. R. Walker, "Efficient Antenna Mode Scattering Analysis Using Design of Experiments," *1994 HAVE Forum Digest*, United States Air Force, Colo. Springs, CO, Oct. 1994.

[94] K. L. Virga and Y. Rahmat-Samii, "Surface Currents on Conducting Plates with Multiple Apertures," *1994 IEEE Antennas and Propagation Society International Symposium Digest*, pp. 684-687, June 1994.

[92] K. L. Virga and Y. Rahmat-Samii, "Computation of Monostatic RCS and Surface Currents for a Flat Plate with Perforated Apertures," *1994 USNC-URSI National Radio Science Meeting Digest*, page 9, January 1994.

[95] K. L. Virga and Y. Rahmat-Samii, "RCS Characterization of Perforated Apertures in a Finite Ground Plane," *1993 IEEE Antennas and Propagation Society International Symposium Digest*, pp. 1416-1419, June 1993.

[96] K. L. Virga and R. E. Engelhardt, "Efficient Statistical Analysis of Microwave Circuit Performance Using the Design of Experiments," *1993 IEEE Microwave Theory and Techniques Society International Microwave Symposium Digest*, pp. 123-126, May 1993.

[97] K. L. Virga, A. F. Seaton, and L. R. Walker "A Waveguide Switched Susceptance (Diode Patch) Phase Shifter," *1989 IEEE Microwave Theory and Techniques Society International Microwave Symposium Digest*, pp.123-126, May 1989.

Invited Talks, Scholarly Presentations

Raytheon RF Symposium, May 2018
IEEE Phoenix Wave and Devices Section, May 2014
Military Antennas West, April 22, 2013
Raytheon RF Symposium, April 30, 2013

UNITED STATES PATENTS FILED AND ISSUED

[1] P. Baniya and K. L. Melde, “Switched-beam end-fire planar array and integrated feed network for 60-GHz chip-to-chip space-surface wave communications,” U.S. Patent Application 62 698 406, Jul. 16, 2018.

[2] UA11-136 Low Profile Antenna for Chip-to-Chip Communications, N. Hiramatsu and K. L. Melde, filed 6/1/2011

[3] Patent No. 8,067,007 K. L. Melde and R. B. Whatley, “Automatic RF Match Control Circuit for Broadband and Reconfigurable Wireless Devices,” issued November 29, 2011.

[4] Patent No. 5,461,196, “Low Temperature Co-fired Ceramic (LTCC) High-Density Interconnect Package with Circuitry in the Cavity Walls,” issued October 24, 1995.

[5] Patent No. 5,184,095, "Constant Impedance Transition Between Transmission Structures of Different Dimensions," issued February 2, 1993.

[6] Patent No. 5,170,140, "Diode Patch Phase Shifter Insertable into a Waveguide," issued December 8, 1992.

[7] Patent No. 5,150,088, "Stripline Shielding Techniques in Low Temperature Co-Fired Ceramics," issued September 22, 1992.

GRANTS AND CONTRACTS

Federal Grants Funded:

Title: “Pattern Adaptable Antenna Arrays for Networks on Chips for Massively Multicore Systems”
Sponsor: National Science Foundation (7/2017 - 6/2020)
Total Award Amount: $ 300,000 (% Responsibility=100%)

Title: “High Density Broadband Signal Interconnects with Embedded Patterned Substrate Layers”
Sponsor: National Science Foundation (10/2012 - 9/2015)
Total Award Amount: $ 292,077 (% Responsibility=100%)

Title: “RF Circuit Design Engineered Patterned Substrate Layers”
Sponsor: Army Research Office (05/1/12-1/31/13)
Total Award Amount: $49,700 (% Responsibility=100%)

Title: “Energy Aware Millimeter Wireless Data Communications in Multicore Systems”
Sponsor: National Science Foundation (09/2010 - 09/2013)
Total Award Amount: $297,406 (% Responsibility=100%)

Title: “Ultra Wideband Frequency Characterization of Materials for Flexible Microwave Circuits”
Sponsor: Army Research Office (06/2008-05/2009)
Total Award Amount: $220,243 (% Responsibility=100%)

