

Richard Alan Cheville

Electrical Engineering
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Education

- Rice University:** Ph.D in Electrical Engineering, May 1994
Thesis Title: *Ultrafast Carrier Relaxation in C₆₀*
Thesis Advisor: Dr. N.J. Halas
- Rice University:** MEE in Electrical Engineering, May 1987
- Rice University:** BS in Electrical Engineering May 1986

Professional Affiliations

- American Society for Engineering Education: ERM Division, DEED Division.
- Institute of Electrical and Electronics Engineers; Education Society, Lasers and Electro-Optic Society.
- Optical Society of America, occasional member.

Teaching

- Taught over a dozen different electrical engineering courses including *Introduction to Engineering, Design of Engineering Systems, Microcomputer Architecture, Electromagnetic Fields, Optical Electronics, and Engineering Optics.*
- Developed new courses and curricula supported by over \$1.5M in National Science Foundation awards..

Research Interests

- Associate Professor, Oklahoma State University, 2003-present: Research on engineering education and developing new pedagogies designed to be relevant to students. Terahertz optoelectronics including integrated systems and interferometry,
- Assistant Professor, Oklahoma State University, 1998-2003: Development of engineering courses that emphasize application of engineering principles to real-world problems. Terahertz optoelectronics including commercial application of THz spectroscopy.
- Previous Experience: Terahertz time resolved spectroscopy of gas samples, combustion, and impulse ranging, time resolved carrier dynamics in semiconductors and disordered systems, nonlinear optics, electron beam pumped excimer lasers.

Service

Professional Service:

- Program Director, ENG/EEC engineering education program, National Science Foundation.
- Reviewer/Panelist for *IEEE Transactions on Education, ASEE ERM Division, National Science Foundation, National Institutes of Health, Optics Letters, Optics Express, Optics Communications, Journal of the Optical Society of America, Applied Physics Letters, IEEE Selected Topics in Quantum Electronics, the United States Civilian Research and Development Fund, Applied Optics*
- Organizing Committee Member *Optical THz Science and Technology Conference*, Orlando, FL.

University Service:

- Chair of departmental accreditation committee- Oklahoma State University.
- University-wide assessment and accreditation committee work- Oklahoma State University.

Educational Service:

- Trainer for National Center for Case Studies in Science.

Honors and Awards

- HKN and IEEE OSU Student Chapter Outstanding Professor Award
- NSF CAREER Award
- Robert Welch Foundation Fellowship

Scholarship

Book Chapters

- R. A. Cheville, M. T. Reiten, R. McGowan, and D. Grischkowsky, “Applications of Optically Generated THz Pulses to Time Domain Ranging and Scattering”, D. M. Mittleman, Editor, Springer Verlag, Berlin, 2002.
- R. A. Cheville “THz time-domain spectroscopy with photoconductive antennas”, *THz Spectroscopy: Principles and Applications*, Susan L. Dexheimer, Editor, CRC Press, Boca Raton, FL, 2008

