Edl Schamiloglu

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Personal

Born in 1959, The Bronx, New York, USA

Education

Ph.D. Engineering (Minor Mathematics), Cornell University 1988

M.S. Plasma Physics Columbia University, 1981

B.S. Applied Physics and Nuclear Engineering, Columbia University, 1979

Organization of *Curriculum Vitae*

Synopsis

Edl Schamiloglu was born in The Bronx, NY in 1959. He received the B.S. degree in Applied Physics and Nuclear Engineering from Columbia University, NY, in 1979; he received the M.S. degree in Plasma Physics from Columbia University in 1981. He received the Ph.D. degree in Engineering (minor in mathematics) from Cornell University, Ithaca, NY, in 1988 (dissertation advisor David A Hammer, J.C. Ward Jr. Professor of Nuclear Energy Engineering). He joined the University of New Mexico (UNM) as Assistant Professor in 1988 and he is currently Gardner-Zemke Professor of Electrical and Computer Engineering and directs the Pulsed Power, Beams, and Microwaves Laboratory. He also holds an appointment in the Department of Electrical and Computer Engineering, National University of Singapore. He lectured at the U.S. Particle Accelerator School, at Harvard University in 1990, and at MIT in 1997. He coedited Advances in High Power Microwave Sources and Technologies (Piscataway, NJ: IEEE, 2001) (with R.J. Barker) and he has coauthored High Power Microwaves, 2nd Ed. (Taylor & Francis, New York, NY, 2007) (with J. Benford and J. Swegle). He has coauthored over 95 refereed journal papers, 180 reviewed conference papers, and 5 patents. His publications have been cited over 2950 times. He has been PI on over $18 M of contracts and grants expenditured at UNM. Dr. Schamiloglu has received the Sandia National Laboratories Research Excellence Award as part of the Delphi/Minerva team in 1991, the UNM School of Engineering Research Excellence Award twice (junior faculty in 1992 and senior faculty in 2001), the titles of UNM Regents' Lecturer (1996) and Gardner-Zemke Professor (2000), and the Lawton-Ellis Award in 2004. He is a Fellow of the IEEE, an EMP Fellow (sponsored by the Summa Foundation), and an Associate Editor of JEMWA (J Electromagnetic Waves and Applications). He was the General Chair of the IEEE PPPS-2007 Conference in Albuquerque, NM in June 2007. He was selected as the Outstanding Engineering Educator by the IEEE Albuquerque Section in 2008. He is a recipient of a 2011, 2012, and a 2013 UNM.STC Creativity Award. He was selected as a University of New Mexico Academic Leadership Fellow for 2013-2015. He recently was awarded the 2013 IEEE Nuclear and Plasma Sciences Society's Richard F. Shea Distinguished Member Award.

Professor Schamiloglu has numerous collaborations ongoing all over the world (Singapore, India, Turkey, Russia, China, Brazil, Japan, Germany, Lithuania).

During his tenure at the University of New Mexico Professor Schamiloglu introduced 8 new courses into the ECE curriculum:

- ECE 553 (originally taught as ECE 559) - Experimental Plasma Physics
- ECE 461 - Antennas & Propagation
- ECE 561 - Engineering Electromagnetics (a one-semester graduate level course)
- ECE 557 - Pulsed Power and Charged Particle Acceleration
- ECE 558 - Charged Particle Beams and High Power Microwaves
- ECE 360 - Electromagnetic Fields & Waves (a one-semester junior level course)
- ECE 595 - Neurosystems Engineering
- ECE 555 - Foundations of Engineering Electromagnetics (a new prerequisite to 561, linear operator theory and other mathematical formalisms)

Summary Statistics

h-index: 25 Citations: 2966

Academic Experience

July 2000–present: Gardner-Zemke Professor, Electrical and Computer Engineering Department

July 2000–June 2001 Associate Chair and Director of the Graduate Program, Electrical and Computer Engineering Department, University of New Mexico

July 1994–June 2000: Associate Professor, Electrical and Computer Engineering Department, and the Optical Sciences Program, University of New Mexico

June 16-20, 1997: Lecturer, Course on Intense Pulsed Electron and Ion Beams, 1997 U.S. Particle Accelerator School, MIT

June 11-22, 1990: Lecturer, Course on Charged Particle Beams, 1990 U.S. Particle Accelerator School, Harvard University

January 1988–June 1994: Assistant Professor, Electrical and Computer Engineering Department, University of New Mexico

Consulting Experience

November 1997–present: Co-founder, AHS Engineering Services, LLC

November 2003–January 2004: Technical consultant, MGM Studios film production "The Outer Limits"

December 2003–January 2004: Technical consultant, Office of the CEO ATT Labs

July 2005–December 2008: Technical consultant, Northrop-Grumman Mission Systems

December 2007–April 2008: Technical Consultant, Klarquist Sparkman, LLP (expert witness on patent litigation - outcome was successful for Klarquist Sparkman)

July 2008–February 2009: Technical Consultant, IDC Defence Industry, Inc. (Ankara, Turkey)

August 2009–Present: Kuzey Savunma, Inc. (Ankara, Turkey)

August 2010–December 2010: Fiore Industries

August 2010–Present: DSO Singapore

Honorary and Professional Societies

American Physical Society

Fellow, Institute of Electrical and Electronics Engineers (IEEE)

Fellow, Summa Foundation

Cornell Society of Engineers

Areas of Teaching Experience

Undergraduate and graduate level electromagnetics, foundations of engineering electromagnetics, graduate level antennas and wave propagation, graduate level plasma diagnostic theory and experiment, physics of intense pulsed electron and ion beams, pulsed power and charged particle acceleration, beam-wave interaction in quasi-periodic structures, probabilistic methods, circuit analysis, neurosystems engineering, and engineering ethics.

Areas of Research Experience

Physics and technology of charged particle beam generation and propagation, high power microwave sources and effects, pulsed power science and technologies, plasma physics and diagnostics, applied electromagnetics, wave propagation, neurosystems engineering.

Awards and Honors

1991: Sandia National Laboratories Research Excellence Award (as member of the Delphi/Minerva team)

1992: UNM College of Engineering Research Excellence Award (Junior Faculty)

1996-1999: UNM Regents' Lecturer

2000-present: ECE Gardner-Zemke Professor

2001: UNM School of Engineering Research Excellence Award (Senior Faculty)

2002: Elected Fellow of the IEEE

2003: City of Albuquerque Goodwill Ambassador Award

2003: Certificate of Appreciation for Outstanding Service as a Member of the National Academies Committee on Assessment of Test Infrastructure Requirements to Support Testing of Defense Directed Energy Systems - From the Air Force Science and Technology Board and The Board on Army Science and Technology

2004: UNM ECE Lawton-Ellis Award

2004: Defense Threats Reduction Agency Certificate of Recognition for Contribution to DTRA's University Strategic Partnership

2006: Elected Fellow, Summa Foundation

2008: IEEE Albuquerque Section Outstanding Engineering Educator Award

2011: STC.UNM Creativity Award

2011: CST University Publication Award for "Radially Inhomogeneous Spherical Dielectric Lens for Matching 100-ps Pulses Into Biological Targets," IEEE Trans. Plasma Sci., vol. 38, 2010, pp. 1915-1927 (P. Kumar, S. Altunc, C.E. Baum, C.J. Buchenauer, C.G. Christodoulou, Edl Schamiloglu)

2012: STC.UNM Creativity Award

2013: STC.UNM Creativity Award

2013-2015: Selected as a University of New Mexico Academic Leadership Academy Fellow

2013: IEEE Nuclear and Plasma Sciences Society's 2012 Richard F. Shea Distinguished Member Award

Recent Professional Activities

Member and Chair of the High Power Microwave Subpanel, National Academy of Sciences Committee on Directed Energy Testing (2003-2004)

General Chair, IEEE Pulsed Power and Plasma Science 2007 (Albuquerque, NM, 2007); Co-Editor, Proceedings of the Pulsed Power and Plasma Science 2007 Conference

Chairman, IEEE Nuclear and Plasma Sciences Society technical committee on Pulsed Power Science and Technology (January 2008–December 2010)

Associate Editor, Journal of Electromagnetic Waves and Applications (September 2008–present)

Secretary, IEEE Nuclear and Plasma Sciences Society technical committee on Pulsed Power Science and Technology and Awards Committee Chair (January 2011–present)

Founding Senior Editor for Pulsed Power Science and Technology, IEEE Transactions on Plasma Science (January 2007–June 2012)

Member, U.S. National Committee (USNC) Technical Adisory Group (TAG) for the International Electrotechnical Commission (IEC) Subcommittee SC77C (immunity standards for high power transient phenomena) (2003–present); elected as SC77C TAG Deputy Technical Advisor (DTA) (2009-2010) and Technical Advisor (TA) (2011–present); Corresponding Member, IEEE-USA Critical Infrastructure Protection Committee.