Title: “Radio Frequency Characterization of Thin Materials for 3D Circuit Design Applications”
Sponsor: National Science Foundation (Connection One Supplement) (09/2009 - 09/2011)
Total Award Amount: $100,000 (% Responsibility=90%)

Title: "Adaptive Conformal Arrays for Next-Generation Wireless Communications"
Sponsor: National Science Foundation (05/2001 - 04/2005
Total Award Amount: $240,000 (% Responsibility =50%)

Title: "Development of Smart Antennas for Phased Arrays and Adaptive Wireless Networks"
Sponsor: Office of Naval Research, (04/2001 - 05/2002)
Total Award Amount: $88,836. (% Responsibility =100%)

Title: "Cooperative Research- Electromagnetic Interactions between Embedded Passive Components and Interconnects in Mixed-Signal Systems"
Sponsor: National Science Foundation (04/2000-04/2002)
Total Award Amount: $18,800. (% Responsibility= 50%)

Title: "Integrated Design of Next-Generation Broadband Mobile Networks: Antennas, Codes, and Performance Protocols:
Sponsor: National Science Foundation, Wireless Networking Program (10/1999-09/2002)
Total Award Amount: $450,000 (% Responsibility= 25%)

Title: "Optimal Beamformer Weights for a Circular Arc Array of Directional Elements"
Sponsor: Office of Naval Research (05/1999-12/1999)
Total Award Amount: $50,000 (% Responsibility =100%)

Title: "Characterization of High-Density Interconnect Structures for High Speed Digital and Wireless Communications Applications"
Sponsor: National Science Foundation (09/1997-09/1998)
Total Award Amount: $60,000 (% Responsibility= 100%)

Title: "Instrumentation for the Development of Integrated Multi-Function Antennas for Phased Array Applications"
Sponsor: Office of Naval Research (01/1997-01/1998)
Total Award Amount: $112,480 (% Responsibility= 100%)

State Grants Funded

Title: "Nanostructured Thin Films for Photovoltaic Energy Conversion"
Sponsor: Science Foundation Arizona (09/2009-05/2011)
Total Award Amount: $250,000 (%Responsibility=20%)

Title: "Novel Porous Si-based PhotoVoltaic Device"
Sponsor: Arizona Research Institute for Solar Energy (04/2008-05/2009)
Total Award Amount: $55,000 (% Responsibility =50%)

Title: "Development of Genetic Algorithm Optimizer for Conformal Array Antenna Design"
Sponsor: University of Arizona, Foundation (01/1997-12/1997)
Total Award Amount: $5,000 (% Responsibility= 100%)

Industry Grants Funded

Title: "Broadband Electrical Characterization of Next Generation Packaging Materials and Interconnects: Measurements and Modeling"
Sponsor: Semiconductor Research Corporation (02/2009-09/2011)
Total Award Amount: $273,000 ` (% Responsibility= 100%)

Title: "Automatic RF Impedance Correction Circuits for SoC RF/Mixed-Signal ATE Test"
Sponsor: Semiconductor Research Corporation (10/2007-09/2010)
Total Award Amount: $100,000 (% Responsibility= 100%)

Title: "Software-Defined and Cognitive Radio:
Sponsor: Connection One* (08/2005-07/2006)
Total Award Amount: $55,000 (% Responsibility= 100%)

Title: "Robust Broadband Material Characterization for Complex Packaging Materials to 50GHz"
Sponsor: Semiconductor Research Corporation (01/2005-12/2007)
Total Award Amount: $225,000 (% Responsibility= 100%)

Title: "Automatic RF Match Control Circuit for Reconfigurable Wireless Devices"
Sponsor: Connection One* (08/2004-07/2005)
Total Award Amount: $70,000 (% Responsibility= 100%)

Title: "Automatic RF Match Control Circuit for Broadband Wireless Devices"
Sponsor: Connection One* (08/2003-07/2003)
Total Award Amount: $58,429 (% Responsibility= 100%)

Title: "SRC-VLSI and Interconnection Research"
Sponsor: Semiconductor Research Corporation (08/2001-07/2004)
Total Award Amount: $1,155,435 (% Responsibility= 20%)