Peer Reviewed Journals/Papers/Case Studies

- S. Yamaguchi, A. Cheville, Th. Hoffmann, R. A. Sauerbrey, W. L. Wilson, F. K. Tittel, *Gain Measurements on the KrF(B-X), XeF(B-X), and XeF(C-A) Laser Transitions in a XeF(C-A) Laser Gas Mixture*, IEEE Journal of Quantum Electronics, **27**, 1288, 1991.
- R. A. Cheville, W. B. Haynes, N. J. Halas, *Time-Resolved Reflectivity Studies of GaAs (100) Oxide and GaAs (100) ZnSe Interfaces*, Applied Physics Letters, **59**, 1476, 1991.
- R. A. Cheville and N. J. Halas, *Time-Resolved Carrier Relaxation in Solid C₆₀ Thin Films*, Physical Review B, **45**, 4548, 1992.
- R. A. Cheville and N. J. Halas, *A Wide Bandwidth Frequency Doubler for Tunable Femtosecond Lasers*, Optics Letters, **17**, 1343, 1992.
- M. T. Reiten, R. A. Cheville and N. J. Halas, *Phase Matching and Focussing Effects in Noncollinear Sum Frequency Mixing in the Near VUV Region*, Optics Communications, **110**, 645, 1994.
- R. A. Cheville, R. D. Averitt and N. J. Halas, *Ultrafast Large Dynamic Range Spectroscopy*, Optics Communications, **110**, 327, 1994.
- R. A. Cheville and D. Grischkowsky, *Far-infrared Terahertz Time-domain Spectroscopy of Flames*, Optics Letters, **20**, 1646, 1995.
- D. Grischkowsky and R.A. Cheville, *Limits and Applications of THz Time-Domain Spectroscopy*, Proceedings of the SPIE, 2524, 26, 1995.
- R. A. Cheville and D. Grischkowsky, *Time Domain THz Impulse Ranging Studies*, Applied Physics Letters, **67**, 1960, 1995
- B. N. Flanders, R. A. Cheville, D. Grischkowsky, and N. F. Scherer, *Pulsed Terahertz Transmission Spectroscopy of Liquid CHCl₃, CCl₄, and their Mixtures*, Journal of Physical Chemistry, **100**, 11284, 1996.
- H. Harde, R. A. Cheville, and D. Grischkowsky, *Terahertz Studies of Collision-Broadened Rotational Lines*, Journal of Physical Chemistry, Feature Article, **101**, 3646, 1997.
- R. A. Cheville, R. W. McGowan, and D. Grischkowsky, *Late Time Target Response Measured with THz Impulse Ranging*, IEEE Transactions on Antennas and Propagation, **AP45**, vol. 45, pp. 1518-1524, 1997.
- H. Harde, R.A. Cheville, and D. Grischkowsky, *Collision Induced Tunneling in Methyl Halides*, Journal of the Optical Society of America B, **14**, 3282-3293, 1997.
- R. A. Cheville, R. W. McGowan, and D. Grischkowsky, *Time resolved measurements which isolate the mechanisms responsible for terahertz glory scattering from dielectric spheres*, Physical Review Letters, **80**, 269, 1998.
- R. A. Cheville and D. Grischkowsky, *Far-infrared and self-broadened rotational linewidths of high-temperature water vapor*, Journal of the Optical Society of America B, **16**, 317, 1999.
- R. W. McGowan, R. A. Cheville, and D. Grischkowsky, *Direct Observation of the Gouy Phase Shift in THz Impulse Ranging*, Applied Physics Letters, **76**, 670, 2000.
- R. W. McGowan, R. A. Cheville, and D. Grischkowsky, *Experimental Study of the Surface Waves on a Dielectric Cylinder via THz Impulse Radar Ranging*, IEEE Microwave Theory and Techniques, **48**, 417, 2000
- M. T. Reiten, D. Grischkowsky and R. A. Cheville, *Properties of surface waves determined via bistatic terahertz impulse ranging*, Appl. Phys. Lett., Vol. 78, 1146-114
- S. Krishnamurthy, M. T. Reiten, S. A. Harmon, and R. A. Cheville, *Characterization of thin polymer films using terahertz time-domain interferometry*, Appl. Phys. Lett., Vol. 79, 875-877 (2001).
- M. T. Reiten, D. Grischkowsky, and R. A. Cheville, *Optical Tunneling of Single Cycle, THz Bandwidth Pulses*, Phys. Rev. E., Vol. 64, 036604-1-5 (2001).
- H. Harde, J. Zhao, M. Wolff, R. A. Cheville, and D. Grischkowsky, *THz Time-Domain Spectroscopy on Ammonia*, J. Phys. Chem. A., Vol. 105, 6038-6047 (2001).