Board Memberships

Board of Directors, K&A Wireless, LLC (1998–2012)

Directed Energy Professional Society Board of Scientific and Engineering Advisors (BSEA) (2000–2006)

President, Board of Directors, Pulsed Power Conferences, Inc. (a non-profit organization that supports the Pulsed Power Conference, as well as the dissemination of research and education material related to Pulsed Power Science and Technology) (2002–2012)

President and Chairman of the Board, SUMMA Foundation (2011-present)

Entrepreneurial Activities

Co-Founder AHS Engineering Service, LLC, Albuquerque, NM 1997–present (which spun-off Elisar Software Corporation with venture funding in 1999)

Founding member in K&A Wireless, LLC (1998-2012), which was acquired by SensorComm Technologies in 2012

Media and Press

(Articles hyperlinked at http://www.ece.unm.edu/faculty/edl)

Professor Schamiloglu interviewed by KRQE's Katie Kim (local CBS affiliate)

Professor Schamiloglu presents AFOSR 60th Anniversary Lecture August 18, 2012

Team led by Professor Schamiloglu awarded prestigious MURI and DURIP grants May 2012

History Channel's "That's Impossible" Series, August 4, 2009

Popular Science, August 2009

Article in Innovative Research, Fall 2008

Defense Tech Briefs article on the MiPRI program, February 1, 2007

Virginia-Pilot interview regarding Professor Laroussi's "Plasma Pen," October 15, 2005

Popular Science interview regarding the vehicle stopper, May 2005

Daily Lobo article describing IFIS Distinguished Lecture of Dr. Younger, January 24, 2005

AFOSR Research Highlights, Jan Feb Mar 2004

UNM Engineering, Spring 2004

Daily Lobo article describing Prof. Schamiloglu's HPM program

Albuquerque Journal, January 5, 2004

IEEE Spectrum, cover story, November 2003

Prof. Schamiloglu awarded a 2003 City of Albuquerque "Good Will Ambassador" Award

Washington Post interview, March 19, 2003

New York Times interview, February 20, 2003

Interview with KOB-TV, Albuquerque, NM, January 29, 2003

Article on Tatars published in the Santa Fe New Mexican, February 22, 2002

Daily Lobo article describing Prof. Schamiloglu's receiving a $5M MURI grant on compact pulsed power, April 17, 2001

Sponsored Research - Over $17M

1. 10/01/88–09/30/89: Office of Naval Research - $100,000 "Experiments on High-Current Electron Beam Acceleration and Transport in Betatrons" S. Humphries, Jr., PI and E. Schamiloglu, Co-PI
2. 05/01/89–09/30/90: Sandia National Laboratories - $45,000 "Study of Electron Beam Propagation in Plasma Channels" E. Schamiloglu, PI
3. 10/01/89–09/30/90: Office of Naval Research - $120,000 "Experiments on High-Current Electron Beam Acceleration and Transport in Betatrons" S. Humphries, Jr., PI and E. Schamiloglu, Co-PI
4. 08/01/89–10/31/90: Air Force Office of Scientific Research - $99,907 "'Backward-Wave Oscillator Investigations" E. Schamiloglu, PI and J. Gahl, Co-PI
5. 05/01/90–09/30/92: Sandia National Laboratories - $85,260 "Electron Beam Propagation in Laser-Ionized Plasma Channels" E. Schamiloglu, PI
6. 05/01/90–09/30/91: Sandia National Laboratories - $98,853 "Ion Source Investigations" E. Schamiloglu, PI
7. 11/01/90–12/31/91: Air Force Office of Scientific Research - $122,935 "Backward-Wave Oscillator Investigations" E. Schamiloglu, PI and J. Gahl, Co-PI

8. 11/01/91–10/31/92: Sandia National Laboratories - $50,000 "Planar EHD Ion Source Investigations" E. Schamiloglu, PI

9. 01/01/92–12/31/92: Air Force Office of Scientific Research - $200,018 "Repetitively-Pulsed Backward-Wave Oscillator Investigations" E. Schamiloglu, PI, J. Gahl and C. Fleddermann, Co-PI's

10. 11/01/92–12/31/92: Sandia National Laboratories - $3,738 "Planar EHD Ion Source Investigations" E. Schamiloglu, PI

11. 01/01/93–12/31/93: Air Force Office of Scientific Research - $217,647 "Repetitively-Pulsed Backward-Wave Oscillator Investigations" E. Schamiloglu, PI, J. Gahl, C. Fleddermann, and D. Shiffler, Co-PI's

12. 10/01/93–01/31/94: The William and Mary Greve Foundation, Inc. - $20,000 "Pulse Shortening Effects in Vacuum High Power Microwave Sources" E. Schamiloglu, PI

13. 10/01/93–06/30/94: National Research Council - $11,100 "CAST Grant for Albert Roitman" E. Schamiloglu, PI

14. 10/01/93–06/30/94: National Research Council - $11,100 "CAST Grant for Igor Pegel" E. Schamiloglu, PI

15. 02/01/94–01/31/95: Air Force Office of Scientific Research - $234,714 "High Efficiency Vacuum and Plasma-Filled Backward-Wave Oscillators: A Critical Evaluation" E. Schamiloglu, PI, J. Gahl, C. Fleddermann, and D. Shiffler, Co-PI's

16. 07/01/94–06/30/95: The William and Mary Greve Foundation, Inc. - $20,000 "Effect of Ectons on Vacuum Discharges and High Power Microwave Breakdown" E. Schamiloglu, PI

17. 10/01/94–09/31/97: USAF Phillips Laboratory - $499,955 "A Study of Advanced Semiconductor Switch Physics and Technology" E. Schamiloglu, PI and C.B. Fleddermann, Co-PI

18. 05/01/95–04/31/2000: AFOSR MURI - $1,539,909 "Tri-University, Multidisciplinary, High Energy, Microwave Device Consortium" E. Schamiloglu, PI, C.T. Abdallah and C.B. Fleddermann, Co-PI's

19. 06/01/96–05/31/99: Air Force Office of Scientific Research - $133,841 "A Study of the Radial Acceletron High Power Microwave Oscillator" E. Schamiloglu, PI

20. 09/15/96–09/14/97: Army Research Office - $150,000 "Photonic Crystal Flat Panel Radiators for Wideband High Power Antennas" E. Schamiloglu, PI and K. Malloy, Co-PI

21. 06/01/97–05/31/2000: Air Force Office of Scientific Research - $649,379 "Optimization of GaAs Photoconductive Switch Technology for Ultra Wideband Applications" E. Schamiloglu, PI and C.B. Fleddermann, Co-PI

22. 09/15/97–09/14/98: Army Research Office - $50,000 "Photonic Crystal Flat Panel Radiators for Wideband High Power Antennas" E. Schamiloglu, PI and K. Malloy, Co-PI

23. 02/17/98–04/30/98: Air Force Research Laboratory - Phillips Laboratory Site - $10,000 "Feasibility of a Stacked Blumlein for an Ultra-wideband Source of HPM Radiation" E. Schamiloglu, PI

24. 03/01/98–08/31/98: Maui High Performance Computing Center DARPA Grant - $41,840 "Troposcatter Radiowave Propagation Link" G. Heileman, PI and E. Schamiloglu, Co-PI

25. 09/01/98–09/30/98: Air Force Research LaboratoryÐPhillips Laboratory Site - $15,950 "Study of the Use of a Fast Framing Camera for Analyzing Uniformity of Electron Emission from High Current Density Cathodes" E. Schamiloglu, PI

26. 01/01/99–05/15/99: Maui High Performance Computing Center - $43,000 "Refinement of the AN/TRC-170 Model into a Stand-alone Siting and Performance Prediction Tool" G. Heileman, PI and E. Schamiloglu, Co-PI

27. 01/01/99–12/31/99: Air Force Office of Scientific Research - $27,500 "Support for Workshop and Publication Working Group on High Power Microwave Sources and Technologies" E. Schamiloglu, PI

28. 04/15/99–07/16/99: Sandia National Laboratories - $38,191 "Transmitting and Receiving Antennas for Ground Penetrating Radar" C. Christodoulou, PI and E. Schamiloglu, co-PI

29. 09/01/99–08/31/2000: NATO Science Programme - $6,022 "Hybrid Antenna-Amplifier: A Novel Concept for a Controllable High Power Microwave Source" E. Schamiloglu, PI

30. 06/01/2000–05/31/2003: Air Force Office of Scientific Research - $600,000 "New Approaches to High Power Microwave Computation and Experimentation" E. Schamiloglu, PI and C.T. Abdallah, Co-PI

31. 05/01/2000–09/30/2000: NASA/JPL - $3,000 "Stability Studies of a Rigid Sail Propelled Using High Power Microwave Radiation" E. Schamiloglu, PI

