

CURRICULUM VITAE

ANTHONY M. JOHNSON

EDUCATION

Ph.D.	1981	City College of New York/Bell Labs (Murray Hill, NJ), Physics Degree granted by the City University of NY Graduate Center [PhD thesis research conducted at AT&T Bell Labs in Murray Hill, NJ, with support from the Bell Labs Cooperative Research Fellowship Program (CRFP) for Minorities]
B.S.	1975	Polytechnic Institute of New York, Physics Magna Cum Laude

Experience in Higher Education

9/1/03 to present:	University of Maryland, Baltimore County (UMBC), Baltimore, MD Director of the Center for Advanced Studies in Photonics Research (CASPR) Professor of Physics Professor of Computer Science & Electrical Engineering (CSEE) 2004 Wilson H. Elkins Professorship of the University System of Maryland
1/03 to 9/1/03:	New Jersey Institute of Technology (NJIT), Newark, NJ Foundation Professor of Optics & Photonics and Distinguished Professor of Physics
1/3/95 to 1/03:	New Jersey Institute of Technology (NJIT), Newark, NJ Chairperson & Distinguished Professor of Applied Physics & Professor of Electrical and Computer Engineering

Experience in Other than Higher Education

8/81 to 1/1/95:	AT&T Bell Laboratories, Holmdel, NJ; Member of Technical Staff in the Quantum Physics and Electronics Research Dept. -- promoted to Distinguished Member of Technical Staff in 1988; joined the Photonic Circuits Research Dept. 9/90
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Honors Received

2021	Election to the American Academy of Arts and Sciences https://news.umbc.edu/umbcs-anthony-johnson-pulse-laser-innovator-elected-a-member-of-the-american-academy-of-arts-and-sciences/
2021	Stephen D. Fantone Distinguished Service Award of the Optical Society (OSA) https://news.umbc.edu/umbcs-anthony-johnson-honored-for-decades-of-research-mentorship-service/ https://www.osa.org/en-us/2021fantoneawardwinner/
2020	Life Fellow, Institute of Electrical and Electronics Engineers (IEEE)
2018-Present	Distinguished Traveling Lecturer, APS (American Physical Society) Division of Laser Science (DLS)

- 2013 Invited to join the HistoryMakers/ScienceMakers
<http://www.thehistorymakers.com/biography/anthony-johnson>
- 2013 Joseph S. Tyler Jr. Award, National Technical Association, Baltimore Chapter
- 2011-2013 Sigma Xi Distinguished Lecturer
- 2011 Honorary Doctorate – Doctor of Science, Honoris Causa at the Commencement of the City College of the City University of NY (CCNY)
- 2010 Named a “Laser Pioneer” for the 50th Anniversary of the Laser and LaserFest,
<http://www.laserfest.org/lasers/pioneers/johnson.cfm>
- 2002 Elected **President** of the Optical Society of America (OSA)
- 2000 Fellow, Institute of Electrical and Electronics Engineers (IEEE)
- 1997 Promoted to Distinguished Professor of Physics at NJIT
- 1996 Edward A. Bouchet Award of the American Physical Society (APS)
- 1996 Fellow, American Association for the Advancement of Science (AAAS)
- 1995 Fellow, American Physical Society (APS)
- 1994 Black Engineer of the Year Awards Conference – Special Recognition Award
- 1993 Fellow, African Scientific Institute (ASI)
- 1993 Distinguished Alumnus Award from Polytechnic University
- 1992 Charter Fellow, National Society of Black Physicists (NSBP)
- 1991 Fellow, Optical Society of America (OSA)
- 1989 AT&T Bell Laboratories Research Area Affirmative Action Award
- 1988 AT&T Bell Laboratories Distinguished Technical Staff Award for Sustained Achievement (Distinguished Member of Technical Staff)
- 1975 AT&T Bell Laboratories Cooperative Research Fellowship to pursue a Ph.D. in Physics
- 1975 Sigma Xi Undergraduate Research Award for Bachelor’s Thesis

Research Support – UMBC

- 2019-2022 \$480,000, “Deposition and Nonlinear Optical Properties of Transition Metal Nitride/Oxide Thin Films” NSF Division of Materials Research (DMR), Theodosia Gougousi (PI) and A. M. Johnson (Co-PI), NSF-DMR 1905305
- 2018-2021 \$498,372, NSF “Excellence in Research: Investigation of Enhancer-Free Photogenerated Singlet Oxygen,” collaboration with Delaware State University, NSF Proposal # 1831332, UMBC Subaward \$215,588, Co-PI
- 2006-2016 \$21,922,204, NSF Engineering Research Center (ERC), Mid-Infrared Technologies for Health and the Environment (MIRTHE), EEC-0540832, Co-PI/Deputy Director, UMBC portion \$3,833,029
- 2009-2011 \$1,000,000, NIST, “Ultrafast Dynamics for Next Generation Nanotechnology,” PI
- 2009-2011 \$131,717, NSF EAGER, American Physical Society, “Doubling Minority PhDs in Physics,” Co-PI/Steering Committee Member
- 2008-2010 \$99,100, Airforce Research Laboratory/IRFlex Corporation SBIR Phase II, “Mid-IR Fiber Lasers, Co-PI
- 2007-2008 \$15,602, Airforce Research Laboratory/IRFlex Corporation, “Novel Fiber Lasers for Direct Lasing in the Mid-IR,” Co-PI
- 2006-2009 \$268,000, NSF Major Research Instrumentation (MRI) Grant, ECS-0619548, “MRI: Development of Ultrafast Diagnostic Instrumentation for Mid-IR QCL’s,” PI

2005-2006 \$1,750,000, NASA, “Application of Quantum Entangled Photons,” PI
2003-2004 \$1,869,000, NASA, “CASPR Ultrafast Optics & Optoelectronics Laboratory,” PI
2003-2004 \$80,000, University of Maryland System, Wilson H. Elkins Professorship

Research Support – NJIT

2003-2007 \$1,700,000, NSF Informal Science Education Grant, “Hands-On Optics: Making an Impact with Light,” ESI-0307949, PI with Professional Society Partners OSA, SPIE and NOAO:
https://www.osa-opn.org/opn/media/Images/PDFs/5394_10737_53450.pdf?ext=.pdf
[This grant moved with me to UMBC]
1998-2000 \$54,000, NSF Instrumentation and Laboratory Improvement (ILI) Program, “Applied Optics Laboratories in an Undergraduate Optical Science and Engineering Program,” DUE-9850515, PI
1998 \$869,359, New Jersey Commission on Science and Technology, R&D Excellence Award, “Center for Ultrafast Laser Applications,” Co-PI
1996-1997 \$202,556, NSF, ECS-9601937, “Acquisition of Instrumentation for Research and Development of Bonded Ultra-Thin Silicon Wafers,” Co-PI
1996-1998 \$400,000, NSF Combined Research-Curriculum Development (CRCDD) Program, “Multidisciplinary Optical Science & Engineering Program,” EEC-9527491, PI

Ph.D. Students – UMBC

Paul Burkins, 12/2017, Physics, Chair
Hong Cai, 12/2014, Physics, Chair
Sheng Liu, 10/2011, Physics, Chair
Aboubakar Traore, 10/2011, Physics, Chair
Raymond Edziah, 2/2010, Physics, Chair
Robinson Kuis, 12/2009, Physics, Chair

Ph.D. Students – NJIT

Ferdinand Oguama, 8/2003, Physics, Chair
Elaine Lalanne, 5/2003, Physics, Chair
Hernando Garcia, 5/2000, Physics, Chair

Master’s Students – UMBC

Jared Dixon, 12/2014, CSEE, Chair
Sharisse Felton, 5/2009, CSEE, Chair
Akil Word-Daniels, 5/2009, CSEE, Chair
Shelly Watts, 7/2009, Physics, Chair
Francis Carter, 5/2007, Physics, Chair

Undergraduate Students

Elangeni Yabba (University of the Virgin Islands), UMBC Summer Biomedical Training Program, Howard Hughes Medical Institute, AND
Victor Torres, Jr. (University of Maryland College Park), NSF MIRTRE REU, Joint research project during Summer 2015, “Time-Resolved Pump-Probe Reflectivity of InGaAs,”

