

CURRICULUM VITAE

WENDELL TALBOT HILL, III

8/12/2015

EDUCATION

University of California, Irvine	B.A. Physics	June 1974
Stanford University	M.S. Physics	June 1976
Stanford University	Ph. D. Physics	August 1980

EXPERIENCE IN HIGHER EDUCATION

Stanford University, Physics	Graduate Research Assistant	1975-1980
University of Maryland, Institute for Physical Science & Technology (IPST)	Assistant Research Scientist	1982-1986
University of Maryland, IPST	Assistant Professor	1986-1990
Université de Paris, Orsay	Visiting Professor	June 1989
University of Maryland, IPST	Associate Professor	1990-1996
University of Colorado, JILA (Formerly the Joint Institute for Astrophysics)	Visiting Fellow (Sabbatical)	1992-1993
University of Maryland, IPST	Professor	1996-present
University of Maryland, Laboratory for Atomic, Molecular & Optical Sci and Eng	Director	1999-2002
University of Maryland, Physics	Affiliate Professor	2002-present
University of Maryland, Joint Quantum Institute	Fellow	2006-present

EXPERIENCE NOT IN HIGHER EDUCATION

National Institute of Standards & Technology, (NIST) Gaithersburg, MD	NRC Postdoc	1980-1982
NIST, Gaithersburg, MD	Visiting Scientist	1982-1987 2005-present
Instituto Venezolano de Investigaciones Cientificas, Caracas, Venezuela	Visiting Scholar	January 1983
Board of Directors, Institute for Advanced Scientific Studies, Lincoln University	Member	1995-1997
Lawrence Livermore National Labs	Guest Worker	2006-present
National Science Foundation (NSF), Atomic Molecular and Optical Physics (AMO) Program	Program Director (Rotator)	2010-2012

HONORS AND AWARDS

IBM Graduate Fellowship	Stanford University	1974-1975
NRC Postdoctoral Fellowship	NIST, Gaithersburg, MD	1980-1982
NSF Presidential Young Investigator	National Science Foundation	1985-1990
Cited in Who's Who Registry	University of Maryland	1994
Fellow of the APS (DAMOP)	American Physical Society	1999
Sigma Xi Distinguished Lecturer	Society of Sigma Xi	2001-2002
Fellow of NSBP	National Society of Black Physicists	2006
2010 Distinguished Alumni Scholar	Stanford University	2010
Profiled by the HistoryMakers http://www.thehistorymakers.com/biography/wendell-hill , archived at the Library of Congress	HistoryMakers Science Maker	2012

PROFESSIONAL ACTIVITIESA. Societies1. Memberships

- American Physical Society (APS).
 - Division of Atomic, Molecular and Optical Physics (DAMOP).
 - Division of Laser Science (DLS).
- National Society of Black Physicists.
 - Atomic, Molecular and Optical Physics Technical Group.
- Optical Society of America (OSA).
 - Optical Cooling and Trapping Technical Group.
 - Ultrafast Optical Phenomena Technical Group.
 - Short Wavelength and High Field Technology Technical Group.
 - Quantum Optical Science and Technology Technical Group.
 - Fundamental Laser Science Technical Group.

2. Committees

Member, Committee on Atomic, Molecular, and Optical Sciences (CAMOS).	1993-2001
Chair, Optical Physics Technical Group, OSA.	1994-1995
Member, Committee on Minorities in Physics, APS.	1994-1996
Member, Executive Committee of Division of Laser Science, APS (Elected).	1994-1997
Vice-Chair, Committee on Atomic, Molecular, and Optical Sciences (CAMOS).	1995-1996
Chair, Committee on Atomic, Molecular, and Optical Sciences (CAMOS).	1996-1999
Member, Max Born Award Committee, OSA	1997-1999

Chair, Max Born Award Committee, OSA	1997
Member, DAMOP Best Thesis Committee, APS	1997-1999
Vice-Chair, FAMOS Update Committee	1999-2001
Member, Frederic Ives Medal/Jarus W. Quinn Medal Committee, OSA	2001-2002
Member, DAMOP Nomination Committee	2002-2004
Chair, DAMOP Nomination Committee	2003-2004 2012-
Member of Executive Board (Technical Executive Officer, Elected) National Society of Black Physicists	2004-2008
Member, The National Task Force on High Energy Density Physics, The charge – to develop a science driven roadmap that itemizes the major components of a National High Energy Density Physics Program	2004
General Councillor, APS (Elected at Large) Elected Member of Executive Board (2008-2009)	2006-2009
Member, CLEO/QELS/PhAST Steering Committee, representing the APS	2005-2011
Member, Joint Council on Quantum Electronics (JCQE), representing the APS	2005-2011
Member, International Council on Quantum Electronics, representing the APS	2005-2011
Member, Division of Chemical Physics Nomination Committee, APS	2007
Member, Prize and Award Committee, APS	2007-2009
Chair, Prize and Award Committee, APS	2008
Member, Committee on Committees, APS	2008-2010
Member, APS Bridge Program Steering Committee	2009-
Member, Scientific and Technical Advisory Committee (CACT), of the Centro de Laseres Pulsados (CLPU), Salamanca, Spain	2014-2017
Vice Chair, Mid-Atlantic Section of the APS (Elected) Chair Elect (2016), Chair (2017) and Past Chair (2018)	2015

B. Conferences and Symposia

1. Program Committees

QELS-1989, Laser Spectroscopy Subcommittee.
 1994-OSA Annual Meeting.
 1994-ILS Annual Meeting.
 QELS-1995, Chair, Laser Spectroscopy Subcommittee.
 1995-OSA Annual Meeting.
 1996-OSA Annual Meeting.
 1997 Spring Meeting of the APS

Fundamental Problems in Quantum Theory Workshop, Aug 4-7, 1997 University of Maryland, Baltimore County.

DAMOP Sessioning Committee, 2000, 2013, 2014.

DAMOP Program Committee, 2011 - 2014.

Program Chair Joint Annual Meetings of National Society of Black Physics and the National Society of Hispanic Physicists, February 17-19, 2005, Orlando, FL.

International Organizing Committee Member, International Symposium on Ultrafast Intense Laser Science, 2005-present

Program Chair Joint Annual Meetings of National Society of Black Physics and the National Society of Hispanic Physicists, February 15-18, 2006, San Jose, CA.

Program Chair Joint Annual Meetings of National Society of Black Physics and the National Society of Hispanic Physicists, February 21-24, 2007, Boston, MA

Program Chair Joint Annual Meetings of National Society of Black Physics and the National Society of Hispanic Physicists, February 20-23, 2008, Washington, DC

LAM 9 International Workshop and EBASI 7 Conference International Advisory Committee, November 9 – 14, 2009, Dakar Senegal

Program Co-Chair, International Symposium on Ultrafast Intense Laser Science, December 9 – 13, 2010, Maui, HI.

Program Co-Chair, International Symposium on Ultrafast Intense Laser Science, December 9 – 14, 2015, Kauai, HI.

2. Symposia

Organizer and Presider, Symposium on "Small Molecules in Intense Laser Fields," 1989 Spring Meeting of the APS, May 1-5, 1989.

Presider, Session on "Multiphoton Processes in Atoms and Molecules," QELS-89, Baltimore, MD, April 24-28, 1989.

Presider, Session on "Interactions of Molecules and Lasers at High Intensities," 6th ILS Conference, Minneapolis, MN, September 17-21, 1990.

Discussion Leader, 1992 Multiphoton Processes Gordon Conference, Session on "Molecules in Intense Fields," Colby Sawyer College, New London, NH, June 7-12, 1992.

Organizer and Presider, Symposium on "High Field Laser-Matter Physics: Molecules," OSA Annual Meeting, Dallas, TX, October 3-7, 1994.

Presider, Session on "Coherent Control of Atomic and Molecular Dynamics," QELS-95, Baltimore, MD, May 21-26, 1995.

Discussion Leader, Atomic Physics Gordon Conference, Session on "Atoms in Intense Fields," Brewster Academy, Wolfeboro, NH, July 2-7, 1995.

Organizer, Symposium on "Photoion and Photoelectron Imaging," 1996 OSA Annual Meeting, Rochester, NY, October 20-25, 1996.

Organizer, Symposium on "Optical Physics," Annual Meeting of National Society of Black Physics, February 17-19, 2005, Orlando, FL.

Organizer, Symposium on "Careers in Optics," Annual Meeting of National Society of Black Physicists, Orlando, FL, February 17-19, 2005.

Presider, Session on "Laser Cooling and Atom Optics," 2005 CLEO/QELS (Conference on Lasers and Electro-Optics/Quantum Electronics and Laser Science Conference), Baltimore, Maryland, May 24 – 26, 2005

Discussion Leader, International Symposium on Ultrafast Intense Laser Science 4 (ISUILS4), Session on "Imaging and related topics," Kailua-Kona, HI, December 10 – 14, 2005.

Organizer, Tutorial Session on "Physics Sub-Fields," Joint Annual Meeting of the National Society of Black Physicists and the National Society of Hispanic Physicists, Boston, MA, February 21-24, 2007.

Organizer, Session on "Graphene interacting with intense laser fields," International Symposium on Ultrafast Intense Laser Science 2014 (ISUILS13), Jodhpur, India, October 5 – 10, 2014.

Panel Member, Round Table Discussion on high intensity Laser physics beyond particle acceleration [other panelists J. J. G. Cadenas (Universidad de Valencia, Valencia, Spain), D. Tommasini (Universidad de Vigo, Ourense, Spain) and A. Peralta (CLPU)] at the IV Users Meeting of the CLPU (Centro de Lasers Pulsados) Salamanca, Spain, December 2-3, 2014.