32. 10/01/2000–04/30/2001: NASA/JPL - $20,233 "Stability Studies of a Rigid Sail Propelled Using High Power Microwave Radiation" E. Schamiloglu, PI and C.T. Abdallah, Co-PI

33. 06/01/2001–05/31/2006: AFOSR MURI - $5,000,000 (2,200,000 expenditured at UNM) "Basic Research Leading to Compact, Portable Pulsed Power" E. Schamiloglu, PI, C.G. Christodoulou and J.S. Tyo, Co-PI's (includes subcontracts to Old Dominion University and University of Nevada - Reno)

34. 05/14/2001–05/31/2004: Sandia National Laboratories - $168,249 "Technical Support, Pulsed Power-Driven Electron Beams" E. Schamiloglu, PI

35. 01/18/2002–01/17/2004: NATO Science Programme - $3,979 "Plasma-Filled Dielectric Cerenkov Maser and Octave-Bandwidth Microwave Amplifier" E. Schamiloglu, PI

36. 02/01/2002–01/31/2004: Air Force Office of Scientific Research - $497,276 "Measurement of Secondary Electron Emission Yield" E. Schamiloglu, PI and M. Gilmore, Co-PI

37. 09/01/2002–02/28/2003: Los Alamos National Laboratory - $46,679 "Microwave Measurement of Explosively-driven Valve Velocity" E. Schamiloglu, PI

38. 05/01/2003–12/31/2003: Air Force Office of Scientific Research - $3,000 "Student Travel Support for ICOPS 2003" E. Schamiloglu, PI

39. 03/01/2004–08/31/2004: Air Force Office of Scientific Research - $3,000 "Student Travel Support for ICOPS 2004" E. Schamiloglu, PI

40. 03/01/2004–08/31/2004: Air Force Office of Scientific Research - $10,000 "Support for Liquid Breakdown Workshop" E. Schamiloglu, PI

41. 07/21/2004–12/31/2005: Defense Threats Reduction Agency - $475,000 "High Power Electromagnetic Threats" E. Schamiloglu, PI, C.G. Christodoulou and J.S. Tyo, Co-PI's

42. 01/06/2005–12/31/2008: Air Force Office of Scientific Research - $545,000 "Measurements of Secondary Electron Yield from Materials with Application to Depressed Collectors" E. Schamiloglu, PI and M. Gilmore, Co-PI

43. 03/01/2005–02/28/2006: Air Force Office of Scientific Research - $346,008 "MiPRI Collaboration on High Power Microwave and Vacuum Electronics Source Research" E. Schamiloglu, PI

44. 04/01/2005–03/31/2006: U.S. Army Space and Missile Command - $275,000 "Compact Pulsed Power Collaboration for Defense Applications" E. Schamiloglu, PI

45. 04/30/2006–03/31/2009: Office of Naval Research - $1,200,000 ($680,000 expenditured at UNM) "Directed Energy Microwaves for the Destruction of IED's" E. Schamiloglu, PI and C. G. Christodoulou and M. Gilmore, Co-PI's (includes subcontracts to the University of Michigan and SAIC - Albuquerque)

46. 01/01/2006–10/31/2009: Air Force Office of Scientific Research - $120,000 "Fundamental Electromagnetic Theory and Applications to Compact, High Power Microwave Source/Antenna" E. Schamiloglu, PI

47. 10/01/2007–09/30/2008: Sandia National Laboratories - $25,000 "Linear Transformer Driver (LTD) Technical Support" E. Schamiloglu, PI

48. 10/15/2007–10/14/2009: Ktech Corporation - $358,736 "DETEC Narrowband Test Source B" E. Schamiloglu, PI and John Gaudet, Co-PI

49. 12/01/2007–11/30/2010: Air Force Office of Scientific Research - $700,000 "Minimizing Surface Plasmas in High Power Microwave Sources" E. Schamiloglu, PI and M. Gilmore, Co-PI

50. 01/01/2008–12/31/2011: DSO National Laboratories, Singapore - $160,000 "Reltron Research" E. Schamiloglu, PI

51. 10/01/08–09/30/09: Sandia National Laboratories - $25,000 "Technical Support on Electron Beams for Radiography" E. Schamiloglu, PI

52. 12/01/2008–05/31/2009: Sienna Technologies, Inc. (Phase I AFOSR STTR) - $30,000 "Nonlinear Dielectric Nanocomposite for High Frequency Operation" E. Schamiloglu, PI

53. 12/16/2008–08/15/2009: Summa Foundation - $100,000 "Design and Construction and Testing of a Graded Index Lens" E. Schamiloglu, PI

54. 02/01/2009–07/31/2009: Collins Clark Technologies (Phase I AFOSR STTR) - $30,000 "Cathode Development for Magnetrons" E. Schamiloglu, PI

55. 02/01/2009–01/31/2010: SAIC - $40,457 "Development of Verification Tools and Tutorials for PIC Codes" E. Schamiloglu, PI

56. 08/01/2009–07/31/2012: ONR - $1,678,000 ($1,038,800 expenditured at UNM) "Basic Research in High Efficiency Directed Energy Microwaves" E. Schamiloglu, PI and C. Christodoulou, Co-PI

57. 10/01/2010-09/30/2011: Sandia National Laboratories - $15,000 "Technical Support on Electrons Beams for Radiography" E. Schamiloglu, PI

58. 05/31/2011–05/30/2014: AFOSR -$1,205,000 "Innovative Advances in High Power Microwave Sources: From Metamaterials to Buridan's Ass" E. Schamiloglu, PI

59. 08/01/2011–03/31/2013: TechFlow Scientific - $117,000 "High Power Microwave Performance Computing Software Applications Institute Optimization, Testing, and Engagement Simulation Development" E. Schamiloglu, PI

60. 08/15/2011–01/15/2012: TechFlow Scientific - Army - Phase I $30,000 "Low-Cost Chaos Radar" S. Jayaweera, PI, E. Schamiloglu, Co-PI

61. 10/01/2011–09/30/2013: Sandia National Laboratories - $17,472 "Technical Support on Electrons Beams for Radiography" E. Schamiloglu, PI
62. 06/01/2012–05/31/17: AFOSR MURI - $7.5 M ($1.975 M to UNM) "Innovative use of Metamaterials in Confining, Controlling, and Radiating Intense Microwave Pulses" E. Schamiloglu, PI, Christos Christodoulou and Mark Gilmore, Co-PI's
63. 07/15/2012–07/14/2013 Raytheon University Program - $100,000 "Metamaterial-like (Rodded) Cathodes for High-Power Relativistic Magnetrons" E. Schamiloglu, PI
64. 12/01/2012–11/30/2014: TechFlow Scientific - Army - Phase II $254,000 "Low-Cost Chaos Radar" S. Jayaweera, PI, E. Schamiloglu, Co-PI
65. 05/01/2013–04/30/2016: ONR - $694,965 "Basic Research in High Power Microwave Sources" E. Schamiloglu, PI

Equipment Grants - Over $1.8M

1. 1988: Sandia National Laboratories - $25,000 "Nereus 600 kV electron beam accelerator" E. Schamiloglu
2. 1988: Sandia National Laboratories - $3,000 "High power microwave components" E. Schamiloglu
3. 1990: Sandia National Laboratories - $73,760 "Vacuum pumps, pulsed power supplies, oscilloscopes for Ion Source Investigations" E. Schamiloglu
4. 1990: Sandia National Laboratories - $55,000 "Physics International Pulserad PI-110A accelerator" E. Schamiloglu
5. 1991: USAF Phillips Laboratory - $350,000 "Sinus-6 electron beam accelerator" E. Schamiloglu
6. 1993: Air Force Office of Scientific Research FY92–93 HBCU/MI IG - $154,519 "Support of AFOSR high power microwave research" E. Schamiloglu
7. 1995: National Research Council - $4,600 "Follow-on equipment grants to CAST program" E. Schamiloglu
8. 1996: Air Force Office of Scientific Research FY96 DOD DURIP Grant - $166,087 "A versatile high-power laser system for high spatial resolution nanosecond plasma diagnostics in electron beam-driven HPM sources" E. Schamiloglu
9. 1997: Air Force Office of Scientific Research FY97 DOD DURIP Grant - $150,095 "Upgrade of a long pulse, high power backward wave oscillator to ultraclean vacuum conditions" E. Schamiloglu
10. 1999: Air Force Office of Scientific Research FY99 DOD DURIP Grant - $211,346 "Refined measurement and signal analysis techniques in vacuum and plasma-filled high power microwave sources" E. Schamiloglu and F. Hegeler
11. 2002: Air Force Office of Scientific Research FY2002 DOD DURIP Grant - $166,645 "Off-the-shelf pulsers and fast transient measurement equipment for compact pulsed power systems" J.S. Tyo and E. Schamiloglu
12. 2008: Air Force Office of Scientific Research FY2008 DOD DURIP Grant - $150,208 "Imaging and optical spectroscopy instrumentation for investigating surface plasmas in high power microwave sources" C. Watts, M. Gilmore, and E. Schamiloglu
13. 2012: Air Force Office of Scientific Research FY2012 DOD DURIP Grant - $246,075 "High power magnetron testbed for metamaterial cathodes" E. Schamiloglu