- each student presented a poster at UMBC and Princeton University, respectively, Advisor to both students
- Prosper Adangwa (UMBC, CSEE), NSF MIRTHER REU, Summer 2014, “Pump-Probe Reflectivity Study of Excited State Dynamics in Semiconductors for use in Quantum Cascade Devices,” poster presented at Princeton University, Advisor
- Christian Sias (UMBC, Physics), NSF MIRTHER REU, Summer 2013, “Examining the Photoluminescence and Band Gap Energy of Gallium Arsenide (GaAs),” presented poster at Princeton University, Advisor
- Victor Torres, Jr. (Atholton High School, Columbia, MD), NSF MIRTHER REU, Summer 2013, “Temperature Dependent Photoluminescence of GaAs,” presented poster at Princeton University, Advisor
- Chantelle Laguerre (Penn State University), NSF MIRTHER REU, Summer 2012, “IR Photoluminescence Measurements InGaAs/InAlAs,” presented poster at UMBC
- Tianna-Kaye Woodstock (Morgan State University), NSF MIRTHER REU, Summer 2012, “Measuring the Pulswidth of the Nd:YVO₄ Laser at 1.06 μ m,” presented poster at UMBC, Advisor
- Muhed Rana (UMBC, Physics), NSF MIRTHER REU, Summer 2012, “Construction and Calibration of Photoluminescence Experimental Setup Using n-doped InP,” presented poster at UMBC, Advisor
- Nathan Mendelsohn (University of Maryland College Park) and Tianna-Kaye Woodstock (Morgan State University), NSF MIRTHER REU, Summer 2011, “Time-Resolved Reflectivity Measurements in InAs/GaSb,” joint poster presented at Princeton University, Advisor to both students
- Corina Spănu (University of Virginia) and Chantelle Laguerre (Kenwood High School, Baltimore, MD), NSF MIRTHER REU, Summer 2011, “Near and Mid-IR Photoluminescence Measurement of InGaAsP and InAs/GaSb,” joint poster presented at Princeton University, Advisor to both students
- Chantelle Laguerre (Baltimore Polytechnic Institute, Baltimore, MD), NSF MIRTHER REU, Summer 2010, “Mid-IR Photoluminescence Measurements of Fe:CdMnTe Crystals,” joint poster presented at Rice University with Shelly Watts (UMBC MS’2009, Physics) and NSF MIRTHER RET (Friends School of Baltimore), Advisor to both students
- Benjamin Ecker (UMBC, Physics), NSF MIRTHER REU, Summer 2008, “Time-Resolved Reflectivity Measurements to Characterize Novel Semiconductor Materials,” presented at Johns Hopkins University, Advisor

PUBLICATIONS, PRESENTATIONS, AND CREATIVE ACHIEVEMENTS

Peer-Reviewed Publications

- R. Kuis, T. Gougousi, I. Basaldua, P. Burkins, J. Kropp, and A. M. Johnson, “Engineering of Large Third-Order Nonlinearities in Atomic Layer Deposition Grown Nitrogen-Enriched TiO₂,” ACS Photonics, **6**, 2966-2973 (2019).
- D. Kingsley, R. Kuis, R. Perez, I. Basaldua, P. Burkins, A. Marciano, and A. Johnson, “Oxygen-dependent laser inactivation of murine norovirus using visible light lasers,” Virology Journal **15**, 117-122 (2018)

P. Burkins, R. Kuis, I. Basaldua, A. M. Johnson, S. R. Swaminathan, D. Zhang, and S. Trivedi, "Thermally managed Z-scan methods investigation of the size-dependent nonlinearity of graphene oxide in various solvents," J. Opt. Soc. Am. **B33**, 2395 (2016)

R. G. Tull, D. L. Tull, S. S. Hester and A. M. Johnson, "Dark Matters: Metaphorical Black Holes that Affect Underrepresentation in Engineering," American Society for Engineering Education (ASEE). Paper (ID #17239) Annual Conference and Exposition, New Orleans, LA, June 2016

A. Traore, E. Lalanne, and A. M. Johnson, "Determination of the nonlinear refractive index of multimode silica fiber with a dual-line ultrashort pulse laser source by using the induced grating autocorrelation technique," Opt. Express **23**, 17127 (2015)

H. Cai, S. Liu, E. Lalanne, and A. M. Johnson, "Investigation of giant Kerr nonlinearity in quantum cascade lasers using mid-infrared femtosecond pulses," Appl. Phys. Lett. **106**, 051102 (2015)

H. Cai, S. Liu, E. Lalanne, D. Guo, X. Chen, X. Wang, F-S. Choa, and A. M. Johnson, "Femtosecond measurements of near-infrared pulse induced mid-infrared transmission modulation of quantum cascade lasers," Appl. Phys. Lett. **104**, 211101 (2014)

D. Guo, H. Cai, M. A. Talukder, X. Chen, A. M. Johnson, J. B. Khurgin and F-S. Choa, "Near-infrared induced optical quenching effects on mid-infrared quantum cascade lasers," Appl. Phys. Lett. **104**, 251102 (2014)

N. Manuchehrabadi, R. Toughiri, C. Bieberich, H. Cai, A. Attaluri, R. Edziah, E. Lalanne, A. M. Johnson, R. Ma and L. Zhu, "Treatment efficacy of laser photothermal therapy using gold nanorods," Int. J. Biomedical Engineering and Technology, **12 (2)**, 157 (2013)

A. M. Johnson, "Combatting Stereotype Threat," *Optics & Photonics News* **24**, 16 (May 2013)

N. Manuchehrabadi, A. Attaluri, H. Cai, R. Edziah, E. Lalanne, C. Bieberich, R. Ma, A. M. Johnson, L. Zhu, "MicroCT imaging and in vivo temperature elevations in implanted prostatic tumors in laser photothermal therapy using gold nanorods," J. of Nanotechnology in Engineering and Medicine **3**, 021003 (2012)

A. M. Johnson, "Minority Women Scientists: At the Culture-Gender Crossroads," *Optics & Photonics News* **23**, 15 (March 2012)

S. Liu, E. Lalanne, P. Q. Liu, X. Wang, C. F. Gmachl and A. M. Johnson, "Femtosecond Carrier Dynamics and Nonlinear Effects in Quantum Cascade Lasers," IEEE JSTQE (Invited Paper) **18**, 92 (2012)

S. Liu, H. Cai, E. Lalanne, P. Q. Liu, X. Wang, C. Gmachl, A. M. Johnson "Second harmonic generation in quantum cascade lasers pumped by femtosecond mid-infrared pulses", Appl. Phys. Lett. **99**, 122104 (2011)

R. Edziah, E. Lalanne, V. Torres, A. M. Johnson, and S. Trivedi, "Z-scan Measurements Using Ultrashort High-Repetition-Rate Lasers: How to Recognize the Parasitic Effects of Nonlinear Behavior of Fused –Silica Damage Sites," J. Opt. Soc. Am. **B28**, 1385 (2011)

R. Kuis, A. M. Johnson and S. Trivedi, "Measurement of the Effective Nonlinear and Dispersion Coefficients in Optical Fibers by the Induced Grating Autocorrelation Technique," Opt. Express **19**, 1755 (2011)

A. M. Johnson, S. M. Pompea, E. G. Arthurs, C. E. Walker, and R. T. Sparks, "Hands-on optics: an informal science education initiative," in Novel Optical Systems Design and Optimization X, edited by R. J. Koshel, G. G. Gregory, Proc. of SPIE **Vol. 6668**, 66680D (2007).

Member of the Committee on AMO 2010, Board on Physics and Astronomy, Division on Engineering and Physical Sciences, National Research Council of the National Academies, "Controlling the Quantum World – The Science of Atoms, Molecules, and Photons," The National Academies Press, Washington DC, Copyright 2007

F. A. Oguama, H. Garcia and A. M. Johnson, "Technique for Simultaneous Measurement of the Raman Coefficient and Nonlinear Refractive Index of Optical Fibers – Theory and Experiment," J. Opt. Soc. Am. **B 22**, 426 (2005)

F. A. Oguama, A. M. Johnson and W. A. Reed, "Measurement of the Nonlinear Coefficient of Telecommunication Fibers as a Function of Er, Al and Ge Doping Profiles Using the Photorefractive Beam-Coupling Technique," J. Opt. Soc. Am **B 22**, 1600 (2005).

H. Garcia, A. M. Johnson, F. A. Oguama and S. Trivedi, "Pump Induced Nonlinear Refractive Index Change in Erbium and Ytterbium Doped Fibers – Theory and Experiment," Opt. Lett. **30**, 1261 (2005)

F. A. Oguama, A. Tchouassi, A. M. Johnson and H. Garcia, "Numerical Modeling of the Induced Grating Autocorrelation for Studying Optical Fiber Nonlinearities in the Picosecond Regime," Appl. Phys. Lett. **86**, 091101 (2005)

H. Han, S. Vijayalakshmi, A. Lan, Z. Iqbal, H. Grebel, E. Lalanne and A. M. Johnson, "Linear and Nonlinear Optical Properties of Single-Wall Carbon Nanotubes within an Ordered Array of Nanosize Silica Spheres," Appl. Phys. Lett. **82**, 1458 (2003)

H. Garcia, A. M. Johnson, F. A. Oguama and S. Trivedi, "A New Approach to the Measurement of the Nonlinear Refractive Index of Short (< 25 m) Lengths of Silica and Erbium-doped Fibers," Opt. Lett. **28**, 1796 (2003)

A. J. Campillo and A. M. Johnson, "The Impact of Optics Letters on Science and Technology," *Optics & Photonics News* (Invited Paper), **13(7)**, pp. 34-42 (July 2002) – in celebration of the 25th Anniversary of *Optics Letters*