Title: "SRC-VLSI and Interconnection Research"
Sponsor: Semiconductor Research Corporation (08/1998-07/2001)
Total Award Amount: $1,148,340 (% Responsibility= 20%)

Title: "SRC-VLSI Packaging and Interconnection Research"
Sponsor: Semiconductor Research Corporation (08/1997-07/1998)
Total Award Amount: $500,000 (% Responsibility= 10%)

Title: "SRC-VLSI Packaging and Interconnection Research"
Sponsor: Semiconductor Research Corporation (08/1996-07/1997)
Total Award Amount: $500,000 (% Responsibility= 8%)

* Connection One is an NSF funded Industry/University Collaborative Research Center:
Most of the funds come from industry. More information can be found at www.connectionone.org.

Private Foundation Grant Funded

Title: "Bio-Inspired Electro-Optic Structures for Silicon Photovoltaics"
Sponsor: Research Corporation for Scientific Advancement (01/2011-12/2013)
Total Award Amount: $33,334 (% Responsibility= 100%)

Major Financial Gifts

Semiconductor Research Corporation Total of $24,000 (between 2005-2008)
Sun Microsystems $25,000 6/1/2008
IBM Corporation $20,000 7/1/2008

TEACHING AND ADVISING

M. S. Theses Directed

1. Ian Armstrong, May 2015 "Miniaturization Technique Utilizing Graded EPL Structures for RF Circuits,"
2. Marcos Vargas, October 2014, "Passive Patterning Techniques for Broadband Signal Integrity of Tightly Spaced, Single-Ended Microstrips,"
3. Chase Rixie, May 2012, Topic: "Calibration Comparison of Differential Transmission Line Structures"
4. Sung Yoo, August 2011, Topic: "Wearable Antenna for Wildlife and Environmental Monitoring"
5. Hiramatsu Nobuki, May 2011, Topic: "Analysis and Design of Low-Profile Antennas over an Artificial Magnetic Conductor for Inter-Core Communications"
6. Hyun-Jin Park, August 2010, "Complementary Split Ring Resonators for Automatic Match Control Circuits"
7. Ms. Beatrice Fankem, August 2008, "Nested Planar Inverted F Antenna for GPS and Global Communications," employed at Texas Instruments in Dallas TX
8. Mr. Ho-Hsin Yeh, May 2008, "Low Loss Varactor-Based Reconfigurable Impedance Matching Network for Open-Loop Controlled Tuning Radio," continuing for Ph.D.
9. Ms. Amy Hillegonds, May 2006, "Guaranteed Passivity and Other Improvements to Pole-Residue Extraction Macromodeling"
10. Ms. Zhen Zhou, M.S., May 2006, "Modeling and Measurement on Automatic Match Control Network for Broadband Wireless Devices," continuing for Ph.D. under my supervision.
11. Mr. Richard Whatley, M.S., August 2004, "Automatic Reconfigurable RF Matching Circuit for Broadband Wireless Devices, " worked for Jet Propulsion Laboratory
12. Mr. Kyle Scott Smith, M.S., August 2004, "An Examination of the Constrained Least Squares Optimization Method for Active Antenna Arrays and Circular Apertures," employed at Jet Propulsion Laboratory
13. Mr, Aycan Erentok, M.S., December 2003, "The Optimization Methods for the Pattern Synthesis of Circular Arc Arrays Elements Using Directional Elements," continued for Ph.D. directed by R. W. Ziolkowski
14. Mr. Arvin Iskander, M. S. December 2003, "A Predetermined Initial State Eprom With Lockout To Prevent Multiple Programming In 0.5-μm CMOS," work at National Semiconductor, Tucson
15. Ms. Cynthia Hammond, M S., May 2003, "Surface Current Visualization of Dual Exponentially Tapered Slot Antenna"
16. Mr. Didier Beauvarlet, M. S., December 2001, "Measurements and Statistics of Indoor Propagation Characteristics for Wireless Networking Applications"
17. Mr. Tamir Moran, M S., December 1999, "Emitted Radiation and Signal Integrity in High Density Packaging Structures"
18. Mr. Marc C. Greenberg, M.S., May 1999, "Characterization of the Dual Exponentially Tapered Slot Antenna for Communications Applications"
19. Mr. Mark Taylor, M.S., May 1999, "Comparison of Antenna Transmit Distributions for Active Arrays Under Peak Amplitude and Effective Radiated Voltage Constraints"