C. Service

1. Scientific

Reviewer for Physical Review Letters, Physical Review A, Journal of Physics B, Applied Optics and Journal of the Optical Society of America. (on going)

Proposal Reviewer, NSF, DOE, NASA as well as various universities and corporations that issue small grants. (on going)

Proposal Review Panelist, NSF (1986; 1988; 1989; 1994; 1995; 1996; 2002, Math Science Partnership w/ Dept Ed; 2004, AMO Program).

Program Review Panelist, NSF (1989).

NSF Science and Technology Center Site Visit Team Chair, NSF (1999)

NSF Center Site Visit Team (Alabama A&M, 1993; Clark-Alanta Univ, 1996; MIT STC, 1999; MIT Phys. Frontier Center [CUA], 2003).

Reverse Site Visit Panelist, NSF (Alabama A&M AMO Center, 1991; Hampton Univ Nuclear Physics Center, 1993).

Site Visit Team Member to New Mexico State University for APS Committee on Minorities (Feb. 28-29, 1995).

NSF Committee of Visitors (COV) Physics program (1997).

Panelist, Workshop on Atomic, Molecular and Optical Physics, Office of Basic Energy Sciences, DOE; to develop new directions, connections and missions for AMO Physics (1997).

Agency (NSF April 7, 2003, DOE) Briefing on the Science and Application of Ultrafast and Ultraintense Lasers

Panelist, AMO Program, NSF, January 7-9, 2004.

Panelist, IGERT Panel, NSF, July 15-16, 2004

Member, FOCUS (Frontiers in Optical Coherent and Ultrafast Science) External Advisory Board, NSF Center at the Universities of Michigan and Texas, 2005 – 2006

Site Visit Team Member, NSF (JILA, University of Colorado), Nov. 30 and Dec. 1, 2005

Reviewer, National Academy of Sciences AMO 2010 Interim Report, Oct 2005.

Reviewer, National Academy of Sciences AMO 2010 Final Report, April 2006.

Panelist, AMO Program, NSF, January 3-5, 2007.

Councillor (elected at large), APS, 2006-2009

Member, External Review Panel for Texas A&M University Department of Physics, February 24-27, 2008

CoPI, NSF Planning Grant for APS Minority Bridge Program, 2009 – 2010

NSF Rotator – Program officer for the AMO program 2010 - 2012

National Advisory Committee member of the APS Bridge program, the purpose of which is to double the numbers PhD recipients at R1 Institutions who are members of underrepresented groups, 2012 – present

Distinguished reviewer for Spanish Secretariat of State for Research, Development and Innovation – reviewed two final reports in Madrid, Spain, October 20-21, 2014.

2. Education

Organizer of laboratory tours for secondary school students. (on going)

Invited and volunteer speaker for secondary school students to encourage them to pursue careers in science and mathematics.

Informal recruiter for Physics and Engineering graduate programs at the University of Maryland.

Panelist, the "Presidential Young Investigator Colloquium on U.S. Engineering, Mathematics, and Science Education for the Year 2010 and Beyond." Developed recommendations for long-term revitalization of engineering, mathematics and science education in the U.S., Washington, DC (November 1991).

PYI 2010 Executive Committee on Undergraduate Education, 1992-1995.

Written and Oral Testimony before the U.S. House Appropriations Subcommittee on VA, HUD and Independent Agencies. "America's Global, Economic, and Academic Future: Undergraduate Education," (with S.L. Brantley, P.A. Cox, D.D. Denton, A. Ellison, R.M. Hanson, A.G. Ingraffea, J.R. Dender, J.R. Lohman, S. McNeil, R.J. Perry and A. Stacey), Washington, DC, May 5, 1993.

Written Testimony before the U.S. Senate Appropriations Subcommittee on VA, HUD and Independent Agencies. "America's Global, Economic, and Academic Future: Undergraduate Education," (with S.L. Brantley, P.A. Cox, D.D. Denton, A. Ellison, R.M. Hanson, A.G. Ingraffea, J.R. Dender, J.R. Lohman, S. McNeil, R.J. Perry and A. Stacey), Washington, DC, May 21, 1993.

Participant, national convocation co-hosted by the National Research Council and the National Science Foundation entitled "From Analysis to Action: Undergraduate Education in Science, Mathematics, Engineering, and Technology," attendance by invitation only, held at the National Academy of Sciences, Washington DC April, 9-11, 1995.

Chair, Atomic Molecular and Optical Physics Congressional Reception Committee. We organized a "science fair" for Congress to showcase atomic, molecular and optical physics. Rayburn Building Foyer, Washington, DC, April 16, 1997.

Organizer, AMO and Condense Matter Quantum Computing lab tour for National Society of Black Physics Students, February 18, 2004.

Organizer (with Raj Roy), Joint Bowie State University and University of Maryland, College Park Colloquium by Nobel Laureate William D. Phillips, Bowie State University, March 4, 2004

3. Human Resource Advancement

Panelist, the "Impact of Federal Funding on Careers of Black Scientists," a National Science Foundation Workshop, Washington, DC (1986).

One of several featured personalities in a video made by the Minneapolis public schools for their Contextually Significant Science Curriculum, which is designed to encourage high school students to seek science careers -- I responded to questions about how I became interested in science and what I felt the future hot scientific topics would be.

Panelist, "Increasing the Participation of Minorities in Sciences and Engineering - A National Imperative," a National Science Foundation Workshop, Washington DC (1989).

Member of Advisory Committee for the Science Enrichment Program (SEP) sponsored by the National Institutes of Health and The National Cancer Institute, which was designed to encourage junior high school students to consider careers in science (1989-1991). Duties: organize summer science camp and select students and faculty.

Panelist, the Open Session of the 307th Meeting of the National Science Foundation National Science Board to discuss America's Academic Future, Washington, DC (May 1, 1992).

Panelist, the American Association of Higher Education (AAHE) Conference on Faculty Roles and Rewards to discuss America's Academic Future, San Antonio, TX, January 29-31, 1993.

Steering Committee member for the APS Minority Bridge program, the purpose of which is to double the numbers PhD recipients at R1 Institutions who are members of underrepresented groups, 2009 – 2011

National Advisory Committee member of the APS Bridge program, the purpose of which is to double the numbers PhD recipients at R1 Institutions who are members of underrepresented groups, 2011 – present

UNIVERSITY ACTIVITIES

A. Teaching

1. Physics

PHYS121	(Fundamentals of Physics I Lab)	2001, 2004
PHYS122	(Fundamentals of Physics II Lab)	2001 - 2004
PHYS174	(Physics Laboratory Introduction)	2014-

PHYS260 (262)	(Introduction to Physics II)	1989-1991 2008, 2009
PHYS270 (263)	(Introduction to Physics III)	2000 – 2004 2013 - 2014
PHYS273	(Introduction to Physics)	1996
PHYS276	(Experimental Physics II: Electricity and Magnetism)	2006-2008
PHYS375	(Experimental Physics III, Optics Lab)	1999-2002, 2005, 2009-2010, 2015-
PHYS405	(Advanced Physics Laboratory)	2005-2007
PHYS406	(Fundamentals of Optics)	1985, 1987
PHYS429	(Atomic and Nuclear Laboratory)	1995
PHYS465	(Modern Optics)	1986, 1988
PHYS499	(Undergraduate Independent Research)	1988
PHYS621	(Graduate Laboratory)	1995-1998
PHYS718	(Atomic and Molecular Structure and Dynamics)	1998
PHYS798	(Special Problems: Optical Processes and Photodynamics)	1992
PHYS799	(Master's Thesis Research)	1990-present
PHYS899	(Doctoral Dissertation Research)	1985-present

2. Chemical Physics

CHPH611	(Atomic, Molecular and Optical Physics)	1994
CHPH709	(Chemical Physics Seminar)	1985
CHPH709C	(Optical Interactions Seminar)	1997
CHPH718	(Fund. of Atomic, Molecular and Optical Interactions)	1998,1999
CHPH799	(Masters Thesis Research)	1990-present
CHPH899	(Doctoral Dissertation Research)	1990-present

3. Electrical Engineering

ENEE418	(Optoelectronics Laboratory)	1994-1995
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4. Curriculum Development

PHYS621/429	Overhauling labs, in conjunction with R. Gammon	1997-1998
PHYS375	Updating labs and rewriting course manual Experimented with digital, web-based notebooks	2000-2001 2015

Graduate AMO	AMO text focusing on atomic and molecular structure and dynamics. Co-authors Chi Lee	2006
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B. Student Development and Research Direction

<u>1. Postdoctoral Students</u>	<u>Next Position</u>	<u>Dates</u>
Yifeng Cui	Postdoc, Univ of New Orleans	1994-1994
Jie Zhu	Programer Computer Science Corporation, Va	1997
Brian King	Asst. Prof. McMaster University	1999-2001
Getahun Menkir	Unknown	2004-2007
Zhenwei Wang	University of New Mexico	2007- 2009
Hyounguk Jang	University of Maryland	2011-2013
Jane Lee	Industry	2012-2014
<u>2. Ph.D. Students</u>	<u>First Positions</u>	<u>Dates</u>
Brian Turner, Physics	BAE Systems	1985-1990
Shu Yang, ChemPhys	Contract Scientist, NASA Goddard	1988-1994
Daniel L. Hatten, Physics	Rose Hulman Institute Western New England College.	1989-1994
Yifeng Cui, EE	Postdoc, Univ of Maryland Univ. of New Orleans Electro-Optics Company	1989-1994
Jie Zhu, ChemPhys	Postdoc, Univ of Maryland Programmer, CSC	1987-1996
Yonho Song, Physics	Postdoc, Seoul National Univ.	1994-1999
Kun Zhao, ChemPhys	Postdoc, Univ. Nebraska (Umstadter)	1998-2006
Hui Zhou, ChemPhys	N/A	Sum 1999
Matthew Ferguson, Physics	N/A	Sum 2000
Ilya Arakelyan, Physics	Postdoc, Duke University Postdoc, NC State University	2001-2009
Narupon Chattapiban, Physics	Chiang Mai University, Thailand	2002-2011
Lee Newton Elberson, ChemPhys	Clayborne Online	2004-2014
Sandip Mitra, ChemPhys	N/A	2005-2008
Guan-Yeu Chen, Physics	N/A	2006-2014
Sam Brewer, ChemPhys	N/A	Sum 2006
Jeff Lee, ChemPhys	N/A	2007-