A. M. Johnson and C. B. Hitz, "Career Opportunities in Optics," *Physics Today*, **53(5)**, p. 25-29 (May 2000)

<http://physicstoday.scitation.org/doi/pdf/10.1063/1.883098>

H. Garcia, A. M. Johnson, and S. Trivedi, "Photorefractive Beam-Coupling Measurement of the Nonlinear Refractive Index of Semiconductor Films," *Phys. Stat. Sol. B* **220**, 47 (2000)

R. Barat, J. Federici, A. M. Johnson, H. Grebel, and T. Chang, "Optical Science and Engineering Curriculum at NJIT," *Journal of Engineering Education* **87**, 575 (1998)

N. M. Froberg, G. Raybon, A. M. Johnson, Y. K. Chen, T. Tanbun-Ek, R. A. Logan, A. Tate, A. M. Sargent, K. Wecht, and P. F. Sciortino, Jr., "Pulse Generation by Harmonic Modulation of an Integrated DBR Laser-Modulator," *Electron. Lett.* **30**, 650 (1994)

A. M. Levine, E. Özizmir, R. Trebino, C. C. Hayden, A. M. Johnson, and K. L. Tokuda, "Induced-Grating Autocorrelation of Ultrashort Pulses in a Slowly Responding Medium," *J. Opt. Soc. Am. B* **11**, 1609 (1994)

N. M. Froberg, G. Raybon, U. Koren, B. I. Miller, M. G. Young, M. Chien, G. T. Harvey, A. Gnauck, and A. M. Johnson, "Generation of a 2.5 Gbit/s Soliton Data Stream with an Integrated Laser-Modulator Transmitter," *Electron. Lett.* **30**, 1880 (1994)

G. Raybon, N. M. Froberg, U. Koren, B. I. Miller, M. G. Young, M. Chien, A. M. Johnson, P. B. Hansen, C. A. Burrus, J. J. Veselka, and A. H. Gnauck, "A 2.5 Gbit/s Return-to-Zero Integrated DBR Laser/Modulator Transmitter," *IEEE Photon. Technol. Lett.* **6**, 1330 (1994)

R. D. Feldman, T. D. Harris, J. E. Zucker, D. Lee, R. F. Austin, and A. M. Johnson, "Low Threshold, Room Temperature Pulsed and Quasi-Continuous Lasing in Optically Pumped CdZnTe/ZnTe Quantum Wells," *J. Electron. Mater.* **22**, 479 (1993)

R. D. Feldman, D. Lee, A. Partovi, R. P. Stanley, A. M. Johnson, J. E. Zucker, A. M. Glass, and J. Hegarty, "Growth, Optical and Optoelectronic Properties of CdZnTe/ZnTe Multiple Quantum Wells," *Critical Reviews in Solid State and Materials Sciences* **17**, 477 (1992)

P. C. Becker, D. Lee, A. M. Johnson, A. G. Prosser, R. D. Feldman, R. F. Austin, and R. E. Behringer, "Femtosecond Dynamics of Resonantly Excited Room Temperature Excitons in II-VI CdZnTe/ZnTe Quantum Wells," *Phys. Rev. Lett.* **68**, 1876 (1992)

D. Lee, A. M. Johnson, J. E. Zucker, C. A. Burrus, R. D. Feldman, and R. F. Austin, "High Temperature Quasi-Continuous Operation of II-VI Optically Pumped CdZnTe/ZnTe Multiple Quantum Well Lasers at 620 nm," *IEEE Photonics Tech. Lett.* **4**, 949 (1992)

P. C. Becker, D. Lee, M. Barros, A. M. Johnson, A. G. Prosser, R. D. Feldman, R. F. Austin, and R. E. Behringer, "Femtosecond Dynamic Exciton Bleaching in Room Temperature II-VI Quantum Wells," *IEEE J. Quantum Electron.* **QE-28**, 2535 (1992)

D. Lee, A. M. Johnson, J. E. Zucker, R. D. Feldman, and R. F. Austin, "Room Temperature Excitonic Absorption in CdZnTe/ZnTe Quantum Wells: Contributions to Exciton Linewidth," J. Appl. Phys. **69**, 6722 (1991)

A. Partovi, A. M. Glass, D. H. Olson, R. D. Feldman, R. F. Austin, D. Lee, A. M. Johnson, and D. A. B. Miller, "Electroabsorption in II-VI Multiple Quantum Wells," Appl. Phys. Lett. **58**, 334 (1991)

D. Lee, J. E. Zucker, A. M. Johnson, R. D. Feldman, and R. F. Austin, "Raman Scattering Resonant with Excitons in CdZnTe/ZnTe Multiple Quantum Wells," Appl. Phys. Lett. **59**, 75 (1991)

D. Lee, J. E. Zucker, M. D. Divino, R. F. Austin, R. D. Feldman, K. L. Jones, and A. M. Johnson, "Quantum Well Waveguide Intensity Modulator at Visible Wavelengths Using CdZnTe/ZnTe Quantum Wells," Appl. Phys. Lett. **59**, 1876 (1991)

R. S. Miranda, H. W. K. Tom, A. M. Johnson, T. J. Bridges, and G. D. Aumiller, "Using Time-Resolved IR Reflection and Transmission as a Probe of Carrier Dynamics in Semiconductors," Opt. Lett. **16**, 1859 (1991)

R. Trebino, C. C. Hayden, A. M. Johnson, W. M. Simpson, and A. M. Levine, "Chirp and Self-Phase Modulation in Induced-Grating Autocorrelation Measurements of Ultrashort Pulses," Opt. Lett. **15**, 1079 (1990)

D. Lee, J. E. Zucker, A. M. Johnson, R. D. Feldman, and R. F. Austin, "Room Temperature Excitonic Saturation in CdZnTe/ZnTe Quantum Wells," Appl. Phys. Lett. **57**, 1132 (1990)

J. Bokor, A. M. Johnson, W. M. Simpson, R. H. Storz, and P. R. Smith, "Coplanar Vacuum Photodiode for Measurement of Short-Wavelength Picosecond Pulses," in *OSA Proceedings on Picosecond Electronics and Optoelectronics*, Vol. 4, T. C. L. G. Sollner and D. M. Bloom, eds. (Optical Society of America, Washington, DC), p. 189 (1989)

U. Keller, J. A. Valdmanis, M. C. Nuss, and A. M. Johnson, "53 ps Pulses at 1.32 Micrometers From a Harmonic Modelocked Nd:YAG Laser," IEEE J. Quantum Electron. **QE-24**, 427 (1988)

R. D. Feldman, R. F. Austin, P. M. Bridenbaugh, A. M. Johnson, W. M. Simpson, B. A. Wilson, and C. E. Bonner, "Effects of Zn to Te Ratio on the Molecular Beam Epitaxial Growth of ZnTe on GaAs," J. Appl. Phys. **64**, 1191 (1988)

J. Bokor, A. M. Johnson, W. M. Simpson, R. H. Storz, and P. R. Smith, "Coplanar Vacuum Photodiode for Measurement of Short-Wavelength Picosecond Pulses," Appl. Phys. Lett. **53**, 2599 (1988)

A. M. Johnson, R. M. Lum, W. M. Simpson, and J. Klingert, "Picosecond OMVPE GaAs/SiO₂ Photoconductive Devices and Applications in Materials Characterization," IEEE

J. Quantum Electron. **QE-23**, 1180 (1987)

A. M. Johnson and W. M. Simpson, "Optically Biased Tunable Femtosecond Dye Laser and Spectral Windowing of the Compressed Second Harmonic of Nd:YAG," IEEE J. Quantum Electron. **QE-22**, 133 (1986)

J. Bokor, A. M. Johnson, R. H. Storz, and W. M. Simpson, "High-Speed Circuit Measurements Using Photoemission Sampling," Appl. Phys. Lett. **49**, 226 (1986)

R. H. Stolen and A. M. Johnson, "The Effect of Pulse Walkoff on Stimulated Raman Scattering in Fibers," IEEE J. Quantum Electron. **QE-22**, 2154 (1986)

J. Bokor, A. M. Johnson, R. H. Storz, and W. M. Simpson, "High-Speed Circuit Measurements Using Photoemission Sampling," *Ultrafast Phenomena V*, ed. by G. R. Fleming and A. E. Siegman (Springer-Verlag, Berlin), p. 123 (1986)

A. M. Johnson, R. H. Stolen, and W. M. Simpson, "The Observation of Chirped Stimulated Raman Scattered Light in Fibers," *Ultrafast Phenomena V*, ed. by G. R. Fleming and A. E. Siegman (Springer-Verlag, Berlin), p. 160 (1986)

A. M. Johnson and W. M. Simpson, "A Tunable Femtosecond Dye Laser Synchronously Pumped by the Compressed Second Harmonic of Nd:YAG," J. Opt. Soc. Am. **B 2**, 619 (1985)

A. M. Johnson and W. M. Simpson, "Tunable Femtosecond Synchronously Modelocked Dye Laser Pumped by the Compressed Second Harmonic of Nd:YAG," SPIE **553**, 52 (1985)