14. 2013: Air Force Office of Scientific Research FY2013 DOD DURIP Grant - $115,000 ”Fast digital oscilloscope for beam/wave interaction studies with metamaterial slow wave structures” (sub award to MIT parent grant) E. Schamiloglu

Patents

1. T.H. Kirby, D. M. Siergiej, and E. Schamiloglu, "Apparatus using an x-ray Source for Radiation Therapy Port Verification," United States Letters Patent Number 6,134,295, October 17, 2000.
2. M.I. Fuks, E. Schamiloglu and STC.UNM, "Magnetron Having a Transparent Cathode and Related Methods of Generating High Power Microwaves," 07696696 Cl. 315-39.51, 13 April 2010.
3. E. Schamiloglu, M.I. Fuks, H. Bosman, and S. Prasad and STC.UNM "An Eggbeater Transparent Cathode for Magnetrons and Ubitrons and Related Methods of Generating High Power Microwaves," 07893621 B2, 22 February 2011.
4. M.I. Fuks and E. Schamiloglu and STC.UNM, "Magnetron Device with Mode Converter and Related Methods," 8018159 B2, 13 September 2011.
5. M.I. Fuks and E. Schamiloglu and STC.UNM, "Magnetron Having a Transparent Cathode and Related Methods of Generating High Power Microwaves," U.S. Patent 8,324,811, 12 December 2012.

Books and Book Chapters

1. C.W. Mendel, Jr. and E. Schamiloglu, chapter entitled "Plasma Diagnostics," Volume 13 of the *Encyclopedia of Physical Science and Technology*, 2^{nd} Ed., (Academic Press, San Diego, 1992), p. 21-31; revised chapter, *Encyclopedia of Physical Science and Technology*, 3^{rd} Ed., (Academic Press, San Diego, 2002), p. 391-400.
2. R.J. Barker and E. Schamiloglu, *High Power Microwave Sources and Technologies* (IEEE Press, Piscataway, NJ, 2001); also, Chinese Translation (Tsinghua University Press, Beijing, China, 2005).
3. J. Benford, J. Swegle, and E. Schamiloglu, *High-Power Microwaves*, 2^{nd} Ed. (Taylor and Francis, Boca Raton, FL, 2007); also, Chinese Translation (National Defense Industry Press, China, 2009).

Guest Editorships

1. E. Schamiloglu and R.W. Stinnett, "Vacuum Discharge Plasmas," IEEE Trans. Plasma Sci. vol. 19, 681-682 (1991).
2. E. Schamiloglu, K.R. Prestwich, W.L. Baker, and G. Cooperstein, "Special-Issue on Pulsed-Power Science and Technology," IEEE Trans. Plasma Sci. vol. 25, 107-109 (1997).
3. E. Schamiloglu and Y.Y. Lau, "The 7^{th} Special Issue on High-Power Microwave Generation," IEEE Trans. Plasma Sci. vol. 26, 232-234 (1998).
4. E. Schamiloglu and R.J. Barker, "Scanning the Special Issue on Pulsed Power: Technology & Applications," Proceedings of the IEEE vol. 92, 1011-1013 (2004).

Refereed Journal Publications

(* denotes graduate student, ** denotes postdoc/research faculty, citations in [ ])

1. S. Humphries, Jr., D.M. Siergiej,* and E. Schamiloglu, "Auto-triggered Crowbar Switch for a Compact 600 kV Pulser," Rev. Sci. Instrum. vol. 60, 3564-3565 (1989). [2]

2. S. Humphries, Jr. and E. Schamiloglu, "Steering Relativistic Electron Beams with Linear Wire Arrays," J. Appl. Phys. vol. 66, 4019-4024 (1989). [2]

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4. J.R. Smith, I.R. Shokair, K.W. Struve, E. Schamiloglu, P.W. Werner,* and R.J. Lipinski, "Transverse Oscillations of a Long-Pulse Electron Beam on a Laser-Formed Channel," IEEE Trans. Plasma Sci. vol. 19, 850-854 (1991). [11]

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Conference Papers

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130. P. Kumar, T. Svimonishvili,* C. Watts, L. Bowers, H. Bosman,** M. Gilmore, E. Schamiloglu, and J. Gaudet,** "Characterization of Materials (with Low Secondary Electron Emission Yield) for use in High-Power Microwave Devices," Bull. Am. Phys. Soc. vol. DPP05, QP1 104 (2005).

131. H.L. Bosman,** S. Prasad,* M.I. Fuks,** E. Schamiloglu, R.M. Gilgenbach, Y.Y. Lau, W. White, B. W. Hoff, R. Edgar, N. Jordan, P. Pengvanich, T. Fleming, P. Mardahl, L. Bowers, and K.L. Cartwright, "Design of a Transparent Cathode for a Relativistic Magnetron Experiment using the ICEPIC Particle-in-cell Code," Bull. Am. Phys. Soc. vol. DPP05, UP1 9 (2005).

132. E. Schamiloglu, "Considerations of the Packaging of HPM Sources on EMC Effects (Invited)," EMC Zurich in Singapore, March 2, 2006, Singapore.

133. E. Schamiloglu, K.H. Schoenbach, and R. Vidmar, "Compact, Portable Pulsed Power - Lessons Learned and Quo Vadis? (Invited Plenary Talk)," 2006 Power Modulator Conference (Washington, DC, 17 May 2006).

134. S. Prasad,* H. Bosman,** M. Fuks,** and E. Schamiloglu, "Limitation of Leakage Current in the A6 Relativistic Magnetron," IEEE International Conference on Plasma Science (Traverse City, MI, June 2006).

135. M. Roybal,** M. Abney,* S. Prasad,* M. Fuks,** C.J. Buchenauer, K. Prestwich, J. Gaudet,** and E. Schamiloglu, "Design and Optimization of a Low-Impedance Pulsed Power Marx Generator to Drive a Relativistic X-band Magnetron," IEEE International Conference on Plasma Science (Traverse City, MI, June 2006).

136. K. Hahn,* J.E. Maenchen, B.V. Oliver, S. Cordova, M.D. Johnston, I. Molina, S. Portillo, D. Rovang, E. Schamiloglu, D.R. Welch, D.V. Rose, N. Bruner, G. Cooper, and J. McLean, "Plasma-filled Paraxial Diode Operation on RITS-3," IEEE International Conference on Plasma Science (Traverse City, MI, June 2006).

137. A.D. Andreev* and E. Schamiloglu, "Measurement of I-V Characteristic of Shortpulse (10-15 ns) Electron Beam," IEEE International Conference on Plasma Science (Traverse City, MI, June 2006).

138. J.T. Fleming, P. Mardahl, L. Bowers, H. Bosman,** S. Prasad,* M. Fuks** and E. Schamiloglu, "Three Dimensional PIC Simulations of the Transparent and Eggbeater Cathodes in the Michigan Relativistic Magnetron," IEEE International Conference on Plasma Science (Traverse City, MI, June 2006).

139. P. Kumar, T. Svimonishvili,* C. Watts, M. Gilmore, L. Bowers, J. Gaudet,** and E. Schamiloglu, "Characterization of Materials with Low Secondary Electron Yield for use in High-power Microwave Devices," IEEE International Conference on Plasma Science (Traverse City, MI, June 2006).

140. S. Prasad,* H. Bosman,** M. Fuks,** and E. Schamiloglu, "Efficiency Enhancement in A6 Magnetron with Transparent Cathode," IEEE International Conference on Plasma Science (Traverse City, MI, June 2006).

141. A.S. Shlapakovski, S.N. Artemenko, V.M. Matvienko, I.I. Vintizenko, W. Jiang, and E. Schamiloglu, "Status of the Development of X-band Antenna-amplifier: Design, Simulations, and Prototype Experiments," IEEE International Conference on Plasma Science (Traverse City, MI, June 2006).