- M. T. Reiten, K. McClatchey, D. Grischkowsky, and R. A. Cheville, *Incidence Angle Selection and Spatial Reshaping of THz Pulses in Optical Tunneling*, Optics Letters, Vol. 26, 1900(2001).
- K. McClatchey, M. T. Reiten, and R. A. Cheville, *Time Resolved synthetic aperture terahertz impulse imaging*, Appl. Phys. Lett., Vol. 79, 4485-4487 (2001).
- M. Scepanovic and R. A. Cheville, *The Zoom Lens: A Case Study in Geometrical Optics*, Journal of College Science Teaching, Vol. 32, 48, 2002.
- Matthew T. Reiten, Stacey A. Harmon, and Richard Alan Cheville, "Terahertz beam propagation measured through three-dimensional amplitude profile determination," J. Opt. Soc. Am. B, Vol. 20, No. 10, 2215-2225 (2003).
- J. A. Small and R. A. Cheville, *Measurement and noise characterization of optically induced index changes using Terahertz interferometry*, Applied Physics Letters, vol. 84, p. 4328, 2004.
- R. Alan Cheville, *Perspectives on THz Time Domain Spectroscopy*, J. Opt. Soc. Korea, Vol. 8, 34-52 (2004).
- S. A. Harmons, R. A. Cheville, *Part-per-million gas detection from long-baseline THz spectroscopy*, Applied Physics Letters, vol. 85, p. 2128, 2004.
- R. A. Cheville, M. T. Reiten, J. O'Hara, D. Grischkowsky, THz Time Domain Sensing and Imaging, Proceedings of the SPIE, vol. #5411 "Terahertz for Military and Security Applications II", pp. 196-206, 2004.
- Peer Reviewed Case Studies: (available at: <http://ublib.buffalo.edu/libraries/projects/cases/ubcase.htm>)
 - Alan Cheville, *An Electrical Storm on the Horizon: Can Technology Stimulate Reasoned Debate on Waste Containment?*
 - Karen Altendorf, Alan Cheville, *A Classic of Serial Murder: Forensics Meets Photonics*
 - Alan Cheville and Misa Scepanovic, *The Zoom Lens: A Case Study in Geometrical Optics*
- M. T. Reiten and R. A. Cheville, *Effect of spherical aberration and surface waves on propagation of lens-coupled THz pulses*, Optics Letters, vol. 30, p. 673, 2005.
- R. Alan Cheville, Arthur McGovern, Kay S. Bull, *The Light Applications in Science and Engineering Research Collaborative Undergraduate Laboratory for Teaching (LASER CULT)-Relevant Experiential Learning in Photonics*, IEEE Transactions on Education, vol. 48, no. 2, 2005.
- Alan Cheville, *Teaching optics effectively, an in-depth approach*, Optics and Photonics News, pp. 16-17, May, 2005.
- R. A. Cheville, Essay: Education and the Wise Consumer, IEEE Potentials, vol. 24, Aug-Sep, p. 44, 2005.
- M. M. Awad, R. A. Cheville, *Transmission terahertz waveguide-based imaging below the diffraction limit*, Applied Physics Letters, vol. 86, Art. No. 221107, 2005.
- S. Ramani, A. Cheville, J. E. Garcia, V. Agarwal, *Conductivity of free-standing porous silicon layers using terahertz differential time-domain spectroscopy*, Phys. Stat. Sol. C, vol. 4, p. 2111-2115, 2007.
- R. A. Cheville, C. Bunting, *VECTOR: A Hands-On Approach That Makes Electromagnetics Relevant To Students*, IEEE Transactions on Education, vol. 52, pp. 350-359, 2009.
- R. Singh, E. Plum, C. Menzel, C. Rockstuhl, A. K. Azad, R. A. Cheville, F. Lederer, Weili Zhang, and N. I. Zheludev, "Terahertz metamaterial with a asymmetric transmission," Physical Review B, Vol. 80, 153104, (2009).
- R. A. Cheville, *Transformative Experiences: Scaffolding Design Learning Through the Vygotsky Cycle*, accepted for publication in International Journal of Engineering Education, 2009.
- R. A. Cheville and C. B. Bunting, *Engineering Students for the 21st Century: Student Development Through the Curriculum*, Advances in Engineering Education, Vo. 2, no. 4, Summer 2011.
- R. A. Cheville, *An Engineering Taxonomy for Course and Program Design and Evaluation*, submitted for publication in Advances in Engineering Education.
- R. A. Cheville, *Engineering Education Today: Capturing the Afterlife of Sisyphus in Five Snapshots*, invited paper for centennial edition of Proceedings of the IEEE, vol. 100, pp. 1361-1375, 2012.

Workshops Given

- *Introduction to THz Technology*. This three hour workshop presents the basics of THz technology to industry, government, and academic participant. Given at Conference on Lasers and Electrooptics 2006-2009.
- *Special Session – Utopia University- Building a Roadmap for Education the Next Millenium's Engineers*. A workshop at the 2009 Frontiers in Education Conference given jointly with Euan Lindsay and Lisa Benson.