A. M. Johnson, D. W. Kisker, W. M. Simpson, and R. D. Feldman, "Picosecond Photoconductivity in Polycrystalline CdTe Films Prepared by UV Enhanced OMCVD," in *Picosecond Electronics and Optoelectronics*, G. Mourou, D. Bloom, and C. Lee, eds., (Springer-Verlag, New York), p. 188 (1985)

W. J. Tomlinson, R. H. Stolen, and A. M. Johnson, "Optical Wave Breaking of Pulses in Nonlinear Optical Fibers," Opt. Lett. **10**, 457 (1985)

A. M. Glass, P. F. Liao, A. M. Johnson, L. M. Humphrey, R. Lemons, D. H. Olson, and M. B. Stern, "Periodically Structured Amorphous Silicon Detectors with Improved Picosecond Responsivity," Appl. Phys. Lett. **44**, 77 (1984)

T. Miyoshi, P. K. Tien, R. J. Martin, D. M. Tennant, A. M. Johnson, and P. M. Downey, "Infrared Photodetection in Proton-Bombarded InP," Appl. Phys. Lett. **44**, 128 (1984)

A. M. Johnson, A. M. Glass, D. H. Olson, W. M. Simpson, and J. P. Harbison, "High Quantum Efficiency Amorphous Silicon Photodetectors With Picosecond Response Times," Appl. Phys. Lett. **44**, 450 (1984)

A. M. Johnson, R. H. Stolen, and W. M. Simpson, "80X Single-Stage Compression of Fre-

quency Doubled Nd:YAG Laser Pulses,” Appl. Phys. Lett. **44**, 729 (1984)

A. M. Glass, A. M. Johnson, D. H. Olson, W. M. Simpson, and A. A. Ballman, “Four-Wave Mixing in Semi-Insulating InP and GaAs Using The Photorefractive Effect,” Appl. Phys. Lett. **44**, 948 (1984)

A. M. Johnson, A. M. Glass, D. H. Olson, W. M. Simpson, and J. P. Harbison, “High Quantum Efficiency a-Si:H Picosecond Transit-Time Limited Schottky Barrier Photodetectors,” J. Non-Cryst. Solids **66**, 381 (1984)

A. M. Johnson, R. H. Stolen, and W. M. Simpson, “The Generation Of 0.41 Psec Pulses By The Single-Stage Compression Of Frequency Doubled Nd:YAG Laser Pulses,” *Ultrafast Phenomena IV*, ed. by D. H. Auston and K. B. Eiseenthal (Springer-Verlag, Berlin), p. 16 (1984)

A. M. Johnson, R. H. Stolen, and W. M. Simpson, “Compression of Laser Pulses,” *Optics News* **10(6)**, 42 (1984)

L. F. Johnson, H. J. Guggenheim, D. Bahnck, and A. M. Johnson, “Phonon-Terminated Laser Emission from Ni^{2+} Ions in KMgF_3 ,” Opt. Lett. **8**, 371 (1983)

A. M. Johnson and W. M. Simpson, “CW Modelocked Nd:YAG Pumped Subpicosecond Dye Lasers,” Opt. Lett. **8**, 554 (1983)

P. F. Liao, A. M. Glass, A. M. Johnson, D. H. Olson, L. M. Humphrey, and M. B. Stern, “Enhancement of Optical Detector Response via Microstructured Electrodes,” Proc. SPIE **439**, 197 (1983)

T. R. Harrison, A. M. Johnson, P. K. Tien, and A. H. Dayem, “ NiSi_2 -Si Infrared Schottky Photodetectors Grown by Molecular Beam Epitaxy (MBE),” Appl. Phys. Lett. **41**, 734 (1982)

P. R. Smith, D. H. Auston, A. M. Johnson, and W. M. Augustyniak, “Picosecond Photoconductivity in Radiation-Damaged Silicon-On-Sapphire Films,” Appl. Phys. Lett. **38**, 47 (1981)

P. R. Smith, D. H. Auston, and A. M. Johnson, “Thin Film Photoconductor Mounting Schemes for Picosecond Optical Detectors,” Rev. Sci. Instrum. **52**, 138 (1981)

A. M. Johnson, D. H. Auston, P. R. Smith, J. C. Bean, J. P. Harbison, and A. C. Adams, “Picosecond Time-Resolved Photoconductivity in Amorphous Silicon,” AIP Conference Proceedings, *Tetrahedrally Bonded Amorphous Semiconductors*, ed. by R. A. Street, D. K. Biegelsen, and J. C. Knights (*AIP No. 73*, New York), p. 248 (1981).

A. M. Johnson, D. H. Auston, P. R. Smith, J. C. Bean, J. P. Harbison, and A. C. Adams, “Picosecond Transient Photocurrents in Amorphous Silicon,” Phys. Rev. **B 23**, 6816 (1981)

A. M. Johnson, “Carrier Transport in Amorphous Silicon Utilizing Picosecond Photoconduc-

tivity,” Proceedings of the *VIII Annual Day of Scientific Lectures and Meeting of the National Society of Black Physicists*, ed. by H. B. White, Jr., Fermi National Accelerator Laboratory, Batavia, Illinois, p. 81 (1981)

D. H. Auston, P. R. Smith, A. M. Johnson, W. M. Augustyniak, J. C. Bean, and D. B. Fraser, “Recent Advances in Picosecond Optoelectronics,” *Picosecond Phenomena II*, ed. by R. Hochstrasser, W. Kaiser, and C. V. Shank (Springer-Verlag, Berlin), p. 71 (1980)

A. M. Johnson, D. H. Auston, P. R. Smith, J. C. Bean, J. P. Harbison, and D. Kaplan, “Picosecond Photoconductivity in Amorphous Silicon,” *Picosecond Phenomena II*, ed. by R. Hochstrasser, W. Kaiser, and C. V. Shank (Springer-Verlag, Berlin), p. 285 (1980)

D. H. Auston, A. M. Johnson, P. R. Smith, and J. C. Bean, “Picosecond Optoelectronic Detection, Sampling, and Correlation Measurements in Amorphous Semiconductors,” *Appl. Phys. Lett.* **37**, 371 (1980)

A. M. Johnson and D. H. Auston, “Microwave Switching by Picosecond Photoconductivity,” *IEEE J. Quantum Electron.* **QE-11**, 283 (1975)

Book Chapters

A. M. Johnson and C. V. Shank, “Pulse Compression in Single-Mode Fibers -- Picoseconds to Femtoseconds,” in **The Supercontinuum Laser Source**, ed. by R. R. Alfano (Springer-Verlag, New York), Chapter 10, pp. 399-449 (1989)

A. M. Johnson, “Picosecond Optoelectronic Measurement of Carrier Transport in Amorphous Silicon,” in **Semiconductor Processes Probed By Ultrafast Laser Spectroscopy**, ed. by R. R. Alfano (Academic Press, New York), Volume 2, Chapter 14, p. 3 (1984)

Patents – AT&T Bell Laboratories

Patent No. 4,933,542: “High Speed Photodetector Having Dual Transmission Line Geometry”

Patent No. 4,721,910: “High Speed Circuit Measurements Using Photoemission Sampling”

Patent No. 4,703,996: “Integrated Optical Device Having Integral Photodetector”

Patent No. 4,555,622: “Photodetector Having Semi-Insulating Material and a Contoured, Substantially Periodic Surface”

Plenary, Keynote, and Invited Presentations – UMBC

Invited: “Large Third-Order Nonlinearities in Atomic Layer Deposition Grown Nitrogen-Enriched TiO₂ Nanoscale Films,” University of Maryland College Park, Dept. of Materials Science & Engineering Colloquium, Committee on Diversity, Equity and Inclusion, March 26, 2021.

Invited: “Large Third-Order Nonlinearities in Atomic Layer Deposition Grown Nitrogen-Enriched TiO₂ Nanoscale Films,” 2020 IEEE Research and Applications of Photonics in Defense Conference (RAPID) Virtual Conference, 10-12 August 2020.

Invited: “A Career Encompassing Optical Physics, Diversity and Mentoring,” American Physical Society (APS) March Meeting. Invited Session L06, entitled, “Hidden Figures and Diversity Champions in Physics,” Los Angeles, CA, March 5-9, 2018.

Invited: “Report from the Bridge Program National Advisory Board (NAB),” APS Council of Representatives Meeting, Chicago, IL, November 10-11, 2017.

Plenary: “The 40+ Year Career of an African-American Physicist,” National Society of Black Physicists Conference, Atlanta, GA, November 3-5, 2017.

Plenary: “Preparing Students for Private Sector Employment,” APS-Graduate Education & Bridge Program Conference, College Park, MD, February 10-12, 2017

Plenary: “Reflections of an African-American Physicist,” Conference for Undergraduate Underrepresented Minorities in Physics (CU²MiP), NIST/Univ. of Maryland College Park (UMCP), October 7-9, 2016.