142. S. Prasad,* A. Andreev,* H. Bosman,** M. Fuks,** E. Schamiloglu, and L. Ludeking, "Design of a Magnetron with a Transparent Cathode for Experimental Demonstration of Fast Start of Microwave Oscillations," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

143. A.V. Gromov, N.F. Kovalev, A.V. Palitsin, M.I. Fuks,** and E. Schamiloglu, "Nonlinear Stationary Waves on Thin-Walled Electron Beams," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

144. M. Lambrecht,* C. Baum, J. Gaudet,** C. Christodoulou, and E. Schamiloglu, "Study of Statistical Electromagnetics and Modeling of Surrogate IED Blasting Caps," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

145. T.G. McVeety,* M.C. Abney,* and E. Schamiloglu, "Magnetron Studies in Phase and Frequency Locking," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

146. T. Svimonishvili,* E. Schamiloglu, and S. Brueck, "Investigation of the Interaction of an Electron Beam and Metallic Grating in a Smith-Purcell Free Electron Laser (SPFEL)," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

147. M. Roybal,* C.J. Buchenauer, K. Prestwich, and E. Schamiloglu, "Design and Optimization of a Fast Risetime Pulsed Power Generator to Drive a High Power Relativistic S-Band Magnetron," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

148. A.V. Gromov, N.F. Kovalev, A.V. Palitsin, M.I Fuks,** and E. Schamiloglu, "I-V Characteristic of a High-Current Electron Gun with a Magnetically Insulated Thin Cathode," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

149. P. Kumar, C. Watts, T. Svimonishvili,* M. Gilmore, and E. Schamiloglu, "Characterization of the Dose Effect in Secondary Electron Emission," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

150. S. Altunç,* C.E. Baum, and E. Schamiloglu, "Impulsive Field near the Second Focus Along the Symmetry Axis of a Prolate-Spheroid IRA," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

151. M.I Fuks,** E. Schamiloglu, and E. Abubakirov, "Influence of Spent Electrons on BWO Operation," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

152. E. Kim, N.F. Kovalev, S.E. Fil'chenckov, M.I Fuks,** and E. Schamiloglu, "Analysis of Resonant Re-Radiation and Re-Reflection of Waveguide Waves by the Method of One-Dimensional Integral Equations," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

153. A.V. Gromov, N.F. Kovalev, A.V. Palitsin, M.I Fuks,** and E. Schamiloglu, "On Bursian and Pierce Instabilities of Electron Beams Propagating in Weakly Irregular Channels," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

154. P. Pengvanich, Y.Y. Lau, R. Gilgenbach, E. Cruz, J. Luginsland, and E. Schamiloglu, "Recent Advances in Magnetron Phase Locking: Effects of Frequency Chirps and Locking of Multiple Magnetrons," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

155. A.D. Andreev* and E. Schamiloglu, "Measurements of the I-V Characteristic of Short-Pulse (10-15 ns) Electron Beams," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

156. G. Mesyats, B. Kovalchuk, N. Ratahin, V. Rostov, V. Shpak, M. Yalandin, and E. Schamiloglu, "Academician Sergei D. Korovin: A Shortened Career in High Power Microwaves," IEEE International Conference on Pulsed Power and Plasma Science (Albuquerque, NM, June 17-22, 2007).

157. S. Prasad,* H. Bosman,** M. Fuks,** and E. Schamiloglu, "Investigation of Improved Magnetron Characteristics with a Transparent Cathode," Bull. Am. Phys. Soc. vol. DPP07, NO7 1 (2007).

158. E. Cruz, P. Pengvanich, Y.Y. Lau, R. Gilgenbach, J. Luginsland, and E. Schamiloglu, "Recent Advances in Magnetron Phase Locking: Effects of Frequency Chirps and Locking of Multiple Magnetrons," Bull. Am. Phys. Soc. vol. DPP07, TP8 35 (2007).

159. E. Schamiloglu, M.I. Fuks,** C.J. Buchenauer, S. Prasad,* and M. Roybal,* "Initial Experimental Results from a Relativistic Magnetron Driven by Transparent Cathodes," IEEE International Conference on Plasma Science (Karlsruhe, Germany, June 15-19, 2008).

160. K. Hahn,* B.V. Oliver, S. Cordova, M.D. Johnston, J.J. Leckbee, I. Molina, S. Portillo, D.J. Bittlestone, G. Cooper, J. McLean, N. Bruner, D.V. Rose, D.R. Welch, and E. Schamiloglu, "Recent Paraxial Diode Experiments on RITS-6," IEEE International Conference on Plasma Science (Karlsruhe, Germany, June 15-19, 2008).

161. P. Pengvanich, Y.Y. Lau, R.M. Gilgenbach, E.J. Cruz, J.W. Luginsland, and E. Schamiloglu, "Magnetron Phase Locking: Effects of Frequency Chirp and Locking of Multiple Magnetrons," IEEE International Conference on Plasma Science (Karlsruhe, Germany, June 15-19, 2008).

162. E. Schamiloglu, M. Fuks,** C.J. Buchenauer, S. Prasad,* and M. Roybal,* "Recent Progress on Relativistic Magnetrons Driven by Transparent Cathodes," EUROEM 2008 (Lausanne, Switzerland, July 21-25, 2008).

163. S. Altunç,* C.E. Baum, C.G. Christodoulou, and E. Schamiloglu, "Experimental Focal Waveforms of a Prolate-Spheroidal Impulse-Radiating Antenna (IRA)," EUROEM 2008 (Lausanne, Switzerland, July 21-25, 2008).

164. E. Schamiloglu, J. Gaudet,** W.D. Prather, C.E. Baum, R. Joshi, X. Shu, and K.H. Schoenbach, "Pulsed Power Design Considerations for a Prolate Spheroidal Impulse Radiating Antenna Intended for Biological Applications," EUROEM 2008 (Lausanne, Switzerland, July 21-25, 2008).

165. S. Prasad,* M. Fuks,** J. Buchenauer, and E. Schamiloglu, "Experimental Verification of Magnetron Operation with a Transparent Cathode," Bull. Am. Phys. Soc. vol. 53, No. 14 (2008), Abstract: UP6.00059.

166. M. Lambrecht,* K. Cartwright, C. Baum, and E. Schamiloglu, "Characterization of Hot-Wire Detonators using Analytical Modeling, Computational Tools, and Experiments," DEPS Annual Symposium (Honolulu, HI, November 17-21, 2008).

167. S. Prasad,* J. Buchenauer, M. Fuks,** C. Leach,* M. Roybal,* E. Schamiloglu, and W. White, "X-Band Relativistic BWO with Frequency Tuning," IEEE International Conference on Plasma Science (San Diego, CA, May 31-June 5, 2009).

168. M.I. Fuks** and E. Schamiloglu, "High Efficiency Relativistic Magnetron with Diffraction Output," IEEE International Conference on Plasma Science (San Diego, CA, May 31-June 5, 2009).

169. C.J. Leach,* C. Watts, and E. Schamiloglu, "Plasma Diagnostics to Study Cathodes Used to Drive Long-Pulse Magnetrons," IEEE International Conference on Plasma Science (San Diego, CA, May 31-June 5, 2009).

170. E. Schamiloglu, "Advances in Pulsed Power for Beams Applications (Invited)," 10^{th} International Workshop on Plasma Based Ion Implantation and Deposition (Sao Jose Dos Campos, SP, Brazil, September 7-11, 2009).

171. E. Schamiloglu, "Microwave Resonator Probe Diagnostic for Cold Plasma Nanoparticle Production (Invited)," EU COST Workshop on Nanoparticles in Plasmas (Antalya, Turkey, October 8-9, 2009).

172. S. Prasad,* M. Roybal,* J. Buchenauer, K. Prestwich, M. Fuks,** and E. Schamiloglu, "Effect of Cathode Alignment on Magnetron Operation," Bull. Am. Phys. Soc. vol. 54, No. 15 (2009), Abstract: NP8.00024.

173. C.J. Leach,* J. Osinski,* E. Schamiloglu, and C. Watts, "Spectral Diagnostics for the HelCat Helicon/Cathode Linear Plasma Device," Bull. Am. Phys. Soc. vol. 54, No. 15 (2009), Abstract: GP8.00110.

174. M. Liu,* C. Michel,* S. Prasad,* M. Fuks,** E. Schamiloglu, and C.-L. Liu, "Mode Switching in the A6 Magnetron," IEEE International Conference on Plasma Science (Norfolk, VA, June 20-24, 2010).

175. K. Nichols,* E. Schamiloglu, K.L. Cartwright, and J.D. Keisling, "Studies of 2D Child Langmuir Space-Charge-Limited Current using ICEPIC," IEEE International Conference on Plasma Science (Norfolk, VA, June 20-24, 2010).

176. K. Hahn,* B.V. Oliver, T.J. Webb, D.R. Welch, and E. Schamiloglu, "Paraxial Diode Operation on RITS-6," IEEE International Conference on Plasma Science (Norfolk, VA, June 20-24, 2010).

177. P. Kumar, S. Altunç,** C.E. Baum, C.G. Christodoulou, and E. Schamiloglu, "Investigation of Switch Designs for a Prolate-Spheroidal Impulse Radiating Antenna," IEEE International Conference on Plasma Science (Norfolk, VA, June 20-24, 2010).