20. Mr. Heping Yue, M.S., May 1999, "S-Parameter Based Dielectric Measurement with a Stripline or Microstrip Transmission Line," (co-advised with J. L. Prince)

Dissertations Directed

1. Mr. Prabhat Baniya, Ph.D. April 2019, "Switched-Beam 60 GHz Endfire Circular Patch Planar Array With Integrated 2-D Butler Matrix for Chip-to-Chip Space-Surface Wave Communications,"
2. Ms. Christin Lundgren, Ph.D. May 2018, "Computational Modeling of Silicon Nanostructures for Photovoltaic Applications"
3. Mr. Arghya Sain, Ph.D., August 2015, "A study on the effects of ground via fences, embedded patterned layer, and metal surface roughness on conductor backed coplanar waveguide"
4. Mr. Sungjong Yoo, Ph. D. August 2014, Title: ""Electromagnetic Modeling of Multi-Dimensional Scale Problems: Nanoscale Solar Materials, RF Electronics, Wearable Antennas,"
5. Mr. Ho-Hsin Yeh, Ph.D. January 2013, Topic Development of 60 GHz Antenna and Wireless Interconnect inside MultiChip Module for Parallelized Processor System"
6. Ms. Qian Li, Ph.D. December 2011. Topic: "Broadband Material Models for Flexible Co-Planar Transmission Lines, " employed at Qualcomm
7. Ms. Zhen Zhou, Ph.D., August 2009, "Comprehensive Physically-Consistent Material Models for Microstrip Transmission Lines," employed at Intel Research Laboratories.
8. Mr. Donald Bruyere, Ph. D. May 2008, "Enhanced Detection of Ground Targets by Airborne Radar" (Co-Advisor with Dr. Nathan Goodman). Now employed at Raytheon Corporation
9. Mr. Guang Chen, Ph. D. December 2006, "Modeling and Characterization of Plane Pair Structures in Power Distribution Systems," employed at Altera Corporation.
10. Ms. Lin Zhu, Ph.D., December 2005, Dissertation Title: "Development of Modeling Simulation, and Measurement Methodologies for Signal Integrity Analysis of High-Speed Packaging Interconnects," employed at Cisco Systems.

Awards for Advisees

- Nobuki Hiramatsu, Honorable Mention for 2011 IEEE Antennas and Propagation Society Student Paper Contest
- Zhen Zhou, Ph.D. Student, Inaugural John L. Prince Doctoral Fellowship from the Semiconductor Research Corporation (SRC) for five years of graduate study, Fall 2006-graduation
- Beatrice Fankem, M.S. Student, 2007 IEEE Antennas and Propagation Society Graduate Scholarship
- Beatrice Fankem, M. S. 2007 Student International Scholarship from the AAUW (American Association of University Women): 100 awards were made out of over 1000 applicants
- Brenda Holmes, M.E. Student, 2004 SRC Master's Fellowship.
- Dr. Michael Marcellin (advisor), UA, Robyn Mohr, Martin Vetazquez, Kathy Estrada, and Jon Austin receive Second Place Undergraduate Student Paper Award from Cliff Aggen, Student Paper Chair.: Jared Fowler, Ruben Sanchez and advisor Kathleen Melde. Include awards for both sets of Senior Project Students, University of Arizona, Paper: "Small Wearable Antenna for Animal Tracking"

Recent Outreach Multimedia Sources

- Kathleen Melde: ECE Faculty Profile, Discussion of On Chip Antenna Arrays, May 2020

  https://www.youtube.com/watch?v=k3VfuR1-Dh8

- Dear Students & Parents – UA Engineering

  https://www.youtube.com/watch?v=ggTLCn-tiBo&feature=youtu.be&fbclid=IwAR27eYLoIAPXnaeNlnuc21Bp5Mpn7pwPr7CStVvjxC4cM4bHmb7LPt97PDE