Invited: “Ultrafast Optical Characterization of Novel Mid-Infrared Nanoscale Structures,” Special Optics & Materials Physics Colloquium, Physics Department, New Jersey Institute of Technology (NJIT), September 30, 2016

Invited: “Ultrafast Optical Characterization of Novel Mid-Infrared Nanoscale Structures,” NSF ERC MIRTHE Summer Symposium, Princeton University, June 15-16, 2015

Invited: “Ultrafast Optical Characterization of Novel Mid-Infrared Nanoscale Structures,” National Society of Black Physicists (NSBP) Annual Meeting, Baltimore, MD, February 25-28, 2015

Plenary: “Role of APS in Promoting Diversity in Physics,” American Physical Society (APS) Bridge Program Summer Meeting, American Center for Physics (ACP), College Park, MD, June 25-27, 2014

Invited: “Ultrafast Optical Characterization of Novel Mid-Infrared Nanoscale Materials and Devices,” LAM 10 (African Laser Atomic Molecular & Optical Sciences Network) International Workshop on Optics, Photonics and Lasers in Science and Technology for Sustainable Development, Dakar, Senegal, West Africa, January 13-18, 2014

Invited: “Promoting Diversity in Physics – Personal Observations,” APS/AAPT (American Association of Physics Teachers) Graduate Education in Physics Conference, ACP, College Park, MD, January 31-February 2, 2013

Invited: “Barriers to Improving Diversity at ERCs and Ways to Overcome Them,” NSF Engineering Research Center (ERC) Annual Meeting, Bethesda, MD, November 13-16, 2012

Invited: “Ultrafast Optical Characterization of Novel Nanoscale Materials,” Dean’s Distinguished Lecture Series, Delaware State University, Departmental Lecture, November 8, 2012

Invited: “Photonics, Diversity and Mentoring – Over 30 Years of Experiences and Strategies of an African-American Physicist,” Dean’s Distinguished Lecture Series, Delaware State University, Public Lecture, November 8, 2012

Invited: “Femtosecond Mid-IR Spectroscopy of Quantum Cascade Lasers,” Institute for Ultrafast Spectroscopy and Lasers 30th Anniversary Symposium, CCNY (City College of New York), October 9, 2012

Tutorial: “Ultrafast Characterization of Novel Mid-IR Nanoscale Materials,” NSF ERC MIRTHER Summer Workshop held at UMBC, August 5-10, 2012

Keynote: “Femtosecond Mid-IR Spectroscopy of Quantum Cascade Lasers and Photonics, Diversity, Mentoring – A Nearly 40-Year Career of an African-American Physicist,” National Capital Section (NCS) – OSA Chapter, IEEE, OSA, SPIE Student Poster Competition in Optics & Photonics, University of Maryland College Park, April 20, 2012

Invited: “Ultrafast Optical Characterization of Novel Nanoscale Materials,” Sigma Xi Distinguished Lecture, Indiana University of Pennsylvania, April 12, 2012

Invited: “Photonics, Diversity and Mentoring – Over 3 Decades of Experiences and Strategies of an African-American Physicist,” Stanford University Optical Society hosted the IONS (International OSA Network of Students) Conference NA-3, October 15, 2011

Opening Session Keynote: “The 50th Anniversary of the Laser and its Significant Impact Upon our Technological Society,” High Impact Technology Exchange Conference (HI-TEC), Orlando, FL, July 26-29, 2010

Invited After Dinner Talk: “Undergraduate Research – The Start of a Career,” AAPT/APS SPIN-UP (Strategic Programs for Innovations in Undergraduate Physics) Workshop for Physics Department Chairs, Rutgers University, New Brunswick, NJ, June 4-6, 2010

Invited: “Carrier Dynamics Investigation of a Quantum Cascade Laser Using Femtosecond Mid-IR Pump-Probe Spectroscopy,” Laboratory for Physical Sciences (LPS), University of Maryland College Park, March 31, 2010

Invited: “Photonics, Diversity and Mentoring – 30 Years of Experiences and Strategies of an African-American Physicist,” March Meeting of the APS, Portland, Oregon, March 16, 2010

Invited: “Successful Minority PhD Producing Programs – Bell Laboratories and the Meyerhoff Scholarship Program at UMBC,” March Meeting of the APS, Pittsburgh, PA, March 16, 2009

Invited Panel: Elsa M. Garmire (1993 OSA President), Susan N. Houde-Walter (2005 OSA President), and A. M. Johnson (2002 OSA President), “Minorities and Women in OSA (MWOSA),” Luncheon and Panel Discussion at the Frontiers in Optics (FiO) Conference, Rochester, NY, October 22, 2008

Invited: “Photonics and Diversity: 30 Years of Experiences and Strategies of an African-American Physicist,” the first NSF Distinguished Lecture jointly sponsored by the Directorate of Education and Human Resources (EHR) and the Directorate for Math and Physical Sciences (MPS), at the Foundation, Arlington, VA, April 30, 2008

Invited: “An African-American Physicist – Over 30 Years of Experiences, Strategies, and Personal Accounts,” Army Research Laboratory (ARL) Black History Month Presentation, Adelphi Laboratory Center, Adelphi, MD, February 27, 2008

Invited: “Ultrafast Optical Characterization of Novel Materials,” National Society of Black and Hispanic Physicists (NSBP/NSHP) Annual Meeting, Washington, DC, February 20-23, 2008

Invited: “The Meyerhoff Scholars Program at UMBC,” AAPT Winter Meeting, Baltimore, MD, January 19-23, 2008

Keynote: “An African-American Physicist – Nearly 30 Years of Experiences, Strategies, and Personal Accounts,” NSF ADVANCE: Increasing the Participation and Advancement of Women in Academic Science and Engineering Careers – Rice University: Negotiating the Ideal Faculty Position, Houston, TX, October 14-16, 2007

Invited: “Materials for Mid-IR Quantum Cascade Lasers,” Princeton University Joint University-Industry Research Symposium, the Princeton Institute for the Science and Technology of Materials (PRISM), Princeton University, March 19-20, 2007

Invited: “Minorities in the Mix: If Not Now, When?” Conference on Minorities in Research Science, Baltimore, MD, September 15-17, 2005

Invited: “Applications of Ultrafast Optical Technology,” Conference of the National Society of Black Physicists & Black Physics Students and The National Society of Hispanic Physicists, Washington, DC, February 18-21, 2004

Invited: “Research Opportunities in Optics,” Conference of the National Society of Black Physicists & Black Physics Students and The National Society of Hispanic Physicists, Washington, DC, February 18-21, 2004

Invited: “Physics **CAREER** Awards at New Jersey Institute of Technology (NJIT)” **NSF** Mentoring & Networking Workshop for **CAREER** Awardees, NSF Headquarters, Arlington, Virginia, January 21-23, 2004. [Five **CAREER** Awards were granted to junior faculty during my 8-year term as NJIT Department Chair of Physics.]

Plenary, Keynote and Invited Presentations – NJIT and Bell Laboratories

Opening Session Keynote: “Pleasures of Being a Professor and Barriers to Overcome,” 10th Annual Compact for Faculty Diversity, Institute on Teaching & Mentoring, Miami, Florida, October 30-November 2, 2003

Invited: “The Role of Professional Societies in Student and Faculty Development,” 10th Annual Compact for Faculty Diversity, Institute on Teaching & Mentoring, Miami, Florida, October 30-November 2, 2003

Invited: “The Measurement of Optical Nonlinearities in Telecommunication Fibers – A New Approach,” APS April Meeting, Invited Session entitled *Precision Measurements for Industry*, Philadelphia, PA, April 5-8, 2003

Invited: Two, 1.5-hour invited lectures entitled, "Ultrafast Optical Phenomena" and "The Measurement of Optical Nonlinearities in Telecommunication Fibers -- A New Approach," VIII Jorge Andre Swieca Summer School on Quantum and Nonlinear Optics, Physics Institute of the State University of Campinas (UNICAMP), Campinas, Brazil, January 7-18, 2002

Plenary: "Ultrafast Optical Phenomena," Australian Conference on Optics, Lasers, and Spectroscopy 2001 (ACOLS 2001), University of Queensland, Brisbane, Australia, December 3-6, 2001

Invited: 1-hour lecture, "The Measurement of Optical Nonlinearities in Telecommunication Fibers -- A New Approach," 4th Edward Bouchet International Conference on Physics and High Technology, Cotonou, Benin, West Africa, August 6-10, 2001

Plenary: “Ultrafast Optical Phenomena,” **OSA Presidential & Plenary Talk** at the Annual Meeting of the **Mexican Academy of Optics**, Puebla City, Mexico, November 2000

Invited: 2-hour lecture, "Measurement of Nonlinearities in Silicon Nanoclusters and Telecommunication Fibers," International Centre for Theoretical Physics (ICTP), Winter College on Optics and Photonics, Miramare-Trieste, Italy, 7-25 February 2000