Nightvid Cole	N/A	2009-2010
David B. Foote	N/A	2013-

<u>3. Master Students</u>	<u>First Position</u>	<u>Dates</u>
Li Bao, Electrical Engineering	Engineer in industry	1986-1988
Jyotsna Ramachandran, Chem Phys	Unknown	1990
Hacene Boukari, Chemical Physics	Completed Grad School at Maryland	1985
Vishal S Chintawar	Startup Company	2002-2004

<u>4. Undergraduate Students</u>	<u>Next Position</u>	<u>Dates</u>
Orion Phillips, Nuclear Engineering	Returned to South Africa	1984
Donald Davis, Electrical Engineering	Graduate School	1986-1987
Doug Wiley, Computer Science	Graduate School	1987
Alberto Pinkas	Graduate School, Physics, Maryland	1987-1989
Stuart Wilson, Electrical Engineering	Graduated, unknown	1990-1991
Hwa Park, Mechanical Engineering	Unknown	1994-1995
Jeanette LaCivita	Left Maryland, unknown	summer 1996
Tyson Lee, Mechanical Engineering	Engineer Industry	1996-1997 1998-2000
Dan Milam	Graduate Student, Carnegie	1996-1998
Michael Milke	Unknown	1997
Kyung Kim	Engineer, Industry	1999-2000
Andrew Kim	Unknown	1999-2000
Terra Colvin	Unknown	2000-
John Orbrecht	Graduate School	2001-2002
Johnathan Armoza	Unknown	2001
Chris Lombardo	Graduate School	2002
David Cofield	US Archives	2002-2004
Damon Ellingston	Graduate School	2002
Scott Hughes	Patent Office	2003-2004
Ikem Nwolisa	Engineer, Industry	Sum 2003
Merle Zimmerman	Graduate School	Sum 2003
Phillip Land	Graduate School	2004-2005
Jeff Smith	Unknown	2004-2006
Marcus Laich	Graduate School	2004-2006
Erick Andrade	Graduate School	2005-2006

Alem Sahle	Unknown	2006-2007
Ryan Van Fleet	Engineer, Industry	2006-2007
Leo Singer	Unknown	Sum 2007
Seth Iacangelo	Engineer, Industry	2007-2008
Lee Stephen Green	Graduate School	Sum 2008
Brian McIlvain	Unknown	2009-2012
Ben Crist	Unknown	2009-2011
Erwin Dylan	Graduate School	Sum 2009
Meihui (Sarah) Tao	Graduate School	Sum 2010
Scott Suvillan	Graduate School	Fall 2010
Raghav (Jack) Simha	N/A	2011 - 2013
James Chen	N/A	Sum 2013
Yingda Lin	N/A	2013-

<u>5. Undergraduate Research Assistant Program (URAP)</u>	<u>Department</u>	<u>Dates</u>
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Ahsen Uppal	EE/CS	Spring 2000
Glen Drost	CS	Fall 2000
Jonathan Armoza	CS	Spring 2001
Ryan Pavlick	Geography	Fall 2002

<u>6. University Scholars Program Research Project Advisor</u>	<u>Department</u>	<u>Dates</u>
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Chris Lombardo	Physics	Spring 2002
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<u>7. University Honors Program Research Project Advisor</u>	<u>Department</u>	<u>Dates</u>
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Damon Ellingston	Physics	Fall 2002
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<u>8. High School Students</u>	<u>Department</u>	<u>Dates</u>
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Chris Parker (PG, MD)	Unknown	Sum 1985
Brent Yorgey (Washington DC)	Williams College	Spring 2000
Rachel Hsu (Churchill HS)	College	Sum 2005
Jerry Sun (Churchill HS)	N/A	Sum 2007
Trisha Avasthi (Churchill HS, MD)	University of Maryland	Sum 2007
Sina Taghizadeh (Churchill HS, MD)	N/A	Sum 2008
Samuel McClive (Churchill HS, MD)	NA	Sum 2008

Monica Cho (Churchill HS, MD)	N/A	Sum 2009
Vincent Hu (Churchill HS, MD)	N/A	Sum 2009
Matthew Smith (Sherwood HS, MD)	N/A	Sum 2010
Kayo Teramoto (Churchill HS, MD)	N/A	Sum 2010
William Weston-Dawkes (Churchill HS, MD)	University of Maryland	Sum 2010
Zach Weinstein (Churchill HS, MD)	University of Maryland	Sum 2011
Rebecca Stussman (Sherwood HS, MD)	University of Maryland	Sum 2011

C. Visiting Scientists & Collaborators

Richard. A. Neifeld (Harry Diamond Army Research Labs)		1987-1989
Guizhong Zhang (Tiajin University, China)		1997-1998
Frederick Adamietz (Université de Bordeaux, France)		1998-1999
Kenneth J. Ritter (Laboratory for Physical Sciences, NSA)		2005-
Ronnie L. Shephard (Lawrence Livermore National Lab)		2005-
Carlo Alonzo (Risoe National Laboratory, Denmark)		Jan 2008
Guizhong Zhang (Tiajin University, China)		2009

D. Mentoring and Recruiting Activities

"Graduate Opportunities at the University of Maryland," Alabama A&M University, Huntsville, AL		1986
"Graduate Opportunities at the University of Maryland," Tuskegee Institute, Tuskegee, AL		1986
Graduate Research Interaction Day, Faculty Judge		1989
Keynote Speaker, Second Annual Closing Ceremonies of the Summer Undergraduate Research Program, "Research in the American Society: Visions for the 21 st Century."		1990
University of Maryland Science Mentoring Program for "Minority" Undergraduate Students		1991-1992 1994-1995
Organizer, laboratory tours for Minority Honors Program for Scientists and Engineers (Bridge Program)		1994
"Graduate Opportunities in Physics and Chemical Physics at the University of Maryland," Hampton University, Lincoln University and Clark-Atlanta University, Illinois State University.		1998
"Graduate Opportunities in Physics and Chemical Physics at the University of Maryland," National Society of Black Physicists		1998

“Graduate Opportunities in Physics and Chemical Physics at the University of Maryland,” Various Institutions in China	1999
“Studies in Science and Engineering at the University of Maryland Detroit Public Schools	2001
Recruiting, Physics and Chemical Physic Programs at the National Society of Black Physics Students Conference, Washington, DC	2004, 2008
Mentor for the APS Minority Physics Fellowship recipients (2)	2010-

E. Committees1. Departmental (IPST & PHYS)

Faculty Grievance Committee	1984
Facilities and Services Committee (Chair, 1987-1988, 1993-1995, 1999)	1985-1988 1989-1992 1993-1995 1999-2001 2013-
Faculty Appointment, Promotion and Tenure Committee	1986-1988 1996-1997
IPST/EE Search Committee (Hiring)	1986-1987
Chair, Chemical Physics Qualifier Committee	1986-1989 1998-2010
IPST Hiring Committee	1987
IPST Director Search Committee	1987-1988
IPST Policy Committee	1987-1988 1991-1992 1993-1995
IPST Statistical Physics Hiring Committee	1988-1989
IPST Affirmative Action Search Committee	1989-1990
IPST/NIST Graduate Fellowship Program Committee	1992
IPST Strategic Planning Committee	1994
Promotion Committee for Jakobus A. Le Roux	1995
Physics Department Laboratory Committee — to monitor laboratory curricula for all labs, to recommend changes for improvement	1997-2002
IPST Ad Hoc Space Committee, Chair	1999
Vice Chair, IPST Faculty Assembly	2000-2001 2012-2013
Chair, IPST Faculty Assembly	2001-2002 2013-2014
AMO Search Committee (Experiment and Theory)	2001-2002
IPST Salary and Faculty Review Committee	2002-2008 2011-2014

Secretary, IPST Faculty Assembly	2005-2006
	2011-2012
Grader, Physics Qualifier Question (42 Students)	2006
Composer, Chemical Physics Qualifier Question	Sum 2007
Chair, IPST Faculty Appointment, Promotion and Tenure Committee	2007-2010
Composer, Physics Qualifier Question	Winter 2008
JQI Theory Postdoc Fellowship Committee	2011-2012
JQI Experimental Postdoc Fellowship Committee	2013-2014

2. University/College

Senate Adjunct Committee on Research	1988-1990
IPST 5-Year Internal Review Committee	1989-1990
Committee on Research, Graduate Council	1991, 1994
Search Committee for the Associate Dean for Research and Graduate Studies	1995
Banneker/Key Scholarship Selection Committee	1995-1996
African-American Postdoctoral Fellowship Committee	1996
Graduate Programs Review Committee — reviewed all graduate programs on campus	1996-1997
University Appeals Committee	1999
University Research Council	2000-2003
Senior Advisor to Executive Committee of the Black Faculty and Staff Association	2000-2002
Faculty Advisor to the Navigators	2000-
CMPS Library Committee and Department Representative	2000-
Member, Raj Roy Review Committee	2008

PhD Thesis Committees

Scott A. Strobel, Physics	1984	Stephen E. Sadow, E.E. (Graduate School Representative)	1993
Helen R. Thorsheim, Chem. (Graduate School Representative)	1989	Yifeng Cui, E.E. (Graduate School Representative)	1994
Brian P. Turner, Phys. (Chair)	1990	Patricia F. Meed, E.E. (Graduate School Representative)	1994
Feng Peng, E. E. (Graduate School Representative)	1990	Shu Yang, Chem. Phys. (Chair)	1994
Qi Li, Physics	1991	Pak Shing Cho, E.E. (Graduate School Representative)	1994
Jianwen Xu, Chem. Phys.	1991		

UNIVERSITY ACTIVITIES (cont'd.)