- *Case Studies in Engineering Education*. A three hour workshop on how to use case studies in engineering courses given at the ASEE Annual Meeting 2007 and 2008.
- *Case Studies for Emergency Responders*. A short 90 minute workshop for Oklahoma first responders on using case studies to train emergency personnel given at OSU's Fire Protection Services Summer Workshop.
- Approximately ten to fifteen workshops on educational pedagogy and technology given as part of OSU's *Institute for Teaching and Learning Excellence* ongoing faculty development series.
- *Introduction to THz Technology*. Another workshop on the basics of THz technology to industry, government, and academic participant. Given at American Physical Society March Meeting 2009.

Conference Presentations

- R. A. Cheville, T. Zhang, R. Sauerbrey, W. L. Wilson, F. K. Tittel, *Gain Measurements on the KrF(B-X), XeF(B-X), and XeF(C-A) Laser Transitions in a XeF(C-A) Laser Gas Mixture*, Proceedings of the International Conference on Lasers '89, p. 164
- R. A. Cheville, R. Sauerbrey, W. L. Wilson, F. K. Tittel, *Measurement of Small Signal Gain and Absorption in an Electron Beam Excited Multicomponent Rare Gas - Halide Mixture*, Conference on Lasers and Electro-optics, Anaheim, 1990.
- R. A. Cheville and N. J. Halas, *Time-Resolved Reflectivity Studies of the ZnSe/GaAs Interface*, International Laser Science Conference: ILS-7, Monterrey, 1991.
- R. A. Cheville and N. J. Halas, *Relaxation Dynamics of Solid C₆₀*, International Laser Science Conference: ILS-7, Monterrey, 1991.
- R. A. Cheville and N. J. Halas, *Time-Resolved Reflectivity Studies of the ZnSe/GaAs Interface*, OSA Annual Meeting, San Jose, 1991.
- R. A. Cheville and N. J. Halas, *Time-Resolved Excited-State Relaxation Processes in Solid C₆₀*, OSA Annual Meeting, San Jose, 1991.
- R. A. Cheville and N. J. Halas, *A Wide Bandwidth, High Conversion Efficiency Frequency Doubler*, OSA Annual Meeting, San Jose, 1991.
- R. A. Cheville and N. J. Halas, *Carrier Dynamics in the Solid Fullerenes*, Conference on Lasers and Electro-Optics, Anaheim, 1992
- R. A. Cheville and N. J. Halas, *Time-Resolved Carrier Dynamics in Solid C₆₀*, International Quantum Electronics Conference, Vienna, Austria, 1992.
- R. A. Cheville and N. J. Halas, *Time-Resolved Carrier Relaxation in Solid C₆₀ Thin Films*, Bulletin of the American Physical Society, **37**, 612 1992.
- R.A. Cheville, N. J. Halas, *Carrier Dynamics in C₆₀Thin Films*, OSA Annual Meeting, Albuquerque, 1992.
- R.A. Cheville, N. J. Halas, *Dispersive Frequency Doubling of a Ti:Sapphire Laser with High Conversion Efficiency*, OSA Annual Meeting, Albuquerque, 1992.
- R. A. Cheville and N. J. Halas, *Carrier Dynamics in Solid C₆₀*, invited talk at OELase, Los Angeles, 1993.
- R. A. Cheville, R. D. Averitt, N. J. Halas, *High-Accuracy Measurement of the Slow Relaxation in C₆₀ Thin Films*, Bulletin of the American Physical Society, 39, 593, 1994.
- M. T. Reiten, R. A. Cheville, and N. J. Halas, "Wide bandwidth frequency doubling and harmonic generation of Ti:sapphire laser radiation," presented at Generation, Amplification, and Measurement of Ultrashort Laser Pulses, Los Angeles, CA, USA, 1994
- N. J. Halas, V. Papanyan, R. D. Averitt, P. Pippenger, and R. A. Cheville, "Solvent free high purity solid C₆₀: optical properties," presented at 2nd International Conference on Optical Probes of Conjugated Polymers and Fullerenes, Salt Lake City, UT, USA, 1994.
- R. A. Cheville and N. J. Halas, *Large Dynamic Range Spectroscopy of Molecular Relaxations*, CLEO/QELS, Baltimore, 1995.
- D. Grischkowsky and R. A. Cheville, "Limits and applications of THz time-domain spectroscopy," presented at National Science Foundation (NSF) Forum on Optical Science and Engineering, San Diego, CA, USA, 1995.
- R. A. Cheville, B. Nicholson, and D. R. Grischkowsky, *A Compact Time Domain THz Ranging System*, CLEO/QELS, Baltimore, 1995.
- R. A. Cheville and D. Grischkowsky, *THz Time Domain Spectroscopy of Flame Species and Temperature*, OSA Annual Meeting, Portland, 1995