Invited: “Ultrafast Optical and Optoelectronic Phenomena in II-VI and III-V Semiconductor Multiple Quantum Wells,” **1996 APS Edward A. Bouchet Award Lecture**, March Meeting of the **APS**, St. Louis, Missouri, March 1996

Invited: “Picosecond Measurement of Carrier Escape Times in InGaAs Quantum Well Modulators,” University of Witwatersrand, Dept. of Physics, Johannesburg, South Africa, November 30, 1995

Invited: “An African-American Physicist – Experiences, Strategies, and Personal Accounts,” Foundation for Research Development (analog of the US NSF), Pretoria, South Africa, November 29, 1995

Invited: “Picosecond Measurement of Carrier Escape Times in InGaAs Quantum Well Modulators,” University of Cape Town, Dept. of Physics, Cape Town, South Africa, November 27, 1995

Invited: “Picosecond Measurement of Carrier Escape Times in InGaAs Quantum Well Modulators,” National Accelerator Centre, Faure, South Africa, November 24, 1995

Invited: “Picosecond Measurement of Carrier Escape Times in InGaAs Quantum Well Modulators,” University of Port Elizabeth, Dept. of Physics, Port Elizabeth, South Africa, November 20, 1995

Invited: “Ultrafast Optical Phenomena,” **Howard Hughes Foundation Lecture**, Rutgers University – Newark, NJ, February 21, 1995

Plenary: “Ultrafast Optical Phenomena,” Winter Meeting of the American Association of Physics Teachers (**AAPT**), Orlando, Florida, January 16, 1995

Invited: “Mentoring -- 20 Years of Personal Observations,” **OSA Annual Meeting**, Dallas, Texas, October 1994

Invited: “Femtosecond Exciton Dynamics of II-VI Semiconductor Multiple Quantum Wells,” **OSA & IEEE/LEOS** Quantum Optoelectronics Topical Meeting, Palm Springs, California, March 1993

Invited: “Femtosecond Exciton Dynamics of II-VI Semiconductor Multiple Quantum Wells,” March Meeting of the **APS**, Seattle, Washington, March 1993

Tutorial: “The Generation of Ultrashort Pulses of Light – Compression in Optical Fibers,” International Workshop on the *Physics & Modern Applications of Lasers*, University Cheikh Anta Diop, Dakar, Senegal, West Africa, May 22-28, 1991

Tutorial: “The Generation of Ultrashort Pulses of Light – Compression in Optical Fibers,” Summer School III, *Ultrafast & Super-Intense Laser Technology, Science & Applications*, Ontario Laser & Lightwave Research Centre, University of Toronto, Toronto, Canada, May 21-23, 1991.

Tutorial: “The Generation of Ultrashort Pulses of Light – Compression in Optical Fibers,” Winter College on *Ultrafast Phenomena*, International Centre for Theoretical Physics (**ICTP**), Trieste, Italy, February 18-22, 1991

Tutorial: “The Generation of Ultrashort Pulses of Light – Compression in Optical Fibers,” Training College on *Physics & Characterization of Lasers & Optical Fibers*, International Centre for Theoretical Physics (**ICTP**), Trieste, Italy, February 26 - March 2, 1990

Other Professional Presentations

SPIE Interview and Video of Anthony Johnson and Elaine Lalanne at the CASPR Ultrafast Optics & Optoelectronics Lab of UMBG during the SPIE 2012 Defense, Security + Sensing Conference, held 23-27 April 2012 in Baltimore, MD, SPIE Newsroom, Lasers & Sources, “Anthony Johnson: Center explores the mid-IR for new sensing capabilities”:

<http://spie.org/x91019.xml> DOI: 10.1117/2.3201210.07

During my 2002 term as **President** of the Optical Society of America (**OSA**), I prepared a monthly column for *Optics & Photonics News* entitled “*From the President*,” presenting my personal thoughts, views and updates about the OSA:

https://www.osa-opn.org/opn/media/Images/PDFs/1211_2173_12411.pdf?ext=.pdf -- Jan. 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1227_2195_12442.pdf?ext=.pdf -- Feb. 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1240_2216_12468.pdf?ext=.pdf -- March 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1266_2241_12521.pdf?ext=.pdf -- April 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1283_2258_12556.pdf?ext=.pdf -- May 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1210_2172_12409.pdf?ext=.pdf -- June 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1431_2546_14252.pdf?ext=.pdf -- July 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1528_2768_15131.pdf?ext=.pdf -- Aug. 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1625_2945_15790.pdf?ext=.pdf -- Sep. 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1687_3089_16432.pdf?ext=.pdf -- Oct. 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1772_3240_17157.pdf?ext=.pdf -- Nov. 2002

https://www.osa-opn.org/opn/media/Images/PDFs/1863_3431_18005.pdf?ext=.pdf -- Dec. 2002

SERVICE TO THE DEPARTMENT, UNIVERSITY, COMMUNITY, AND PROFESSION

Service to the Department

2020	Chair, Post Tenure Review Committee for Prof. Theodosia Gougousi (Physics)
2020	Chair, DP&TC for Prof. Zhibo Zhang (Physics)
2019	Member, Post Tenure Review Committee for Prof. Michael Hayden (Physics)
2018	Chair, Post Tenure Review Committee for Prof. Curtis Menyuk (CSEE)
2018	Member, Post Tenure Review Committee for Prof. Fow-Sen Choa (CSEE)
2018	Member, Post Tenure Review Committee for Prof. Chien-I Cheng (CSEE)
2016	Member, Post Tenure Review Committee for Prof. James Franson (Physics)
2015	Member, Departmental Promotion & Tenure Committee (DP&TC) for Prof. Todd Pittman (Physics)
2014	Chair, Post Tenure Review Committee for Prof. Yanhua Shih (Physics)
2013	Member, DP&TC for Prof. Vanderlei Martins (Physics)
2012	Member, DP&TC for Prof. Jane Turner (Physics)
2005-2007	Member, Research Council

Service to the University

2020-Present	Member, Center for the Advancement of Learning and Teaching (CALT) Task Force reporting to the Provost
2015	Member, Library Director Search Committee

- 2012 Member, University System of Maryland Nomination Committee for Regent's Professor
- 2011-Present Member, Executive Committee on Recruitment, Retention & Advancement of Underrepresented Minority (URM) Faculty reporting to the Provost

Service to the Community

- 2013-2014 Duncan Rheingans-Yoo, Oakland Mills High School, Gifted and Talented Program, Columbia, MD (son of Prof. Penny Rheingans, CSEE) interned with me 5 hours/week learning about photoluminescence in semiconductors – in 2015 he accepted early admission to Harvard
- 1/17/2013 Douglass Janssen, NSF MIRTHERET High School Teacher brought 28 science students from Greater Grace Christian Academy, Baltimore, MD to visit and tour the CASPR Lab
- 4/8/2010 Shelly Watts (UMBC Physics MS-2009) and currently Chair of the Science Program at Friends School of Baltimore High School, Baltimore, MD, brought 20 high school senior physics students and administrators to the CASPR Lab for a visit and tour
- 2000-2008 Member, Greater Freehold, NJ NAACP (National Association for the Advancement of Colored People), Branch No. 2363
- 1996-2003 Member, Freehold Township Human Rights Council
- 1995-2003 Member, Freehold Township School District Science Advisory Committee
- 7/1993 Judge (Physics and Engineering) for the Afro-Academic, Cultural, Technological and Scientific Olympics (ACT-SO) at the NAACP National Convention, Indianapolis, Indiana

Service to the Profession – American Institute of Physics (AIP)

- 2007-2019 OSA Representative to the Liaison Committee for Underrepresented Minorities (LCURM)
- 2002-2008 Member, Governing Board
- 1995-1997 Member, Advisory Committee of the Education and Employment Statistics Division
- 3/1994 Member, *Physics Today* roundtable, organized by Gloria Lubkin, Editor, "Physics Roundtable: Reinventing Our Future," *Physics Today*, 47(3) p.30

Service to the Profession – American Physical Society (APS)

- 2018-Present Distinguished Traveling Lecturer, APS Division of Laser Science (DLS)
- 2016-2018 Member, Nominating Committee
- 2015-2019 Chair, Bridge Program's National Advisory Board
<http://www.apsbridgeprogram.org/about/leadership.cfm>
- 2013-2014 Member, Executive Board
- 2012 Chair, Selection Committee for the **Edward A. Bouchet Award**
- 2011 Member, Selection Committee for the **Edward A. Bouchet Award**
- 2011-2014 Member, DLS (Division of Laser Science) Executive Committee and Representative to APS Council
- 2011-2014 Member, Publication Oversight Committee (POC)
- 2010-2019 Member, Steering Committee of the Minority Bridge Program