WENDELL TALBOT HILL, III

Eric E. Funk, E.E. (Graduate School Representative)	1995	Kuldeep Amarnath, EE (Graduate School Representative)	2006
John J. Curry, E.E. (Graduate School Representative)	1995	Matt Terraciano, Physics (Graduate School Representative)	2006
Darrin Leonhardt, Chem.	1995	Reza Salem, EE (Graduate School Representative)	2006
Daniel L. Hatten, Phys. (Chair)	1995	Wei-Yen Chen, EE (Graduate School Representative)	2006
Camran V. Parast, Biochem. (Graduate School Representative)	1995	Johnny Huckans, Physics (Graduate School Representative)	2006
Jie Zhu, Chem. Phys. (Chair)	1996	Robert A. Lunsford, Physics (Graduate School Representative)	2006
Dan Brasoveanu, Chem. Phys.	1997	Jonah Pezeshki, EE (Graduate School Representative)	2007
Chad Orzel, Chem. Phys.	1999	Andrew York, Physics	2008
Yonho Song, Physics (Chair)	1999		
William DeGraffenreid, Chem. Phys.	2000	Pape Sylla, EE (Graduate School Representative)	2008
Jaime Ramirez-Serrano, Chem. Phys.	2001	Ryan Clary, Physics	2009
Damon Spayde, Phys. (Graduate School Representative)	2001	Ilya Arakelyan, Physics (Chair)	2009
Amr M. Safwat Abo Elatta, E.E. (Graduate School Representative)	2001	Merle Zimmermann, Chemistry (Graduate School Representative)	2010
Junghwan Kim, E.E. (Graduate School Representative)	2001	Nick Cummings, Physics (Graduate School Representative)	2011
Lingze Duan, E.E. (Graduate School Representative)	2002	Anand Ramanathan, Physics (Graduate School Representative)	2011
Paul Petruzzi, E.E. (Graduate School Representative)	2003	Narupon Chattrapiban, Physics (Chair)	2012
Rohit Grover, E.E. (Graduate School Representative)	2003	Tung-Chang Liu, Physics (Graduate School Representative)	2013
Nicolai Nygaard, Chem Phys	2003	Jennifer Elle, Physics (Graduate School Representative)	2015
Tarek Adly Ibrahim, EE (Graduate School Representative)	2003	Jeff G. Lee, Chemical Physics (Chair)	2015
Sanjiv Shresta, Physics	2003		
Elizabeth Anne Rogers, Physics (Graduate School Representative)	2005		
Kun Zhao, Chem. Phys. (Chair)	2005		
Jonah Pezeski, EE (Graduate School Representative)	2006		

F. Memberships

Graduate Faculty

Chemical Physics Faculty

Black Faculty and Staff Association

Joint Quantum Institute (Joint between UMCP, NIST and NSA)

COMMUNITY ACTIVITIES

One of several featured personalities in a video made by the Minneapolis public schools for their Contextually Significant Science Curriculum, which is designed to encourage high school students to seek science careers -- I responded to questions about how I became interested in science and what I felt the future hot scientific topics would be (1990).

Organizer of laboratory tours for secondary school students.

Invited and volunteer speaker for secondary school students to encourage them to pursue careers in science and mathematics.

Informal recruiter for Physics and Engineering graduate programs at the University of Maryland.

"Laser Light," Demonstration to pre-K children at Washington Christian Academy, Silver Spring, MD, May 2, 1995. (15 min).

"Light and Sound," (with F. Skiff) School Assembly given at Washington Christian Academy, Silver Spring, MD, December 8, 1995. Three lectures (30 min. ea).

"Light," Pre-Kindergarten Class at Washington Christian Academy, Silver Spring, MD, March 22, 1996 (20 min.).

Science Program Consultant for Washington Christian Academy, Silver Spring, MD, 1997

"Mechanics," (with F. Skiff) School Assembly given at Washington Christian Academy, Silver Spring, MD, December 2, 1997. Two lectures (45 min. ea).

Science Fair Judge and Consultant for Shabach Home School Academy 1999, 2000

Mentored local high school student (Garry Riddick) for science fair project Fall 2000.

Sensational Saturday, Science Demonstration for elementary school children at Church of the Redeemer, Gaithersburg, MD September, 14 2002 (60 min)

Science Fair Demonstrations at Fourth Presbyterian School's annual Spring Festival entitled "Spring into Science," Potomac, MD May 10, 2003 (two 60 min presentations)

Church of the Redeemer Christian School Science presentation to 5th graders, Gaithersburg, MD, May 29, 2003 (90 min).

Church of the Redeemer Christian School Science presentation to 5th graders, Gaithersburg, MD, March 24-25, 2004 (two 90 min presentations).

Church of the Redeemer Christian School Science presentation to 5th graders, Gaithersburg MD, April 21, 2005 (60 optics lab plus 30 min tour of research labs).

"Physics: God's Window into the Universe" Public talk given to 1st - 4th graders at the Church of the Redeemer, Gaithersburg, MD, November 12, 2005 (45 min).

Church of the Redeemer Christian School Science presentation to 5th graders, Gaithersburg MD, May 11, 2006 (60 optics lab plus 30 min tour of research labs).

Host for high school summer interns for area schools.

CONTRACTS AND GRANTSA. Past

General Research Board, University of Maryland, College Park

"High Resolution Measurements of Laser Selected Excited States in the Vacuum Ultraviolet."

\$3,500, 06/01/83 – 08/16/83

Research Corporation

"Energy Redistribution Studies in Highly Excited Atoms and Molecules."

\$16,000, 12/01/83 – 11/30/85

National Science Foundation Grant #PHY-84 06192

"Excited State Dynamics in Small Molecules."

\$203,377, 07/15/84 – 12/14/87

National Science Foundation Grant #PHY-84 06192

"Excited State Dynamics in Small Molecules."

\$159,500, 07/15/87 – 07/14/89

Air Force Office of Scientific Research (CoPI w/ J Goldhar)

"Half-Collisions Induced by Short UV Laser Pulses."

\$436,925, 07/1/89 – 06/30/93

Presidential Young Investigator Award Grant #PHY-84 51284:

<u>Year</u>	<u>NSF Support</u>	<u>Industrial Matching</u>
1985	\$35,000	\$10,000 (Baltimore Gas & Electric)
1986	\$28,420	\$3,420 (Texas Instruments, Inc.)
1987	\$49,940	\$22,505 (Texas Instruments, Inc.) \$2,435 (Galileo Corp.)
1988	\$45,500	\$17,500 (COMSAT) \$3,000 (Lambda Physik)
1989	\$29,700	\$4,500 (Hewlett Packard) \$700 (Newport Corporation)

National Science Foundation Grant #PHY-91 06916

"Covariance Analysis of Multiphoton Fragmentation Channels in Highly Excited Small Molecules."

\$349,700, 07/1/91 – 09/30/96

National Science Foundation Grant #PHY-95 112313

(CoPIs: J Goldhar, PT Ho, CH Lee, H Milchberg & J Weiner)

"Development of a Versatile, Multi-use Laser System for Research in Atomic, Molecular and Optical Science and Engineering."

\$553,267 (+ \$590,000 cost sharing), 09/1/95 – 08/31/98

National Science Foundation Grant #PHY-96 00203

"Intense and Super-Intense Atomic Physics with Micro-Sized Target Volumes"

\$390,000, 06/1/96 – 05/31/99

National Institute for Standards and Technology

"Toward an Optical Lattice-based Quantum Computer"

\$86,774, 12/01/00 – 11/30/01

National Institute for Standards and Technology

"Toward an Optical Lattice-based Quantum Computer"

\$73,292, 03/16/01 – 03/15/02

- National Science Foundation Grant #PHY-98 76976
"Correlation Studies in Atoms and Molecules."
\$252,500, 07/15/99 – 06/30/02
- National Institute for Standards and Technology
"Rydberg Gates for Quantum Computing"
\$75,465, 09/30/01 – 09/29/02
- National Science Foundation Grant #PHY-00 99489
"Correlation Studies in Atoms and Molecules."
\$120,000, 08/15/01 – 07/31/03
- National Institute for Standards and Technology
"A Study of the Rydberg blockade Phenomenon"
\$99,103, 09/01/02 – 08/31/03
- Army Research Office
"Hollow Laser Beam Generated Neutral Atom Beam Splitters and Switches"
\$270,000, 08/31/01 – 08/30/05
- National Institute for Standards and Technology
"A Study of the Rydberg blockade Phenomenon"
\$173,658, 09/01/03 – 08/31/05
- Optoelectronics Industry Development Association (OIDA)
"2D Spatial Light Modulators for Experiments in Atom Optics and Quantum Information"
\$31,104, 06/15/03 – 06/14/04
- National Science Foundation Grant # PHY 0245592
"Strong-Field Imaging of Ultrafast Molecular Dynamics"
\$555,000, 07/15/03 – 07/14/06
- Optoelectronics Industry Development Association (OIDA)
"Towards Atom Transport and Quantum Information"
\$25,000, 11/15/04 – 11/14/06
- Office of Naval Research – DURIP Gant #N000140510819
(PI: W. T. Hill, III; CoPIs: L. Orozco and S. Rolston)
"Quantum Interconnects"
\$246,730 + \$125,000 matching, 06/23/05 – 02/28/07
- Laboratory for Physical Science (National Security Agency)
"Toward Quantum Sensors with Neutral Cold Atoms "
\$340,000, 06/01/06 – 12/31/10
- National Science Foundation Grant # PHY 0555636
"Coulomb Explosion Imaging and Adaptive Control of Molecular Dynamics."
\$458,000, 06/30/06 – 08/31/10
- National Science Foundation Grant – ITR # PHY 0426696
(PI: S. Rolston; CoPIs: W. T. Hill, III, B.-L. Hu, L. Orozco, & C. Williams)
"Distributed Quantum Information"
\$1,650,000, 09/01/04 – 08/31/10

Lawrence Livermore National Lab

“Controlling absorption and energy partitioning in solid target plasmas with shaped laser pulses”

\$149,820, 03/01/06 – 09/30/08

Laboratory for Physical Science (National Security Agency)

“Toward Quantum Sensors with Neutral Cold Atoms ”

\$120,000, 01/01/07 – 12/31/10

Lawrence Livermore National Lab

“Time History of Short Pulse Laser Generated Electrons”

\$54,999, 12/03/08 – 03/31/10

National Science Foundation, DGE 0958333

(CoPIs: T. W. Hodapp, C. A. Murray and W. T. Hill, III; hosted by APS)

“EAGER: Doubling Minority PhDs in Physics”

\$131,717, 10/01/09 – 03/31/11

American Physical Society LaserFest Grant

“ Minorities and Lasers in Life (ML2); A K-12 Outreach Program in Lasers for Underrepresented Minorities”

\$3,000, 01/01/10 – 12/31/10.