- R. A. Cheville and D. Grischkowsky, *New Applications of THz Optical Sources*, 26th Winter Colloquium on Physics of Quantum Electronics, Snowbird, Utah, 1996.
- R. A. Cheville and D. Grischkowsky, *Previously Impossible Measurements made Possible by Terahertz Time Domain Spectroscopy*, invited talk, Ultrafast Phenomena, 10th annual topical meeting, San Diego, 1996.
- D. Grischkowsky and R. A. Cheville, "Scale ranging with subps pulses of THz radiation," presented at Conference Proceedings LEOS'96 9th Annual Meeting IEEE Lasers and Electro-Optics Society, Boston, MA, USA, 1996.
- R. A. Cheville and D. Grischkowsky, *THz Time Domain Impulse Ranging*, invited talk, CLEO/IQEC, Anaheim, 1996.
- R. A. Cheville, R. C. McGowan, D. Grischkowsky, *Impulse Ranging with THz Pulses*, invited talk, OSA Annual Meeting, Rochester, 1996.
- D. Grischkowsky and R. A. Cheville, *THz Impulse Ranging*, Ultrafast Electronics and Optoelectronics Topical Meeting, Incline Village, Nevada, 1997.
- D. Grischkowsky, R. A. Cheville, H. Harde, *THz studies of Rotational Line Shapes*, invited talk, CLEO/QELS, Baltimore, 1997.
- H. Harde, R. A. Cheville, and D. Grischkowsky, *Collision Induced Tunneling in Methyl Halides*, CLEO/QELS, Baltimore, 1997.
- B. N. Flanders, P. Moore, N. F. Scherer, R. A. Cheville, and D. Grischkowsky, *Pulsed Terahertz Study and Spectral Analysis of a Simple Solution: HCl in CCl₄*, CLEO/QELS, Baltimore, 1997.
- R. A. Cheville, *THz Time Domain Spectroscopy Systems*, invited talk, OSA Annual Meeting, OSA Annual Meeting, Long Beach, 1997.
- D. Grischkowsky, R. A. Cheville, *Unique Applications of THz Spectroscopy*, invited talk, OSA Annual Meeting, OSA Annual Meeting, Long Beach, 1997.
- R. A. Cheville, D. Grischkowsky, *THz Time Domain Spectroscopy Applied to Collisions, Water Vapor, and Flames*, invited talk, Annual Meeting of the American Physical Society, Los Angeles, 1998.
- R. A. Cheville, D. Grischkowsky, *Direct Observation of the ν_2 Water Rotational Band in Flames via THz Time Domain Spectroscopy*, CLEO/IQEC, San Francisco, 1998.
- R. A. Cheville, *THz Time Domain Spectroscopy*, invited talk, OSA Annual Meeting, Baltimore, 1998.
- R. A. Cheville, R. W. McGowan, D. Grischkowsky, *Practical Applications of Ultrafast THz Spectroscopy*, invited talk, Lasers '98, Tucson, 1998.
- R. A. Cheville and D. Grischkowsky, *The Freshman Research Scholars Program, Springboard to Undergraduate Research*, OPTO Southwest (SPIE), Albuquerque, NW, 2000.
- R. A. Cheville, R. W. McGowan, D. Grischkowsky, *New Directions in THz Ranging*, invited talk, CLEO 2000, San Francisco, 2000.
- M. T. Reiten, D. Grischkowsky, R. A. Cheville, *Variable angle THz impulse ranging on cylinders*, CLEO 2000, San Francisco, 2000.
- M. T. Reiten, D. Grischkowsky, R. A. Cheville, *Variable Angle Impulse Ranging and Image Reconstruction of Dielectric Cylinders*, Ultrafast 2000, Charleston, 2000.
- J. O'Hara, R. A. Cheville, D. Grischkowsky, *Reflective geometry THz imaging*, CLEO, Baltimore, 2001.
- M. T. Reiten, D. Grischkowsky, R. A. Cheville, *Terahertz pulse propagation in optical tunneling: causal vs. superluminal*, CLEO, Baltimore, 2001.
- H. Harde, J. Zhao, M. Wolff, R. A. Cheville, D. Grischkowsky, *THz Spectroscopy on Ammonia*, CLEO, Baltimore, 2001.
- S. Krishnamurthy, M. T. Reiten, S. A. Harmon, R. A. Cheville, *THz interferometer for characterization of thin samples*, Optical Society of America Annual Meeting, Long Beach, 2001.
- S. A. Harmon, M. T. Reiten, R. A. Cheville, *Part per million species detection with THz radiation*, Optical Society of America Annual Meeting, Long Beach, 2001.
- M. T. Reiten, K. McClatchey, D. Grischkowsky, R. A. Cheville, *K vector filtering and spatial pulse reshaping in optical tunneling*, Optical Society of America Annual Meeting, Long Beach, 2001.
- R. A. Cheville, *Confinement of ultrawide bandwidth THz pulses, microresonators, and waveguides*, Photonics West, San Jose, 2002.
- M. T. Reiten, S. A. Harmon, R. A. Cheville, *THz beam propagation measured through 3D amplitude profile determination*, Optical Society of America Annual Meeting, Orlando, 2002.
- R. A. Cheville, D. Grischkowsky, invited talk, *Material characterization using THz time domain spectroscopy*, Optical Society of America Annual Meeting, Orlando, 2002.