2008	Member, Search Committee for the Executive Officer (EO) – Kate Kirby became EO in 2009
2006-2008	Member, Nominating Committee
1997-1999	Member, Committee on Fellowship
1997	Member, Selection Committee for the Edward A. Bouchet Award
1996-1998	Member, Committee on Committees
1996-1998	Member, Fellowship Committee of the DLS
1996	Member, Committee on the Forum on Education
1996-1997	Member, Executive Board
1994-1997	General Councillor
1993-1995	Member, Executive Committee of the Laser Science Topical Group
1993-1994	Member, Selection Committee of the Visiting Minority Lectureship
1992-1993	Chair, Committee on Minorities in Physics
1991	Member, Committee on Minorities in Physics

Service to the Profession – Conference Program Committees

4/2016	Program Committee Member and Session Chair, Laser Technology for Defense and Security XII Conference of the SPIE (International Society for Optics and Photonics) Defense + Commercial Sensing Meeting, Baltimore, MD
4/2015	Program Committee Member and Session Chair, Laser Technology for Defense and Security XI Conference of the SPIE (International Society for Optics and Photonics) Defense, Security and Sensing Meeting, Baltimore, MD
4/2014	Program Committee Member and Session Chair, Laser Technology for Defense and Security X Conference of the SPIE Defense, Security and Sensing Meeting, Baltimore, MD
4/2013	Program Committee Member and Session Chair, Laser Technology for Defense and Security IX Conference of the SPIE Defense, Security and Sensing Meeting, Baltimore, MD
4/2012	Program Committee Member and Session Chair, Laser Technology for Defense and Security VIII Conference of the SPIE Defense, Security and Sensing Meeting, Baltimore, MD
4/2011	Program Committee Member and Session Chair, Laser Technology for Defense and Security VII Conference of the SPIE Defense, Security and Sensing Meeting, Orlando, FL
4/2010	Program Committee Member and Session Chair, Laser Technology for Defense and Security VI Conference of the SPIE Defense, Security and Sensing Meeting, Orlando, FL
5/2009	Advisory Committee/Program Committee, OPTOmism: Photonics for the Green Revolution, Santa Clara, CA
4/2009	Program Committee Member and Session Chair, Laser Technology for Defense and Security V Conference of the SPIE Defense, Security and Sensing Meeting, Orlando, FL
10/2003	Program Committee Member, ETOP '2003 (Education and Training in Optics and Photonics), Tucson, Arizona
2001-2002	Member, CLEO (Conference on Lasers and Electro-Optics) Program Subcommittee on <i>Ultrafast Optics and Electronics</i>

- 1999 Member, Advisory Committee, **1999 Gordon Research Conference on Nonlinear Optics and Lasers.**
- 1996 Chair, **CLEO '96** Steering Committee
- 1994 Member, **APS Interdisciplinary Laser Science Conference (ILS) Program Subcommittee on Nonlinear Optics and Ultrafast Phenomena**
- 1994 Organized and Chaired the Joint **ILS/OSA Symposium on Ultrashort Pulse Solid-State Lasers, OSA/ILS Annual Meeting**
- 1994 Member, Program Committee of the **Ninth International Conference on Ultrafast Phenomena**, Dana Point
- 1994 Organized and Chaired the Symposium on *Minority Researchers -- at the Forefront* at the **March Meeting** of the **APS**
- 1994 Member, Program Committee of **Nonlinear Optics '94: Materials, Fundamentals, and Applications**, Maui, Hawaii
- 1993-2004 Member, **IEEE LEOS Annual Meeting Subcommittee on Ultrafast Optics and Electronics**
- 1993 Member, Program Committee of the Eleventh International Conference on Laser Spectroscopy (**ELICOLS '93**)
- 1993 Organized and Chaired the Symposium on *Research at Minority Institutions* at the Joint **April Meeting** of the **APS** and **AAPT**
- 9/1993 Member, Steering/Organizing Committee for the Inaugural Forum and Open House for the **Research Center for Optical Physics** at Hampton University
- 1993 Steering/Organizing Committee Member, American Association of Physics Teachers (AAPT), **Topical Conference on Recruitment and Retention of Minorities in Physics**
- 1992-1994 **CLEO Steering Committee Liaison to the Joint Council on Quantum Electronics Conference General Co-Chair** of **CLEO '92**, Anaheim, California
- 1992 **Conference General Co-Chair** of **CLEO '92**, Anaheim, California
- 1991-1994 Member, **CLEO Steering Committee**
- 1991 Member-at-Large **CLEO '91** and **CLEO/IQEC Technical Program Liaison**
- 1990 **Conference Program Co-Chair** of **CLEO '90**, Anaheim, California
- 8/1990 Member, Executive Council and Technical Program Committee of the **Second Edward Bouchet International Conference on Physics and Technology**, University of Ghana, Accra, Ghana, West Africa
- 4/1989 Chair, **National Society of Black Physicists Annual Meeting**, held at AT&T Bell Laboratories, Holmdel, NJ
- 1988 Organized and Chaired Symposium on *Ultrashort Nonlinear Pulse Propagation in Optical Fibers*, **OSA Annual Meeting**
- 6/1988 Member, Program Committee of the **First Edward Bouchet International Conference on Physics and Technology**, International Centre for Theoretical Physics (ICTP), Trieste, Italy
- 1985-1988 Member, Program Committee of the **OSA Annual Meeting**
- 1985 Organized and Chaired Symposium on *Ultrashort Pulses in Optical Fibers*, **OSA Annual Meeting**

Service to the Profession – Department of Energy (DOE)

- 4/2008 Member, Basic Energy Sciences Advisory Committee (**BESAC**), Committee of Visitors for the Chemical Sciences, Geosciences, and Biosciences Division, Germantown, MD
- 1999-2008 Member, Basic Energy Sciences Advisory Committee (**BESAC**)
- 9/1997 Member, Workshop on Atomic, Molecular, and Optical Physics – Panel on “*Interactions of Atoms and Molecules with Photons – High Field*”

Service to the Profession – Editorial Advisory Boards

- 2018-2019 Member, Search Committee for a new Editor-in-Chief of the **OSA Journal *Advances in Optics and Photonics (AOP)***
- 2011-2018 Founding Member, Editorial Board of **APS** open access journal ***Physical Review X (PRX)*** <http://journals.aps.org/prx/staff>
- 2011-2016 Co-Contributing Editor, **OSA Optics & Photonics News (OPN)** column, “Reflections in Diversity”
- 1996-2001 Member, **OSA** Board of Editors
- 1995-2001 Editor-in-Chief of the **OSA** journal ***Optics Letters***
- 5/1992 Guest Editor, Special Issue of **OSA Optics & Photonics News** on *Ultrafast Optics & Optoelectronics*
- 1990-Present Member, ***Laser Focus World*** Editorial Advisory Committee
- 1989-1995 Topical Editor, *Ultrafast Optical Phenomena* of the **OSA** journal ***Optics Letters***
- 2/1988 Guest Editor, Special Issue of **IEEE Journal of Quantum Electronics** on *Ultrafast Optics and Electronics*, vol. **QE-24**
- 1989-1991 Member, ***Optics & Photonics News*** Editorial Advisory Committee
- 1989-1994 Member, ***Journal of the National Technical Association (NTA) Science and Technology*** Advisory Board

Service to the Profession – IEEE Lasers & Electro-Optics Society (LEOS) – IEEE Photonics Society (IPS)

- 2021- Member, 2021 **IEEE Technical Activities Board (TAB) Committee on Diversity and Inclusion (CDI)**
- 2016-2019 Member, **IEEE** Corporate Innovation Award Committee
- 2009-2010 Chair, **IEEE Photonics Society, Fellows Evaluation Committee**
- 2005-2008 Member, **IEEE LEOS, Fellows Evaluation Committee**
- 1996 Chair, **IEEE LEOS** Committee of the **William Streifer Scientific Achievement Award**
- 1995 Member, **IEEE Quantum Electronics** and **IEEE LEOS Distinguished Lecturer Awards Committees**
- 1993-1995 Member, **IEEE LEOS** Board of Governors
- 1991-1993 Chair, **IEEE LEOS Ultrafast Optics and Electronics** Technical Subcommittee
- 1989-1990 Member, **IEEE/LEOS Ultrafast Optics and Electronics** Technical Subcommittee

Service to the Profession – National Research Council (NRC)

- 5/2020 Member, **National Academies** Panel on Materials and Manufacturing Sciences at the Army Research Laboratory (ARL)
- 2013-2015 Member, **NRC** Committee on Atomic, Molecular and Optical Science (**CAMOS**)

- 2009-2014 Member-at-Large, **National Academies** U.S. Liaison Committee for the International Union of Pure and Applied Physics (**IUPAP**)
- 2005-2007 Member, **NRC** Board on Assessment of **NIST** Programs, *Measurement and Assessment Laboratories*
- 2005-2006 Member, Committee on **AMO2010: Atomic, Molecular, and Optical Science** operating under the auspices of the Board on Physics and Astronomy (**BPA**) of the NRC's Division of Engineering and Physical Sciences
- 3/2001 Member, Physical Sciences Panel for the NRC's Associateship Programs Review
- 1996-1999 Member, Committee on Atomic, Molecular, and Optical Sciences (**CAMOS**), operating under the auspices of the Board on Physics and Astronomy (**BPA**) of the **NRC's** Commission on Physical Sciences, Mathematics, and Applications
- 1993-1995 Member, **NRC** Board on Assessment of the National Institute of Standards and Technology (**NIST**) Programs, *Panel for Physics*