National Science Foundation Grant # PHY 0902221

“Towards deciphering the optimal field - system interaction in femtosecond adaptive control of molecular dynamics”

\$716,000, 07/15/09 – 06/30/13

NSF Physics Frontier’s Center, PHYS 0822671

(PI: W Phillips, I receive support for one student.)

“Joint Quantum Institute: Processing Quantum Coherence”

\$5,000,000, 09/01/09 – 08/31/14

B. Current

NSF – PHY1506332

“Collaborative Research: Following electron dynamics in atoms and molecules with isolated attosecond pulses: towards control of electron dynamics”

\$600,000, 08/1/15 – 07/31/18

Collaborator: Zenghu Chang at University of Central Florida

UMD portion \$450,000

C. Pending and Planned

NSF –PHY1551885

“Student Travel Support to ISUILS14”

\$5,000, 08/01/2015 – 07/31/2016

AFOSR

``Proton and Electron Time Histories During Laser Driven Ion Acceleration
\$600,000, 10/1/15 – 9/30/19

PUBLICATIONSA. Articles1. Scientific Articles

"Measurements of the Reaction e^+e^- at Center-of-Mass Energies in the Range 6.2-7.4 GeV," E. Hilger, B. L. Beron, R. L. Carrington, R. L. Ford, W. T. Hill, R. Hofstadter, E. B. Hughes, A. D. Liberman, T. W. Martin, L. H. O'Neil, J. W. Simpson and L. K. Resvanis, *Phys. Rev. D* 15, 1809-1813 (1977).

"Stark-Effect Study of Excited States in Sodium Using Two-Photon Spectroscopy," R. T. Hawkins, W. T. Hill, F. V. Kowalski, A. L. Schawlow and S. Svanberg, *Phys. Rev. A* 15, 967-974 (1977).

"Laser Polarization Spectroscopy," R. E. Teets, F. V. Kowalski, W. T. Hill, III, N. Carlson and T. W. Hansch, in Advances in Laser Spectroscopy, I, ed. Ahmed H. Zewail, SPIE Vol. 113, 80-87 (1977).

"Saturated-Interference Spectroscopy," F. V. Kowalski, W. T. Hill and A. L. Schawlow, *Opt. Lett.* 2, 112-114 (1978).

"Sensitive Intracavity Absorption at Reduced Pressures," W. T. Hill, III, R. A. Abreu, T. W. Hansch and A. L. Schawlow, *Opt. Commun.* 32, 96-100 (1980).

"The Influence of Increasing Nuclear Charge on the Rydberg Spectra of Xe, Cs⁺, and Ba⁺⁺: Correlation, Term-Dependence and Autoionization," W. T. Hill, III, K. T. Cheng, W. R. Johnson, T. B. Lucatorto, T. J. McIlrath and J. Sugar, *Phys. Rev. Lett.* 49, 1631-1635 (1982).

"The 4d-Photoabsorption of Ba, Ba⁺ and Ba⁺⁺: A View of Shell Collapse vs. Contraction," T. B. Lucatorto, T. J. McIlrath, W. T. Hill, III and C. W. Clark, ed. Bernd Crasemann, AIP Conference Proceedings, No. 94, 584-601 (1982).

"Rydberg Series $5p^5 6sns$ and $5p^5 6snd$ in the Autoionizing Continua of Neutral Cesium," V. Kaufman, J. Sugar, C. W. Clark and W. T. Hill, III, *Phys. Rev. A* 28, 2876-2880 (1983).

"Rydberg Series $5p^5 6sns$ and $5p^5 6snd$ in the Autoionizing Continua of Neutral Cesium," V. Kaufman, J. Sugar, C. W. Clark and W. T. Hill, III, in Vacuum Ultraviolet Radiation Physics (VUV-7), ed. A. Weinreb and A. Ron, *Annals of the Israel Physical Society*, Vol. 6, 80-82 (1983).

"Non-Resonant Laser-Driven Ionization of Condensing Vapors: A Mechanism Based on Cluster Fragmentation," W. T. Hill, III, *Opt. Commun.* 54, 283-288 (1985).

"Intracavity Absorption Line Profiles: A Comment on the Observed Asymmetry," W. T. Hill, III, T. W. Hansch and A. L. Schawlow, *Appl. Opt.* 24, 3718-3724 (1985).

"Quenching of Resonant Laser-Driven Ionization at High Buffer Gas Pressures," W. T. Hill, III, *J. Phys. B*: 19, 359-368 (1986).

"Short-Length Large-Bore Metal Vapor Cell," K. Ueda, W. T. Hill, III, and M. L. Ginter, *Rev. Sci. Instrum.* 57, 888-891 (1986).

"Laser-Driven Ionization of Cs and Absorption Spectrum of Resultant Cs⁺ Vapor," T. J. McIlrath, J. Sugar, V. Kaufman, D. Cooper and W. T. Hill, III, *J. Opt. Soc. Am. B* 3, 398-402 (1986).

"Column-Density Meter: A High Precision Technique for Measuring Line-of-Sight Vapor Densities," W. T. Hill, III, *Appl. Opt.* 25, 4476-4482 (1986).

"Analysis of the 5p⁶ 5p⁵ nl (J=1) Rydberg Series in Ba⁺⁺," W. T. Hill, III, J. Sugar, T. B. Lucatorto and K. T. Cheng, *Phys. Rev. A* 36, 1200-1206 (1987).

"Polarized Fluorescence Spectroscopy of O," J. W. Keller, W. T. Hill, III, and D. L. Ederer, *J. Chem. Phys.* 87, 3299-3303 (1987).

"Laser-Driven Ionization and Photoabsorption Spectroscopy of Atomic Ions," W. T. Hill, III and C. L. Cromer, *Lasers, Spectroscopy and New Ideas: A Tribute to Arthur L. Schawlow*, Springer Series in Optical Sciences No. 54, 183-194 (Springer Verlag 1987).

"High Precision Measurements of Vapor Densities," W. T. Hill, III, eds. W. Person and S. Svanberg, *Laser Spectroscopy VIII*, Springer Series in Optical Sciences No. 55, 407-408 (Springer Verlag 1987).

"Intracavity Absorption Detection of Magnetic-Dipole Transitions in ¹⁸O₂ and the Determination of the b¹(v=2) State Rotational Constants," W. T. Hill, III and A. L. Schawlow, *J. Opt. Soc. Am. B* 5, 745-748 (1988).

"Systematics of Thin Films Formed by Excimer Laser Ablation: Results on SmBa₂ Cu₃O₇," R. A. Neifeld, S. Gunapala, G. Liang, S. A. Shaheen, M. Croft, J. Price, D. Simons and W. T. Hill, III, *Appl. Phys. Lett.* 53, 703-704 (1988).

"Photodecomposition of CO₂ by 193 nm Radiation," W. T. Hill and B. P. Turner, ed. A. C. Tam, J. L. Gole and W. C. Stwalley, *Advances in Laser Science-III*, Optical Science and Engineering Series 9, 610-612 (1988).

"Systematics of Excimer Laser Ablation - Thin Film Preparation of High T_c Material," R. A. Neifeld, G. Liang, S. A. Shaheen, M. Croft, J. Price, D. Simons, W. T. Hill, III and D. Ginby, Conference Proceedings to Fourth Annual Meeting of the North East Regional Metallurgical Society, Rutgers University, April 1988.

"Preparation of High Temperature Superconductor Thin Films on Silicon Based Substrates by Excimer Laser Ablation, Film - Substrate Interactions, and Plasma Processing Effects on Crystallinity," R. A. Neifeld, R. Pfeffer, E. Potenziani, W. Wilbur, D. Basarab, R. Lareau, J. Shappirio, C. Wren, L. Calderon, W. Savin, A. Tauber, G. Liang, S. Gunapala, M. Croft, J. Price, D. Simons, W. T. Hill, III, B. Turner, A. Pinkas, J. Zhu, G. Ginley, *Science and Technology of Thin Film Superconductors*, ed. by R. D. McConnell and S. A. Wolf, p. 45-51 (Plenum Press, New York, 1989).

"UV-Laser Photofragmentation Instrument: Multiphoton Ionization and Dissociation of Small Molecules," B. P. Turner, W. T. Hill, III, J. Zhu, A. Pinkas, S. Yang and L. Bao, *Rev. Sci. Instrum.* 61, 1182-1191 (1990).