- S. A. Harmon, M. T. Reiten, R. A. Cheville, *Long path length beam propagation with non-ideal beams*, Optical Society of America Annual Meeting, Orlando, 2002.
- R. Alan Cheville, Matthew T. Reiten, John O'Hara, Daniel R. Grischkowsky, invited talk, *THz Time Domain Sensing and Imaging*, SPIE Defense and Security Symposium, Orlando, Florida, 2004.
- S.A. Harmon and R.A. Cheville, *Wideband gas sensing using long path THz spectroscopy*, Conference on Lasers and Electrooptics, San Francisco, 2004.
- Lesley Hess and R. Alan Cheville, *Nondestructive evaluation of ceramic bearings using THz impulse ranging*, Conference on Lasers and Electrooptics, San Francisco, 2004.
- Jay A. Small, R. A. Cheville, *Noise reduction in THz systems using THz interferometry*, Conference on Lasers and Electrooptics, San Francisco, 2004.
- M. T. Reiten and R. Alan Cheville, *The role of spherical aberration on THz pulse propagation*, Conference on Lasers and Electrooptics, San Francisco, 2004.
- R. Alan Cheville, Arthur McGovern, Kay S. Bull, *The LASER CULT- relevant, experiential learning in photonics*, Frontiers in Optics (OSA), Rochester, 2004.
- R. A. Cheville, *THz Spectroscopy for Dummies*, Invited Talk, Annual Meeting of the American Chemical Society, Washington D. C., 2005
- L. Hess, M. T. Reiten, R. A. Cheville, *Nondestructive evaluation of ceramic materials using terahertz impulse ranging*, SPIE Symposium on Nondestructive Evaluation for Health Monitoring and Diagnostics, San Diego, 2006.
- R. A. Cheville, THz Workshop Presentation, Conference on Lasers and Electro-Optics, Long Beach, 2006.
- R. A. Cheville, *Engineering Students for the 21st Century: An ongoing case study in curriculum reform at a large state university*, ASEE Annual Meeting, Chicago, 2006.
- R. A. Cheville, *The LASER CULT: Hands-On Laboratory in Photonics*, ASEE Annual Meeting, Chicago, 2006.
- C. Bunting, J. West. R. A. Cheville, *VECTOR: Vitalizing Electromagnetic Concepts To Obtain Relevance*, ASEE Annual Meeting, Chicago, 2006.
- Suchitra Ramani, Alan Cheville, J. Escorcía Garcia, Vivechana Agarwal; *Characterization of Porous Silicon Using Terahertz Differential Time-Domain Spectroscopy*, Optical THz Science and Technology Meeting, Orlando, 2007.
- M. T. Reiten, R. A. Cheville *Spatially Resolved Terahertz Pulse Propagation from an Aspheric Lens*, Optical THz Science and Technology Meeting, Orlando, 2007.
- Kyrus Kuplicki, Nicholas Oswald, Alan Cheville *A Soleil-Babinet Compensator for THz Pulses*, Optical THz Science and Technology Meeting, Orlando, 2007.
- R. A. Cheville, THz Workshop Presentation, Conference on Lasers and Electro-Optics, Baltimore, 2007.
- Christine Co, Bear Turner, Alan Cheville, *A pre-capstone design project designed to improve student performance on open-ended design projects*, American Society for Engineering Education Annual Conference, Honolulu, 2007.
- Charles Bunting, Cameron Musgrove, James Duvall, James West, Alan Cheville, *A robot car controlled by electrostatics , a first project for VECTOR: a hands-on approach that makes electromagnetics relevant for students*, American Society for Engineering Education Annual Conference, Honolulu, 2007.
- Alan Cheville, Christine Co, Bear Turner, *Communication as a proxy measure for student "design ability" in capstone design courses*, American Society for Engineering Education Annual Conference, Honolulu, 2007.
- Alan Cheville, Christine Co, Bear Turner, *Improving team performance in a capstone design course using the jigsaw technique and electronic peer evaluation*, American Society for Engineering Education Annual Conference, Honolulu, 2007.
- Jason Pitts, Patrick Teague, Alan Cheville, Charles Bunting, Sohum Sohoni, *Effects of the team-based approach on individual learning*, American Society for Engineering Education Annual Conference, Honolulu, 2007.
- R. A. Cheville, *Introduction to Nanotechnology: From Synthesis to Self-Assembly*, presented at NanoFocus and Oklahoma NSF EPSCoR Annual State Conference, Oklahoma City, 2008.
- N. Oswald, C. Huddleston, R. A. Cheville, *A Racecar Design-Build-Test Project for Low Income, First Generation pre-College Students*, American Society of Engineering Education Annual Conference, Pittsburgh, 2008.
- J. Duvall, R. A. Cheville, *Evaluating Different Aspects of Peer Interaction Using an On-Line Instrument*, American Society of Engineering Education Annual Conference, Pittsburgh, 2008.