Service to the Profession – National Science Foundation (NSF)

- 6/2020 Member, **NSF Science & Technology Center (STC)** External Advisory Committee for the STC on Real-Time Functional Imaging (**STROBE**), with lead institution University of Colorado at Boulder and PI Margaret M. Murnane
- 3/2015 Member, **NSF ECCS-ELECT, PHOTONICS & MAG DEVICE** Panel – Lasers & Detectors, Arlington, VA
- 11/2011 Member, **NSF Site Visit and Review, Partnership for Research and Education in Materials (PREM)**, New Mexico Highlands University
- 8/2010 Member, **NSF Physics Frontiers Center** Third –Year Site Visit to the Joint Quantum Institute (**JQI**), University of Maryland College Park
- 2006-2016 Deputy Director **NSF Engineering Research Center (ERC) MIRTHE** (Mid-Infrared Technologies for Health and the Environment) centered at Princeton University -- <http://www.mirthecenter.org>
- 2003 Member, **NSF Engineering Research Centers (ERC)** Panel and Site Visit Team -- meetings and site visits cover the period January 22-23 through April 22-25
- 1/1997 Panel Review Member for **NSF CAREER Awards** in the Division of Materials Physics -- Condensed Matter Physics: Semiconductors
- 5/1996 Member, **NSF Special Emphasis Panel** to review the Atomic, Molecular, Optical, and Plasma Physics program in the Physics Division
- 5/1996 Panel Review Member for **NSF Academic Research Infrastructure Instrumentation (ARI)** proposals for the Division of Materials Research
- 5/1994 Member, **NSF Workshop** entitled: **Optical Science and Engineering: New Directions and Opportunities in Research and Education** -- Member of the *Fundamental Optical Interactions* Subcommittee
- 7/1994 Member, **NSF Triennial Physics Division Oversight Review** -- the **Committee of Visitors** -- Member of the *Atomic, Molecular, and Optical Physics (AMO)* Subcommittee

Service to the Profession – National Conference of Black Physics Students (NCBPS)

- 1993-2004 Served as an invited speaker, workshop organizer, session chair, fund raiser, and program committee member

Service to the Profession – National Society of Black Physicists (NSBP)

- 1993-Present Served as an invited speaker, workshop organizer, session chair, fund raiser, program committee member and advisor.
- 2006-2011 Judge along with Prof. Peter Delfyett (University of Central Florida, CREOL) for the **OSA/SPIE** Best Poster Awards in Optics & Photonics at the Joint Meeting of the **NSBP** and the National Society of Hispanic Physicists (**NSHP**) -- \$400 First Prizes for Best Undergraduate and Graduate Posters; and \$200 Second Prizes for runner up Undergraduate and Graduate Posters; as well as Student Memberships in **OSA** and **SPIE**
- 1992-2000 Chair, **NSBP** Nominations and Screening Committee
- 4/1989 Chair, **NSBP** Annual Meeting, April 5-7, 1989, held at AT&T Bell Laboratories, Holmdel, NJ.

Service to the Profession – Optical Society of America (OSA)

- 2020-2021 Member, **OSA** Diversity, Equity and Inclusion Rapid Action Committee (DEI RAC)
- 2017-2019 Member, The Frederic Ives Medal/Jarus Quinn Prize Committee – the highest award of the **OSA**
- 2007-2019 **OSA** Representative to the **AIP** Liaison Committee for Underrepresented Minorities (**LCURM**)
- 2005 Member, **OSA** 2005 **C. E. K. Mees Medal** Committee
- 2005 Past Chair, **OSA** Nominating Committee
- 2004 Chair, **OSA** Nominating Committee
- 2004-2006 Member, **OSA** Audit Committee
- 2003-Present Founding Member and **OSA** Representative to the **TSOSA** (Trieste System Optical Sciences and Applications) International Advisory Group which meets annually (February) during the **ICTP** (International Centre for Theoretical Physics) Winter School on Optics in Trieste, Italy – fosters optics and photonics education and research to developing nations
- 2003 Member, 2003 **OSA** Nominating Committee
- 2002 **President** of the **OSA**
- 2002-Present **OSA** Presidential Advisory Committee (**PAC**)
- 2000-2003 Member, **OSA** Board of Directors
- 1996-2001 Member, **OSA** Board of Editors
- 1995-1997 Member, **OSA/Materials Research Society** Congressional Fellow Selection Committee
- 1994-1998 Co-Chair, **OSA** Committee on Women and Minorities in Optics
- 1994 Member, **OSA** Education Council
- 1994 Member, **OSA** Nominating Committee (1994)
- 1993-1995 Member, **OSA** Board of Directors
- 1990 Chair, **OSA R. W. Wood Prize** Committee
- 1989 Member, **OSA R. W. Wood Prize** Committee
- 1988-1993 Member and Co-Founder, **OSA** Ad Hoc Committee on Women and Minorities in Optics

1986-1987 Member, **OSA** Technical Council and Chair of the *Ultrafast Optical Phenomena* Technical Group

Service to the Profession – Technical Advisory Boards

5/2020 Member, External Review Team for the Institute of Optics, University of Rochester

2018-2021 Member, Advisory Council for the Princeton Institute for the Science and Technology of Materials (**PRISM**) at Princeton University

2007-2018 Member, External Advisory Board of the **NSF** Advanced Technological Education (**ATE**) funded OP-TEC, the National Center for Optics and Photonics Education: <http://op-tec.org>

2006-2017 Member, External Advisory Committee for the **NSF** Center for Research Excellence in Science and Technology (**CREST**) Center of Research and Education in Optical Sciences and Applications (**CREOSA**) at Delaware State University (an HBCU) in Dover, DE

2006-2011 Member, External Advisory Committee, **NSF** Partnership for Research and Education in Materials (**PREM**): Partnership for Photonic Metamaterials at Norfolk State University (an HCBU) in Norfolk, VA

2003-Present Member, representing the Optical Society of America (**OSA**) of the **TSOSA** (Trieste System Optical Sciences and Applications) Advisory Group which meets annually during the ICTP (International Centre for Theoretical Physics) Winter School on Optics in Trieste, Italy

1999-2006 Member, Planning and Advisory Committee, Norfolk State University (Norfolk, VA) **NSF** sponsored Center for Photonic Materials Research

1996-1998 Member, **NSF** External Advisory Committee for Integrated Core Curriculum for Mathematics, Physics, and Chemistry at Hunter College -- project under direction from Dr. Robert Marino, Chair Dept. of Physics, Hunter College

1996-1997 Member, **NSF**, National Visiting Committee for the Course and Curriculum Development Project, “Activity Based Physics: Curricula, Computer Tools, and Apparatus for Introductory Physics Courses” -- project under direction of Principal Investigator Dr. Priscilla Laws, Dickinson College

1994-1998 Member, Technical Advisory Board of Alabama A&M University’s Center for *Nonlinear Optics and Materials* -- an **NSF** Minority Research Center of Excellence (MRCE)

1992-1998 Member, External Advisory Board of the University of Michigan’s Center for *Ultrafast Optical Science* -- an **NSF** Science and Technology Center (**STC**)

1990-1995 Member, US Department of Energy (**DOE**), Jackson State University (JSU)/Lawrence Berkeley Laboratory/Ana G. Mendez Educational Foundation Consortium Advisory Committee

Service to the Profession – Other Professional Service

2014-2016 Member, Steering Committee of the International Year of Light and Light-based Technologies (IYL2015) <http://www.light2015.org/Home.html>

- 1993-1995 Member, Discipline Advisory Committee for **Fulbright Scholar Awards** in Physics for the Council for International Exchange of Scholars
- 1991-Present International Coordinator (USA), African Laser Atomic and Molecular Sciences Network [**LAM Network**] [Dr. A. Wague, President, **LAM Network**, Univ. of Cheikh Anta Diop, Dakar, Senegal, West Africa]
- 1988-Present Member, Executive Council, **The Edward A. Bouchet—ICTP Institute** [ICTP, International Centre for Theoretical Physics, Trieste, Italy]
<http://ebasi.org>

Courses Taught at UMBC

CMPE 330 Spring 2016 Electromagnetic Waves & Transmission

PHYS 609 Fall 2016 Modern Optics

PHYS 609 Fall 2017 Modern Optics

ENEE 788 Spring 2018 Topics in Electrophysics and Photonics: Ultrafast Optics & Applications

PHYS 609 Fall 2018 Modern Optics

CMPE 306 Fall 2018 Introductory Circuit Theory

CMPE 306 Spring 2019 Introductory Circuit Theory

PHYS 609 Fall 2020 Modern Optics (online)

CMPE 306 Fall 2020 Introductory Circuit Theory (online)

ENEE 684/CMPE 491 Spring 2021 Introduction to Photonics (online)