- "Multiphoton Ionization vs. Multiphoton Dissociation: Competition Between Photoionization and Dissociation in CO," W. T. Hill, III, B. P. Turner, H. Lefebvre-Brion, S. Yang and J. Zhu, *J. Chem. Phys.* 92, 4272-4276 (1990).
- "Properties of the Ablation Process for Excimer Laser Ablation of YBa₂Cu₃O₇," R. A. Neifeld, E. Potenziani, W. R. Sinclair, W. T. Hill, III, B. Turner and A. Pinkas, *J. Appl. Phys.* 69, 1107-1109 (1991).
- "Competition Between Multiphoton Fragmentation Channels in H₂ and HD Induced by Intermediate States," W. T. Hill, III, B. P. Turner, S. Yang, J. Zhu and D. L. Hatten, *Phys. Rev. A* 43, 3668-3674 (1991).
- "Generation of Intense 10 ps, 193 nm Pulses Using Simple Distributed Feedback Dye Lasers and an ArF* Amplifier," D. L. Hatten, Y. Cui, W. T. Hill III, T. Mikes and J. Goldhar, *Appl. Opt.* 31, 7042-7045 (1992).
- "Role of Non-Coulombic Potential Curves in Intense Field Dissociative Ionization of Diatomic Molecules," W. T. Hill, III, J. Zhu, D. L. Hatten, Y. Cui, J. Goldhar and S. Yang, *Phys. Rev. Letts.* 69, 2646-2646 (1992).
- "Intermediate States in Multiphoton Fragmentation of Small Molecules," W. T. Hill, III, S. Yang, D. L. Hatten, Y. Cui, J. Goldhar and J. Zhu, *NATO ASI Series Coherence Phenomena in Atoms and Molecules in Laser Fields*, ed., A. D. Bandrauk and S. C. Wallace, p. 153-161 (Plenum Press, New York, 1992).
- "Frequency Tuning of a Distributed Feedback Dye Laser with Two Transmission Gratings," Y. Cui, T. N. Ding, D. L. Hatten, W. T. Hill, III and J. Goldhar, *Appl. Opt.* 32, 6602-6606 (1993).
- "Multiphoton Dissociative Ionization of O₂: Competition Between Dissociation and Ionization in Excited States," S. Yang, W.T. Hill III and S.N. Dixit, *J. Chem. Phys.* 100, 6434-6444 (1994).
- "Precision Lifetime Measurements in Atomic Cs by Single Photon Counting," L. Young, W.T. Hill III, S.J. Sibener, S. Price, C.E. Tanner, C.E. Wieman and S.R. Leone, *Phys. Rev. A* 50, 2174-2180 (1994).
- "Quasi-Coulomb Explosion Model of Multiply Ionized Diatoms," W.T. Hill III, D.L. Hatten, J. Zhu, Y. Cui and J. Goldhar, *Proceedings to the 6th International Conference on Multiphoton Processes (ICOMP VI)*, eds. D.K. Evans and S.L. Chin, *Series on Optics and Photons*, 6, 309-311 (World Scientific, River Edge, NJ, 1994).
- "Proton Angular Distribution Following Multiphoton Dissociative Ionization of H₂ at 193 nm," S. Yang and W.T. Hill III, *Phys. Rev. A* 51, 2301-2307 (1995).
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- "Above Threshold Dissociation of CO²⁺," D.L. Hatten, J. Zhu, J. Goldhar and W.T. Hill III, *Laser Physics*, special issue dedicated to N.B. Delone, *Laser Physics*, 7, 858 (1997).
- "Momentum and Correlation Spectra Following Intense Field Dissociative Ionization of H₂," J. Zhu and W.T. Hill, III, *JOSA B*, 14, 2212 (1997).

"Long, Narrow All-Light Atom Guide," Y. Song, D. Milam and W.T. Hill, III, *Opt. Lett.*, **24**, 1808-1807 (1999).

"Image Labeling: A Graphical Interface to Correlation in Multiparticle Ejection Dynamics," K. Zhao, G. Zhang and W.T. Hill, III, *Opt. Express* **9**, 42-47 (2001).

"Deconvolving Two-Dimensional Images of Three-Dimensional Momentum Trajectories," K. Zhao, T. Colvin, Jr., W.T. Hill, III, and G. Zhang, *Rev. Sci. Instrum.* **73**, 3044 (2002).

"Generation of Nondiffracting Bessel Beams by Use of a Spatial Light Modulator," N. Chattapiban, E. A. Rogers, D. Cofield, W. T. Hill, III and R. Roy, *Opt. Lett.* **28**, 2183-2185 (2003).

"Strong-Field Dissociative Ionization of a Linear Triatomic Molecule: Relationship Between Coulomb-Explosion Energies and the Bond Angle," K. Zhao, G. Zhang and W.T. Hill, III, *Phys. Rev. A* **68**, 063408 (2003).

"Ejection anisotropy in three-atom Coulomb explosions," K. Zhao and W. T. Hill, III, *Phys. Rev. A* **71**, 013412 (2005).

"An alternative approach for determining photoionization rates in H_2^+ : Numerical results," Yu Zhou, Gui-Zhong Zhang, Wang-Hua Xiang and W. T. Hill, III, *Chinese Phys. Lett.* **22**, 1097-1098 (2005).

"Profound carrier-envelope-phase-difference effect on photoionization rate: Numerical results on model hydrogen atom," Yu Zhou, Gui-Zhong Zhang, Wang-Hua Xiang and W. T. Hill, III, *Chinese Phys. Lett.* **22**, 2230-2232 (2005).

"Laser beams with embedded vortices: Tools for atom optics," N. Chattapiban, E. A. Rogers, I. V. Arakelyan, R Roy and W. T. Hill, III, *JOSA B* **23**, 94-103 (2006).

"Strong-Field Correlation Imaging: Revealing Molecular Geometries, Orientation and Dynamics," W. T. Hill, III, K. Zhao, L. N. Elberson and G. M. Menkir, *Progress in Ultrafast Intense Laser Science I: Springer Series in Chemical Physics*, eds. K. Yamanouchi, S. L. Chin, P. Agostini and G. Ferrante, 59-75 (Springer-Verlag, Berlin, 2006).

"Direct Measurement of Dynamic Alignment in Strong Femtosecond Fields," K. Zhao, L. N. Elberson, G. M. Menkir and W.T. Hill, III, *Phys. Rev. A* **74**, 033408 (2006).

"Absence of charge-resonance-enhanced ionization in attosecond pulse photoionization: Numerical result on one-dimensional H_2^+ ," Zhe Zhang, Zhong-Qing Zhang, Gui-Zhong Zhang, Wang-Hua Xiang, W. T. Hill, III, *Chinese Phys. Lett.* **23**, 576-578 (2006).

"Imaging internuclear separation of H_2^+ in configuration space: Reduced dimensionality model," Zhe Zhang, Zhong-Qing Zhang, Gui-Zhong Zhang, Wang-Hua Xiang, W. T. Hill, III, *Chinese Phys. Lett.* **23**, 1455-1447 (2006).

"Exact timing of returned molecular wavepacket," Zhe Zhang, Ting-Ying Wang, Gui-Zhong Zhang, Wang-Hua Xiang, W. T. Hill, III, *Chinese Phys. Lett.* **23**, 3242-3244 (2006).

- “Versatile element for free-space dividing and redirecting neutral atom clouds,” I. Arakelyan, N. Chattapiban, S. Mitra and W.T. Hill, III, *Phys. Rev. A.* **75**, R17706 (2007).
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- “Double-exponentially decayed photoionization in CREI effect: Numerical experiment on $3D H_2^+$,” Feng Li, Ting-Ying Wang, Gui-Zhong Zhang, Wang-Hua Xiang and W. T. Hill, III, *Chinese Phys. Lett.* **25**, 465-467 (2008).
- “An alternative way for computing absolute and normalized photoionization rates: Tested in $1D H_2^+$ system,” Feng Li, Gui-Zhong Zhang, Wang-Hua Xiang and W. T. Hill, III, *Opt. Commun.* **281**, 2097-2106 (2008).
- “Adaptive control of CO_2 bending vibration: Deciphering field-system dynamics,” G. Y. Chen, Z. W. Wang and W. T. Hill, III, *Phys Rev. A* **79**, 011401(R) (2009).
- “A picosecond time-resolved electron energy spectrometer based on Čerenkov radiation,” L. N. Elberson, Y. Ping, R. L. Shepherd, P. K. Patel, A. J. Mackinnon and W. T. Hill, III, *Rev. Sci. Instrum.* **80**, 023302 (2009).
- “Superflow in a toroidal Bose-Einstein condensate: an atom circuit with a tunable weak link,” A. Ramanathan, K. C. Wright, S. R. Muniz, M. Zelan, W. T. Hill III, C. J. Lobb, K. Helmerson, W. D. Phillips, and G. K. Campbell, arXiv:submit/0171748 cond-mat.quant-gas.
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- “Analogues of Basic Electronic Circuit Elements in a Free-Space Atom Chip,” Jeffrey G. Lee, Brian J. McIlvain, C. J. Lobb and W. T. Hill, III, *Sci. Rep.* **3**, 1034 (2013).
- “Spatial shaping for generating arbitrary optical dipole traps for ultracold degenerate gases,” Jeffrey Lee and W. T. Hill, III, *Rev of Sci Instrum.* **85**, 103106 (2014).
- “Laser Acceleration of Protons Using Multi-Ion Plasma Gaseous Targets,” Tung-Chang Liu, Xi Shao, Chuan Liu, Bengt Eliasson, W. T. Hill, III, J. Wang and Shih-Hung Chen, *New J of Phys.* **17** 023018 (2015).
- “Image-based closed-loop control of molecular dynamics: Controlling strong-field dissociative-ionization pathways,” J. Lee, G.-Y. Chen, H Jang, D. B. Foote and W. T. Hill, III, *Progress in Ultrafast Intense Laser Science XII*: Springer Series in Chemical Physics, eds. L. Roso, R. Li and K. Yamanouchi, (Springer-Verlag, Berlin) (IN PRESS)
- “Contact resistance and phase slips in mesoscopic superfluid atom transport,” Jeffrey Lee, S. Eckel, F. Jendrzejewski, G. K. Campbell, C. J. Lobb and W. T. Hill, III, arXiv:1506.08413v2 [cond-mat.quant-gas] 4 Aug 2015.
- “Ionization suppression in Xe induced with phased-locked pulses,” D. B. Foote, J. Lee, G-Y Chen, Y. Lin and W. T. Hill, III, (to be submitted PRA).