178. S. Altunç,** C.E. Baum, K.F. McDonald, P. Kumar, E. Schamiloglu, and C.G. Christodoulou, "Photon Initiated Thyristor Switches," IEEE International Conference on Plasma Science (Norfolk, VA, June 20-24, 2010).

179. S. Soh* and E. Schamiloglu, "Dispersion Relation of the Electron Beam Inside a Reltron Cavity," IEEE International Conference on Plasma Science (Norfolk, VA, June 20-24, 2010).

180. E. Schamiloglu and M. Fuks, "What's the Meta? (Invited)," Bull. Am. Phys. Soc. vol. 55, No. 15 (2010), Abstract: CM10.00004.

181. K.L. Cartwright, M.M. Hopkins, M.T. Bettencourt, D.A. Shiffler, W.W. Tang, K. Nichols,* and E. Schamiloglu, "Verification of Emission Models for Finite Element and Finite Difference Time Domain Particle-in-Cell towards the Understanding of Variability of Field Emission Cathodes," IEEE International Conference on Plasma Science (Chicago, IL, June 26-30, 2011).

182. E. Schamiloglu, M. Fuks,** S. Prasad,** C. Leach,* C. Mendonca,* and D. Galbreath,* "Recent Advances in Relativistic Magnetrons," EUROEM 2012 (Toulouse, France, July 2-5, 2012).

183. E. Schamiloglu, M. Fuks,** S. Prasad,** C. Leach,* C. Mendonca,* and D. Galbreath,* "Recent Advances in Relativistic A6 Magnetron Research - Improvements in Start-Up and Efficiency," IEEE International Conference on Plasma Science (Edinburgh, Scotland, July 9-12, 2012).

184. E. Schamiloglu, M. Fuks,** S. Prasad,** C. Leach,* C. Mendonca,* and D. Galbreath,* "Recent Advances in Relativistic A6 Magnetron Research - Mode Control," IEEE International Conference on Plasma Science (Edinburgh, Scotland, July 9-12, 2012).

185. W. Radasky and E. Schamiloglu, "The Standardization of the High-altitude Electromagnetic Pulse (HEMP) in the International Electrotechnical Commission (IEC)," Fifteenth Annual Directed Energy Annual Symposium (Albuquerque, NM, November 26-30, 2012).

186. E. Schamiloglu, "Incorporating Metamaterial Structures in High Power Microwave Sources," Fifteenth Annual Directed Energy Annual Symposium (Albuquerque, NM, November 26-30, 2012).

187. E. Schamiloglu, "Recent Trends in Global High Power Microwave Source Research," Fifteenth Annual Directed Energy Annual Symposium (Albuquerque, NM, November 26-30, 2012).

Ph.D. Dissertations Supervised

1. Paul Werner - 1991 ”Measurement of the Erosion Rates of a Relativistic Electron Beam on a Plasma Channel” (Paul is an MTS at Sandia National Laboratories)
2. Larald Moreland - 1995 ”Effects of Varying Coupling Impedance, Finite Length, and Asynchronous Harmonics on High Power BWO Performance” (Larry is with Lockheed - Martin in Denver)
3. Christopher Grabowski - 1997 ”Pulse Shortening and Plasma Filling Studies on a Long-Pulse, High Power Backward Wave Oscillator” (Chris was a post-doc at the Weizmann Institute of Science and Cornell University; he is now with the Air Force Research Laboratory, KAFB)
4. Robert Wright - 2002 ”Evaluation of a Prototype Radially-Symmetric Transit Time Oscillator Using Simulation and Experiment” (After graduation he joined NOAA in Colorado; current whereabouts unknown)
5. Tony Statom - 2003 ”Repetitively-Pulsed Electron Diode-Induced Anode Properties” (Tony was with the Air Force Research Laboratory when he graduated; he is presently an SMTS at Sandia National Laboratories)
6. Kelly Hahn - 2006 ”Electron Beam Focusing in Gas and Plasma-Filled Transport Cells” (After graduation Kelly joined Sandia National Laboratories as a post-doc; she is currently an SMTS at Sandia National Laboratories)
7. Andrey Andreev - 2007 ”Methods to Produce Short-Pulse, High Power Microwaves” (Andrey was an NRC Postdoctoral Research Fellow at the Air Force Research Laboratory and then took a position at Raytheon/Ktech Corporation)
8. Serhat Altunç - 2007 ”Analytical and Numerical Focal Waveforms for a Prolate-Spheroidal IRA” (Serhat is at NASA Wallops Island, VA)
9. Michael Lambrecht - 2008 ”Electromagnetic Modeling of Hot-Wire Detonators Using Analytical and Numerical Methods with Comparison to Experiment” (Michael with the Air Force Research Laboratory, KAFB)
10. Sarita Prasad - 2010 ”Fast Start of Oscillations in a Short-Pulse Magnetron Driven by a Transparent Cathode” (Sarita is continuing as a Research Assistant Professor at UNM)
11. Tengiz Svimonishvili - 2011 ”Modeling of a Compact Terahertz Source Based on the Two-Stream Instability” (Tengiz is a PostDoc at Nanyang Technological University, Singapore)
12. Shawn Sze Liip Soh - 2011 ”Modeling, Simulation and Experimental Study of the UNM Low Power Reltron” (Shawn is at DSO, Singapore)
13. Christopher Leach - [passed qualifying exam, comp. exam in Fall 2011] Expected 2013
14. David M. Brumit - [passed qualifying exam Jan 2012] Expected 2013
15. Kimberely Nichols - [passed qualifying exam] Expected 2014
16. Brock Roberts - [passed qualifying exam] Expected 2014
17. Ngee Siang Kuek (National Univ. Singapore) - [passed qualifying exam] Expected 2013
18. Tuba Owens - [passed qualifying exam] Expected 2013
19. Ahmed M. Elfrgani - [passed qualifying exam] Expected 2013

M.S. Theses Supervised

1. Gary McCarthy - 1991 ”Calculation of the Operational Characteristics of the UNM Short-Pulse Backward Wave Oscillator” (After graduation Gary became an entrepreneur in Salt Lake City - lost contact with him since then)
2. Joe Bradley - 1992 ”Measurement of Microwave Generation in the UNM Short-Pulse Backward Wave Oscillator” (Joe obtained his Ph.D. under Professor Gahl at UNM; he is a member of the technical staff at LANL)
3. Clay Mayberry - 1993 ”Measurements of the Electrohydrodynamic Instability in Planar Geometry using Gallium” (Clay was with the DOE in DC and then PanTex; he is now with the Air Force Research Laboratory, KAFB)
4. Ron Focia - 1996 ”Ultrafast High Power Switching Diodes” (Ron took his Ph.D. under A. Bers at MIT; he now works for Sandia National Laboratories)
5. Gregory Todd Park - 1999 ”Implementing ”Smart Tube” Technology on a Backward Wave Oscillator” (Todd is with Park Engineering Services, Madison SD)
6. Kelly Hahn - 2002 ”Studies of a Long Pulse BWO Using a Disk Cathode” (Kelly obtained her Ph.D. under my supervision at UNM; she is an SMTS at Sandia National Laboratories)
7. Sam Choi - 2002 ”Characterization of Electron Beam Modulation in Compact Reltron HPM Source” (Sam was with Intel Corp. in Rio Rancho, NM for several years; I have lost contact with him)
8. Sezi Bakim - 2003 ”Modeling of a Communication Channel for HPM-driven Sails” (Sezi is working for a communications company in Istanbul, Turkey and completed his Ph.D. in Turkey)
9. Nathan L. Walbridge - 2004 ”A New Front End Data Acquisition System for Neutrino Physics” (Nate was at LANL and is now at the Indiana University Cyclotron Facility)
10. Paul Cravens - 2006 ”Modeling and Mitigating the Characteristic Effects of High Power Microwaves (HPM) on Critical Infrastructure” (Paul completed an Executive MBA at UNM’s Anderson School and took a position in the Army Corps of Engineers in Albuquerque)
11. Palmarin Castro - 2010 ”Studies of Dielectric Breakdown under Pulsed Power Conditions” (Paul is with Raytheon/Ktech Corporation in Albuquerque, NM)
12. Aaron Taylor - 2011 ”Microcontroller (8051-Core) Instruction Susceptibility to Intentional Electromagnetic Interference (IEMI” (Aaron continues in the Air Force as an officer)
13. Haynes Wood - 2012 ”Investigations of a Relativistic Magnetron that Utilizes Axial Extraction” (Haynes will be an ROTC instructor at the University of Michigan where he plans on continuing to study towards his Ph.D.)
14. David Galbreath - 2012 ”Influence of Implementing Straps on Pulsed Relativistic Magnetron Operation” (David continues in the Air Force as an officer)
15. Cassandra Mendonca - 2012 ”3D ICEPIC Simulations of Pulsed Relativistic Magnetron with Transparent Cathode: A Comparative Study with 3D MAGIC Simulations” Cassandra is seeking a position in Albuquerque
16. Lupe Romero - 2012 "Architecture and Design Considerations of Active Antennas on Space Based Platforms" (Lupe is a MTS at LANL)
17. Ehsan Vadiee - Ehsan is expected to complete his M.S. in May 2013
18. Julia Caroline Kleven - Julia is expected to complete here M.S. in May 2014