- R. A. Cheville, *Work in Progress: Individual Accountability in Capstone Design at the "Divide-and-Conquer" Extreme*, Frontiers in Education, Saratoga Springs, 2008.
- R. A. Cheville, *THz and Education*, Optical THz Science and Technology Conference, Santa Barbara, 2009.
- S. Ramani and R. A. Cheville, *Effect of analytical and experimental errors in THz Differential Time-Domain Spectroscopy (THz-DTDS)*, Optical THz Science and Technology Conference, Santa Barbara, 2009.
- S. Welch, R. A. Cheville, *The impact of Scaffolding on Student Success in a Pre-Capstone Design Course*, American Society of Engineering Education Annual Conference, Austin, 2009.
- C. Bunting, R. A. Cheville, *Technician First: Teaching High Frequency Design as a Technological Enabler*, American Society of Engineering Education Annual Conference, Austin, 2009.
- N. Oswald, K. High, and R. A. Cheville, *Work in Progress – Motivation for Mathematics, Using Design with the Wright State Model*, Frontiers in Education Conference, San Antonio, 2009.
- R. A. Cheville, *Designing Successful Design Projects*, American Society of Engineering Education Annual Conference, Louisville, 2010.
- R. A. Cheville, *A Functional Decomposition Test for Formative/Summarive Evaluation of Capstone Design*, Capstone Design Conference, Boulder, CO, 2010.
- E. Lindsay and R. A. Cheville, *Explaining Education to Engineers: Feedback Control Theory as a Metaphor*, Frontiers in Education Conference, Washington D.C., 2010.
- S. Ramani, M. Reiten, D. R. Chowdhury, A. Taylor, R. A. Cheville, J. F. O'Hara, A. Azad, *Metamaterial Radiation from Attenuated Total Reflection at THz Frequencies*, 36th International Conference on Infrared and Millimeter Waves, Houston, TX, 2011.
- R. A. Cheville, *Active Learning in Ten Minutes, or Drinking from the Firehose*, invited presentation at National Academy of Engineering's Frontiers of Engineering Education, Irvine, California, 2011.
- R. A. Cheville, *Globalization in Engineering Education: Current Challenges and Opportunities*, invited talk, International Microwave Symposium 2012, Montreal, Canada.