``Controlling ionization and molecular dynamics with phase-locked pulses,' G-Y. Chen, J. Lee, H. U. Jang, D. B. Foote and W. T. Hill, III, (to be submitted PRL).

``Shaped-pulse control of molecular dynamics,' J. Lee, H. U. Jang, G-Y. Chen, D. B. Foote and W. T. Hill, III, (to be submitted to PRL).

2. Books

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3. Book Chapters

“Encouraging and Preparing Students for Careers as PreCollege and College Faculty,” in *America's Academic Future: A Report of the Presidential Young Investigator Colloquium on U.S. Engineering, Mathematics, and Science Education for the Year 2010 and Beyond*, M.S. Mizruchi, L.M. Abriola, C.R. Doering, P.D. Gould, W.T. Hill, C.R.F. Lund, L. Molter, M. Ramulu and P. Sarnak, Directorate for Education and Human Resources, National Science Foundation Publication # NSF 91-150, January 1992.

“Atoms, Molecules, and Light: AMO Science Enabling the Future,” C.K. Patel, W.T. Hill, III, P.H. Bucksbaum, W. Ketterle, K. Kirby, D. Kleppner, P. Meystre, W.E. Moerner, M.M. Murnane, W.D. Phillips and R.E. Slusher (<http://stills.nap.edu/books/0309086132/html/>), The National Academies Press, Washington DC, 2002)

“Electromagnetic Radiation,” W. T. Hill, III, in the Encyclopedia of Applied Spectroscopy, D.L. Andrews (Ed.) Copyright © 2009 WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim, ISBN 978-3-527-40773-6.

4. Other Articles

“Encouraging and Preparing Students for Careers as PreCollege and College Faculty,” in *America's Academic Future: A Report of the Presidential Young Investigator Colloquium on U.S. Engineering, Mathematics, and Science Education for the Year 2010 and Beyond*, M.S. Mizruchi, L.M. Abriola, C.R. Doering, P.D. Gould, W.T. Hill, C.R.F. Lund, L. Molter, M. Ramulu and P. Sarnak, Directorate for Education and Human Resources, National Science Foundation Publication # NSF 91-150, January 1992.

B. Invited Presentations at Conferences and Symposia

"VUV Spectroscopy of the $5p^5$ ns,nd Discrete and Autoionizing Resonances in Ba^{++} ," Workshop on Techniques for Production and Utilization of Polarized Radiation in the VUV, Imperial College, London, England, August 17-21, 1982. (30 minutes)

"Excited State Dynamics of Small Molecules," Workshop on Minorities in Research, National Science Foundation, Washington, DC, 1984. (30 minutes)

"Laser-Driven Ionization of Condensing Vapors Laser Fragmentation of Metal Clusters," Annual Meeting of the National Society of Black Physicists, University of the District of Columbia, Washington, DC, April 22-23, 1985. (30 minutes)

"Laser Generated Plasmas in Atomic Vapors," Workshop on Lasers and Laser-Plasma Interactions, University of Maryland, College Park, MD, October 29, 1986. (30 minutes)

"High Precision Measurements of Vapor Densities," Eighth International Conference on Laser Spectroscopy 1987 (EICOLS), Åre, Sweden, June 22-27, 1987. (poster)

"Molecular Fragmentation by Intense, Tunable UV Lasers," Eleventh Annual Meeting of the National Society of Black Physicists, Philadelphia, PA., April 6-9, 1988. (30 minutes)

"Fragmentation Dynamics in Small Molecules," National Science Foundation Workshop on Increasing the Participation of Minorities in Science and Engineering -- A National Imperative, Washington, DC, March 20 - 21, 1989. (30 minutes)

"Competition Between Multiphoton Ionization and Multiphoton Dissociation in Diatomic Molecules," XVII International Quantum Electronics Conference, Anaheim, CA, May 21-25, 1990. (20 minutes)

"The Influence of Intermediate States in Multiphoton Fragmentation Processes in Small Molecules," NATO Advanced Workshop on Coherence Phenomena in Atoms and Molecules in Laser Fields, McMaster University, Ontario, Canada, May 5-10, 1991. (poster)

"Photofragmentation I: The Study of Nonequilibrium States in Diatomic Molecules," International Workshop on the Physics and Modern Applications of Lasers, Université Cheikh Anta Diop de Dakar, Dakar, Senegal, May 22-28, 1991. (60 minutes)

"Photofragmentation II: Laser Induced Molecular Dynamics," International Workshop on the Physics and Modern Applications of Lasers, Université Cheikh Anta Diop de Dakar, Dakar, Senegal, May 22-28, 1991. (60 minutes)

Anecdotal remarks about Arthur L. Schawlow given at the "Arthur Schawlow Symposium," in honor of his retirement, Stanford University, November 2, 1991. (10 minutes)

"Lasers and Atomic Molecular and Optical Physics," Second International Workshop on the Physics and Modern Applications of Lasers, Harare Zimbabwe, September, 1993. (I was invited to give four 60 min lectures but time conflicts and monetary constraints prevented me from attending.)

"Exploding Molecules with Intense Light: Do Coulomb Explosions Really Occur?" Multiphoton Processes Gordon Research Conference, Colby Sawyer College New London, NH, June 13-17, 1994. (60 min.)

"Atoms and Molecules in Intense Laser Fields," Second Annual Research Center for Optical Physics Forum, Hampton University, Hampton VA, September 23-24, 1994. (30 min.)

"Atoms and Molecules in Intense Laser Fields: An Introduction and Progress Report," Atomic Physics Gordon Research Conference, Brewster Academy, Wolfboro, NH, July 3-7, 1995. (20 min)

"Correlated Electron-Ion Ejection Induced by Intense-Field Dissociative Ionization," (with J. Zhu) Annual Meeting of the Optical Society of America, Rochester, NY, October 21-24, 1996. (30 min)

"Correlated Dissociative Ionization in Intense Laser Fields," Annual meeting of the Division of Atomic, Molecular and Optical Physics (DAMOP) of APS, Washington, DC, April 18-21, 1997. (30 min).

"Atoms and Molecules in Intense Laser Fields: What Can We Learn?" Annual meeting of the National Society of Black Physicists, University of Kentucky, Lexington, March 5-7, 1998. (20 min).

"Light Tunnels," International Workshop on Spectroscopy and Applications, Dakar Senegal, Dec 14 – 18, 1998. (60 min).

"Strong-Field Atomic and Molecular Dynamics," International Workshop on Spectroscopy and Applications, Dakar Senegal, Dec 14 – 18, 1998. (60 min).

"Hollow Laser Beams: Building Blocks for Atom Optics," Townes Festival, TAMU-ORN Workshop on Quantum Optics, Jackson Hole Resort, Teton Village, Wy, July 31 – August 4, 2000 (30 min).

"Hidden Correlation in Strong-Field Dissociative-Ionization: A Possible Route for Quantum Control," 31st Winter Colloquium on The Physics of Quantum Electronics, Snowbird, UT, January 7 – 11, 2001 (20 min).

"Atoms, Molecules and Light: AMO Science Shaping the Future," National Society of Black Physicists, Stanford University, Stanford, CA March 29 – April 1, 2001 (40 min).

"Atoms, Molecules and Light: AMO Science Shaping the Future," 4th Bouchet Conference, Cotonou, Benin, August 6-10, 2001 (20 min).

"Strong-Field Imaging of Molecular Dynamics," TAMU-ONR-DARPA Workshop on Quantum Optics, Grand Teton Resort, Wyoming, July 6-11, 2003 (30 min).

"Strong-Field Dissociative-Ionization mediated by enhanced ionization at the critical radius or electron screening? You be the judge!" First Canadian Workshop on Ultrafast Dynamics Imaging, Auberge Cherbourg, Orford, Quebec, Canada, September 30 – October 3, 2003 (30 min).

"Hollow Beams to Atom Tunnels: Building Channels for Coherent Transport," Joint Institute for Coherent Quantum Phenomena Workshop, University of Maryland, College Park, MD January 14-15, 2004 (30 min).