Teaching Evaluations

ICES scores out of maximum 6.0 (1988 - Spring 2008)

Semester	Course	Content	Instructor	Overall
Fall 1988	361 - Fields & Waves I	5.1	5.6	5.0
Spring 1989	361 - Fields & Waves I	4.7	5.6	4.8
Spring 1989	595 - Experimental Plasma Physics	5.6	5.7	5.6
Fall 1989	461 - Antennas & Propagation	5.0	6.0	6.0
Spring 1990	461 - Antennas & Propagation	5.0	6.0	5.0
Fall 1990	561 - Engineering Electromagnetics	5.0	5.5	5.1
Spring 1991	461 - Antennas & Propagation	5.3	6.0	5.3
Fall 1991	561 - Engineering Electromagnetics	5.2	5.3	5.1
Spring 1992	461 - Antennas & Propagation	5.6	5.8	5.6
Fall 1992	561 - Engineering Electromagnetics	5.4	5.6	5.3
Spring 1993	361 - Fields & Waves I	4.9	5.5	4.6
Fall 1993	362 - Fields & Waves II	4.9	5.5	4.7
Spring 1994	461 - Antennas & Propagation	5.2	5.7	5.3
Fall 1994	561 - Engineering Electromagnetics	5.4	5.7	5.4
Spring 1995	461 - Antennas & Propagation	5.6	5.8	5.6
Spring 1995	595 - High Power Microwaves	n/a	n/a	n/a
Fall 1995	561 - Engineering Electromagnetics	5.7	6.0	5.3
Spring 1996	361 - Fields & Waves I	4.9	5.4	4.9
Fall 1996	301 - Engineering Ethics	5.7	5.9	5.8
Fall 1996	561 - Engineering Electromagnetics	5.5	5.6	5.8
Spring 1997	301 - Engineering Ethics	5.3	5.6	5.3
Spring 1997	361 - Fields & Waves I	4.3	4.1	3.8
Fall 1997	561 - Engineering Electromagnetics	5.7	5.6	5.3
Spring 1998	461 - Antennas & Propagation	5.6	5.9	5.6
Fall 1998	595 - Beam/Wave Interactions	n/a	n/a	n/a
Spring 1999	461 - Antennas & Propagation	5.3	5.7	5.3
Fall 1999	561 - Engineering Electromagnetics	5.6	5.7	6.0
Spring 2000	340 - Probabilistic Methods	3.4	4.0	3.1
Fall 2000	340 - Probabilistic Methods	4.9	5.6	5.0
Spring 2001	340 - Probabilistic Methods	4.8	5.1	4.8
Fall 2001	360 - Electromagnetic Fields & Waves	5.1	5.5	5.2
Spring 2002	360 - Electromagnetic Fields & Waves	5.2	5.6	5.1
Fall 2002	557 - Pulsed Power & Charged Particle Acceleration	5.6	5.8	5.6
Spring 2003	360 - Electromagnetic Fields & Waves	5.0	5.6	5.0
Fall 2003	360 - Electromagnetic Fields & Waves	5.2	5.6	5.1
Spring 2004	360 - Electromagnetic Fields & Waves	5.1	5.6	4.9
Fall 2004	Institute for Infrastructure Surety Responsibilities			
Spring 2005	203 - Circuit Analysis I	5.0	5.6	5.0
Fall 2005	203 - Circuit Analysis I	5.0	5.1	4.9
Spring 2006	561 - Engineering Electromagnetics	4.9	4.9	4.5
Fall 2006	Sabbatical			
Spring 2007	IEEE PPPS-2007 Duties			
Fall 2007	213 - Circuit Analysis II	4.6	4.3	4.4
Spring 2008	561 - Engineering Electromagnetics	5.0	4.4	4.5

IDEA scores out of maximum 5.0 (Fall 2008 - present)

Semester	Course	Teacher	Course	Summary
Fall 2008	595 - Physical Principles of Wireless Communications	4.8	4.8	4.3
Spring 2009	558 - Charged Particle Beams & High Power Microwaves	5.0	5.0	5.0
Spring 2009	595 - Neurosystems Engineering	5.0	5.0	5.0
Fall 2009	595 - Foundations of Engineering Electromagnetics	5.0	4.6	4.8
Spring 2010	561 - Engineering Electromagnetics	4.9	4.8	4.6
Spring 2010	595 - Neurosystems Engineering	4.6	4.9	4.6
Fall 2010	555 - Foundations of Engineering Electromagnetics	5.0	4.6	4.8
Spring 2011	558 - Charged Particle Beams & High Power Microwaves	5.0	4.9	5.0
Fall 2011	555 - Foundations of Engineering Electromagnetics	4.3	4.2	4.2
Spring 2012	561 - Engineering Electromagnetics	3.4	3.3	3.3

Visiting Scientists Hosted by my Laboratory

1. 1991 - Dr. K.C. Mittal, BARC, Accelerator & Pulse Power Division, Mumbai, India
2. 1992 - Acad. G.A. Mesyats, Institute of Electrophysics, Russian Academy of Sciences, Ekaterinburg, Russia
3. 1992 - Dr. S.D. Korovin, V.V. Rostov, S.D. Polevin, V.P. Gubanov, Institute of High Current Electronics, Russian Academy of Sciences, Tomsk; F.Ya. Zagulov and V.V. Kladukhin, Institute of Electrophysics, Ekaterinburg, Russia
4. 1992 - Dr. G.G. Denisov, Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod, Russia
5. 1993-1994 - A.M. Roitman and I.V. Pegel, Institute of High Current Electronics, Russian Academy of Sciences, Tomsk, Russia
6. 1999 - Dr. Z. Kancleris and M. Dagys, Semiconductor Physics Institute, Vilnius, Lithuania
7. 1999 - Dr. M.I. Petelin, Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod, Russia
8. 2000 - Dr. L. Schächter, Electrical Engineering Department, Technion - Israel Institute of Technology, Israel
9. 2001 - Dr. Y.E. Krasik, Physics Department, Technion - Israel Institute of Technology, Israel
10. 2001 - Dr. A.S. Shlapakovski, Nuclear Physics Institute, Tomsk Polytechnic University, Russia
11. 2001 - Dr. W. Jiang, Extreme Energy-Density Research Institute, Nagaoka University of Technology, Japan
12. 2002 - Heiko Haase, University of Magdeburg, Germany
13. 2002 - Dr. N.F. Kovalev, Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod, Russia
14. 2007 - Drs. N.F. Kovalev and A.V. Palitsin, Institute of Applied Physics, Russian Academy of Sciences, Nizhny Novgorod, Russia
15. 2007 - Dr. V.I. Koshelev, Institute of High Current Electronics, Russian Academy of Sciences, Tomsk

16. 2007 - Professor Eduard V. Rostomyan, Institute of Radiophysics and Electronics, National Academy of Sciences of Armenia, Armenia
17. 2007 - Dr. Jose O. Rossi, INPE - Brazilian National Institute for Space Research, Brazil
18. 2008 - Professor Paul W. Smith, University of Oxford
19. 2008-2009 - Dr. Jeong-Hyeon Kuk, High Energy Density Technology Directorate, Agency for Defense Development, South Korea
20. 2009-2011 - Ms. Meiqin Liu, Xi'an Jiao Tong University, China
21. 2011 - Dr. Mario Ueda, INPE - Brazilian National Institute for Space Research, Brazil
22. 2011- Dr. Tao Shao, Tsinghua University, Beijing, China
23. 2011-2012 - Professor Yong-Dong Li, Xi'an Jiaotong University, China
24. 2011-2012 - Ms. Xin Li, Tsinghua University, Beijing, China

Invited Lectures Presented by Professor Schamiloglu

1. Los Alamos National Laboratory, CTR-3 Division, March 31, 2008 (hosted by Dr. D. Rej)
2. Sandia National Laboratories, Organization 1200, April 11, 1988 (hosted by Dr. J. Pace VanDevender)
3. Los Alamos National Laboratory, X-1 Division, June 16, 1988 (hosted by Dr. D. Winske)
4. Los Alamos National Laboratory, CTR-3 Division, January 26, 1989 (hosted by Dr. M. Tuczewski)
5. Los Alamos National Laboratory, U.S.-Japan Compact Toroid Workshop, November 8, 1989
6. University of Texas, El Paso, Colloquium Speaker, Spring 1990 (hosted by Department Chairperson)
7. Workshop on Pulsed Power Applications, Cornell University, October 1-3, 1990
8. Institute of High Current Electronics, USSR Academy of Sciences, Siberian Division, Tomsk, October 21, 1991 (hosted by Dr. S.D. Korovin)
9. Invited Speaker, Workshop on Ion Ring Applications, Sandia National Laboratories, March 16-18, 1992
10. Invited Speaker, local chapter of the IEEE MTTS, APS, EMCS, December 8, 1992
11. University of New Mexico College of Engineering Research Excellence Award Lecture, April 30, 1993
12. University of New Mexico IEEE Student Branch, July 15, 1993
13. University of Michigan, Department of Nuclear Engineering & Radiological Sciences, Intense Energy Beam Interaction Laboratory, March 13, 1996 (hosted by Professor R.M. Gilgenbach)
14. Texas Tech University, Pulsed Power Laboratory, April 17, 1996 (hosted by Professor M. Kristiansen)
15. Invited Participant, Inaugural Meeting of the "Pulsed Power Roundtable," Baltimore, MD, June 29, 1997 (hosted by Dr. Walko, Wright-Patterson Air Force Base)
16. Invited Participant, Second Convening of the "Pulsed Power Roundtable," University of Texas, Austin, February 19, 1998 (hosted by Dr. McNab)

17. Weizmann Institute of Science, Rehovot, Israel, June 17, 1998 (hosted by Professor Y. Maron)
18. University of New Mexico IEEE Student Branch, April 7, 1999
19. Invited Speaker, local chapter of the IEEE MTTs, APs, EMCs, April 27, 2000
20. Texas Tech University, Physics Department and ECE Department Joint Colloquium, February 8, 2001 (hosted by Professor M. Kristiansen)
21. Invited Lecture, Extreme Energy-Density Research Institute, Department of Electrical Engineering, Nagaoka University of Technology, Japan, March 19-20, 2002 (hosted by Professor K. Yatsui)
22. Presentation at the Center for Dielectric Studies, University of Missouri-Rolla, during the Fall 2002 meeting of the NSF-sponsored I/URC Research Center (joint with Penn State), October 30, 2002
23. Texas Tech University, Physics Department Colloquium, March 27, 2003 (hosted by Professor N. Akchurin)
24. Invited Speaker, local chapter of the IEEE MTTs, APs, EMCs, April 15, 2004
25. Invited Speaker, open forum at IVEC 2004, "The DoD's Interest in HPM: One University's Perspective," Albuquerque, NM, April 2004
26. Invited Speaker, Spring Meeting of Center for Dielectric Studies Albuquerque, May 17, 2004
27. Invited Speaker, University of Rome-Tor Vergata (at Frascati, Italy), May 2004
28. Seminar Speaker, ECE Department, University of New Mexico, September 3, 2004
29. Invited Speaker, New Mexico Surety Task Force, Panel on Cyber Security, November 5, 2004
30. Invited Speaker, Seoul National University, Seoul, South Korea, February 28, 2006 (hosted by Professor G.S. Park)
31. Invited Speaker, Novosibirsk State University, Novosibirsk, Russia, September 16, 2006 (hosted by Professor A.V. Arzhannikov)
32. Invited Speaker, Kumamoto University, Kumamoto, Japan, September 4, 2007 (hosted by Professor H. Akiyama)
33. Invited Speaker, Middle East Technical University, Ankara, Turkey, June 24, 2008 (hosted by Professor Şimsek Demir)
34. Invited Speaker, Northwest Institute of Nuclear Technology, Xi'an, China, July 6, 2008
35. Invited Speaker, Karlsruhe Institute of Technology, Karlsruhe, Germany, January 15, 2009 (hosted by Professor M. Thumm)
36. Invited Speaker, DoD AGED Group, Arlington, VA, June 25-26, 2009
37. Invited Speaker, Northwest Institute of Nuclear Technology, Xi'an, China, July 31, 2009
38. Invited Speaker, Jiaotong University, Xi'an China, July 31, 2009 (hosted by Professor H.J. Zhang)
39. Invited Speaker, Air Force Research Laboratory, High Power Microwave Division, May 11, 2010 (hosted by Dr. Don Shiffler)
40. Invited Tutorial, IVEC2011, Bangalore, India, February 21, 2011

41. Invited Speaker, Middle East Technical University, Ankara, Turkey, February 24-25, 2011 (hosted by Professor Şimsek Demir)
42. Invited Speaker, University of Michigan's MIPSE (Michigan Institute for Plasma Science and Engineering) Seminar Series, March 16, 2011 (hosted by Mark Kushner)
43. Invited Speaker, University of New Mexico Board of Regents Academic/Student Affairs & Research Committee, September 07, 2011
44. Invited Speaker, INPE (Brazil's National Institute for Space Research), Sao Jose Dos Campos, Brazil, February 4, 2012 (hosted by Dr. Jose Rossi)
45. Invited Speaker, Süleyman Demirel University, Isparta, Turkey, April 12, 2012 (hosted by Lutfi Oksuz)
46. Invited Speaker, IEEE NPSS Local Chapter, Singapore University of Technology and Design, May 22, 2012
47. Invited Speaker, AFOSR 60th Anniversary Series, July 18, 2012
48. Invited Lecturer, Tsinghua University Global Scholar, Beijing, China, September 17-20, 2012
49. Invited Lecturer, IET Seminar Lectures "Extreme Electromagnetics: The Triple Threat to Infrastructure," IET, Savoy Place, London, UK, January 14, 2013
50. Invited Lecturer, Microwave Tube Research and Development Centre, Bangaluru, India, "High Power Microwaves," March 4-8, 2013
51. Keynote Speaker, Raytheon Missile Systems, Tucson, Arizona, "High Power Microwave Devices and Systems," April 30, 2013
52. Invited Speaker, The Albuquerque IEEE Joint Chapter, "High Power Microwave Sources, Part I: An Historical Review, Part II: Thoughts on the Future - Dispersion Engineering," May 1, 2013
53. Invited Speaker, Directed Energy Directorate, SMDC, Huntsville, AL, "High Power Microwaves - the Lay of the Land," May 6, 2013

Departmental and University Committees

1. ECE Department, Coordinator of all Undergraduate and Graduate Electromagnetics Courses (1990-2003); Coordinator for ECE 360, 561 (2003-present)
2. ECE Undergraduate Curriculum Committee (1992-1998)
3. School of Engineering Faculty Improvement and Grievance Committee (1996-present)
4. ECE Undergraduate Advisement (1996-present)
5. ECE Department Communications Position Faculty Search Committee (1996)
6. School of Engineering Search Committee for ECE Chairperson (1997)
7. ECE Department/CHTM Faculty Search Committee for Endowed Chair (1998)
8. ECE Department Faculty Search Committee (1998-1999, 1999-2000, 2000-2001 (Chair), 2001-2002 (Chair), & 2006-2007 (Chair))

9. ECE Graduate Committee (1999-2001)
10. ECE Computer Use Committee (1999-2000, 2002-2004)
11. School of Engineering Math Task Force (Chair) (1999-2000)
12. ECE Department Strategic Planning Committee (2000-2001)
13. ECE Committee Studying Internet Teaching (Chair) (2003-2005)
14. Chair, University of New Mexico Faculty Senate Ad Hoc Committee on Deans' Evaluations (2004-2009)
15. School of Engineering Search Committee for ECE Chairperson (2004-2005)
16. Member, University of New Mexico Faculty Senate Governance Committee (2005-2007)
17. University of New Mexico Academic Freedom and Tenure Committee (2005-2008)
18. Member, Provost's Planning Council (2005-2008)
19. Chair, ECE Department Applied Electromagnetics Faculty Search Committee (2012-2013)
20. Chair, ECE Tenure and Promotion Committee (2007-2008, 2008-2009)
21. Member, ECE Department Staff Survey Committee (2007-present)
22. Chair, ECE Department Rankings Committee (2009)
23. Member, UNM Interim Provost Search Committee (April-May, 2011)
24. ECE Department Strategic Planning Committee (2011-present)
25. UNM Committee Developing Guidelines for University-wide Tenure and Promotion committee (Fall 2011)
26. UNM New Institutional Models Committee (Spring 2012)
27. Chair, ECE Department Applied Electromagnetics Faculty Search Committee (2012-2013)
28. Member, Vice President for Research and Economic Development Search Committee (2012-2013)
29. Member, Council on Strategic Research Initiatives (Office of the Vice President for Research and Economic Development) (2012-2013)
30. Academic Leadership Fellow, assigned to the Office of the Vice President for Research and Economic Development (Spring 2013)