- “Two-Dimensional Spatial Light Modulators: A New Tool for Quantum and Atom Optics,” Photonics Technology Access Program (PTAP) Workshop, Kauai, HI April 19-20, 2004 (25 min).
- “Coulomb Explosion Imaging: Molecular Dynamics Exposed,” Hot Topics Session of the Annual meeting of the Division of Atomic, Molecular and Optical Physics of the American Physical Society, DAMOP 2004, University of Arizona, Tucson, AZ, May 26-29, 2004 (30 min).
- “Coulomb Explosion Imaging: Revealing Precursor Structure and Explosion Anisotropies,” Third International Symposium on Ultrafast Intense Laser Science (ISUILS-3), Palazzo Steri and Città del Mare, Palermo, Italy, September 16-20, 2004 (30 min).
- “Strong-field dynamics I: experimental approaches,” Intense Laser-Matter Interaction and Pulse Propagation Seminar and Workshop, August 1-24, 2005, Dresden, Germany (90 min).
- “Strong-field dynamics II: examples, mostly molecular,” Intense Laser-Matter Interaction and Pulse Propagation Seminar and Workshop, August 1-24, 2005, Dresden, Germany (90 min).
- “Freezing Atomic Motion and Visualizing Field-Induced Structure Deformation,” International Symposium on Ultrafast Intense Laser Science (ISUILS-4), Kailua-Kona, HI, December 10 - 14, 2005 (20 min).
- “Rising Above the Background,” W. T. Hill, III, K Zhao, G. M. Menkir G-Y Chen and L. N. Elbersson, International Symposium on Ultrafast Intense Laser Science (ISUILS-5), Lijiang, China, November 28 – December 2, 2006 (20 min).
- “Atomic, Molecular and Optical Physics: A Tutorial,” Annual Meeting of the National Society of Black Physicists, Boston, MA February 21 - 24, 2007. (20 min)
- “All-Optical Manipulation and Control: Towards Coherent Transport of Atomic Ensembles,” I. V. Arakelyan, N. Chattrapiban, S. Mitra and W. T. Hill, III, International Conference on Quantum Information, June 13 - 15, 2007, University of Rochester. (20 min)
- “Coulomb Explosion Imaging: Towards the Control of Intramolecular Dynamics”, G. -Y. Chen, G. M. Menkir and W. T. Hill, III, Third US-African Advanced Institute: Environmental and Biological Applications of Lasers, EBAL 2008, Cairo Egypt, January 19 – 28, 2008 (2 hrs).
- “Atomic, Molecular and Optical Physics: A Tutorial,” Annual Meeting of the National Society of Black Physicists, Washington, DC, February 20 - 23, 2008 (20 min).
- “Deciphering Optimal Control Fields”, International Symposium on Ultrafast Intense Laser Science (ISUILS-8), Elounda Bay Palace, Crete, Greece, October 3-7, 2009 (20 min).
- “Problems seeking a laser,” Vision Lecture at the International School on Quantum and Nano Computing Systems and Applications (QANSAS 2009), Dayalbagh Educational Institute (Deemed University), Dayalbagh, Agra, India, December 2 – 5, 2010 (60 min).
- “Shaped-pulse control of spatially entangled strong-field Coulomb explosion channels,” Discussion Leaders Session Introduction, International Symposium on Ultrafast Intense Laser Science (ISUILS-9), Lahaina, Maui, HI, December 9 – 14, 2010 (15 min).

“Optical potentials used for cold atoms science”, Sao Paulo School of Advanced Science – New Trends in Quantum Matter with Cold Atoms and Molecules, Instituto de Fisica de São Carlos, Universidade de São Paulo, April 4 – 14, 2011, São Carlos, Brazil.

“AMO Science at NSF,” Business Meeting, DAMOP 2011, June 13-17, Atlanta, GA (15 min).

"First Demonstration of an Atomtronic Analog of Basic Electronic Circuit Elements," Jeff Lee, C R. Lobb and W. T. Hill, III, IQEC/CLEO Pacific Rim 2011, August 29 – September 2, 2011, Sydney Australia.

“Attosecond Science and PW-Class Laser Facilities in the US,” Science with PW-Class Lasers, First Meeting, January 23-24, 2012, Paris, France (15 min).

“Arbitrary Dipole Potentials for Ultracold Atoms: Atomtronics with Free-Space Atom Chips,” Advanced Computational and Experimental Techniques in Nonlinear Dynamics, February 20 – 24, 2012, Puebla, Mexico (35 min).

“Ultracold gas dynamics in confined geometries: not your grandfather’s dynamics: Part I,” Workshop on Advanced Computational and Experimental Techniques in Nonlinear Dynamics, Cusco, Peru, May 10, 2013 (60 min).

“Ultracold gas dynamics in confined geometries: not your grandfather’s dynamics: Part II,” Workshop on Advanced Computational and Experimental Techniques in Nonlinear Dynamics, Cusco, Peru, May 10, 2013 (60 min).

“Probing CEP-Dependent Dynamics Without CEP Stabilization,” Short Pulse Strong Field Laser Physics International Symposium Honoring See Leang Chin, Quebec City, Canada, May 21-24, 2013 (25 min).

“Unveiling the critical role of phase in strong-field optimal control,” 22th International Laser Physics Workshop (LPHYS’13), July 15–19, 2013, Prague, Czech Republic (25 min).

“Unveiling the critical role of phase in strong-field optimal control,” Introduction and Discussion Leader: Atoms and molecules in intense laser fields II, ISUILS12, Salamanca, Spain October 6 – 11, 2013. (20 min).

“Graphene interaction with intense laser fields: some experimental considerations,” Introduction to Graphene interaction with intense laser fields, ISUILS13, Jodhpur, India, October 5 – 10, 2014 (20 min).

“The phylogeny of laser induced proton acceleration: a novel way forward,” IV Users meeting of CLPU (Centro de Lasers Pulsados), Salamanca, Spain, December 2-3, 2014

“Dissipation and collective excitation in atomic BEC transport,” 2015 Conference of the national Society of Black Physicists, Baltimore, MD, February 25-2, 2015.

“TBD,” Symposium #35 Ultrafast Intense Laser Chemistry, 2015 International Congress of Pacific Basin Societies (Pacifichem, <http://www.pacifichem.org/>), Honolulu, HI, December 15-20, 2015.

C. Contributed Conference Papers

"Intracavity Absorption Spectroscopy," (with R. A. Abreu, T. W. Hansch and A. L. Schawlow), Annual Meeting of the Optical Society of America, Chicago, IL, October 14-17, 1980.

"Effects of Valence Electrons on Core Absorption in Ba, Ba⁺, and Ba⁺⁺ Sequence," (with T. B. Lucatoro, T. J. McIlrath and J. Sugar), Annual Meeting of the Division of Electron and Atomic Physics of the American Physical Society, NY, December 4-6, 1981.

"Quantum Defect Studies of the Rydberg Levels in Xe-like Ba⁺⁺," (with T. B. Lucatoro, T. J. McIlrath and J. Sugar), Annual Meeting of the Division of Electron and Atomic Physics of the American Physical Society, NY, December 4-6, 1981.

"VUV Spectroscopy of the 5p⁵ ns,nd Discrete and Autoionizing Resonances in Ba⁺⁺," Seventh International Colloquium on Ultraviolet and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, University College, Dublin, Ireland, August 30 - September 1, 1982.

"High-Resolution Photoabsorption Spectrum of Cs⁺(5p⁶ ¹S₀ 5p⁵ ns,nd) Between 504 Å and 600 Å Using Laser Ionized Cs Vapor Column," Eighth International Colloquium on Ultraviolet and X-Ray Spectroscopy of Astrophysical and Laboratory Plasmas, Naval Research Laboratory, Washington, DC, August 27-29, 1984.

"High Precision Measurements of Atomic Number Density," (with K. Ueda), Annual Meeting of the Optical Society of America, Washington, DC, October 15-18, 1985.

"Alignment of O Following Photoionization of O₂ Between 17 and 21 eV," (with J. W. Keller and D. L. Ederer), Eighth International Vacuum Ultraviolet Radiation Conference (VUV-8), Lund University, Lund, Sweden, August 4-8, 1986.

"Metal Vapor Oven-Column Density Meter: An Apparatus for Absolute Cross Section Measurement," (with K. Ueda), Eighth International Vacuum Ultraviolet Radiation Conference (VUV-8), Lund University, Lund, Sweden, August 4-8, 1986.

"Photofragmentation Dynamics of Molecular Oxygen," (with J. W. Keller and D. L. Ederer), Annual Meeting of the Optical Society of America, Seattle, WA, October 19-25, 1986.

"Excimer Laser Ablation for High Temperature Superconductor Thin Films," (with R. A. Neifeld, M. Croft, S. Gunapala, S. A. Shaheen, J. Cline, H. Nelson and A. Baronovski), George Washington University/The Institute for Strategic Studies Symposium on the Science and Technology of High Temperature Conductors, Washington, DC, October 9, 1987.

"Multiphoton Fragmentation of CO₂ at 193 nm," (with B. P. Turner), Annual Meeting of the Optical Society of America, Rochester, NY, October 18-23, 1987.

"Photodecomposition of CO₂ by 193 nm Radiation," (with B. P. Turner), International Laser Science Conference (ILS-III), Atlantic City, NJ, November 2-5, 1987.

"Photofragmentation of Small Molecules by Tunable UV Lasers," (with B. P. Turner) Annual Meeting of the Division of Atomic, Molecular and Optical Physics of the American Physical Society, Baltimore, MD, April 18-20, 1988.

"Laser Ablation of High Temperature Superconductors for Thin Films," (with R. A. Neifeld, M. Croft, S. A. Shaheen, S. Gunapala, G. Liang, J. Cline, C. Austertag and J. Price), Meeting of the American Physical Society, New Orleans, LA, March 1988.

"Systematics of Excimer Laser Ablation: Thin Film Preparation of High T_c Material," (with R. A. Neifeld, S. Gunapala, G. Liang, M. Croft, S. A. Shaheen and J. Cline), Northeast Regional Meeting - High T_c Conference of the Materials Research Society of the American Physical Society, Piscataway, NJ, May 1988.

"Systematics of Excimer Laser Ablation: Optical Properties of Ablation Plumes from High T_c Material," (with A. Hansen, R. A. Neifeld, S. Gunapala, G. Liang, M. Croft, S. A. Shaheen and D. Ginby), International Laser Science Conference (ILS-IV), Atlanta, GA, October 2-6, 1988.

"Laser Ablation of High T_c Material in the Presence of an Oxygen Plasma," (with A. Hansen, R. A. Neifeld, S. Gunapala, G. Liang, M. Croft, S. A. Shaheen and D. Ginby), Annual Meeting of the Optical Society of America, Santa Clara, CA, October 30 - November 4, 1988.

"Influence of Intermediate Resonances on Multiphoton Dissociation and Ionization Channels in Diatomic Molecules," (with B. P. Turner, S. Yang and J. Zhu), Conference on Quantum Electronics and Laser Science (QELS '89), Baltimore, MD, April 24-28, 1989.

"Excimer-Laser Based Photofragmentation Instrument," (with J. Zhu, B. P. Turner, S. Yang and A. Pinkas), Conference on Quantum Electronics and Laser Science (QELS '89), Baltimore, MD, April 24-28, 1989.

"Ion Time-of-Flight Studies from Laser Ablated $Y_1Ba_2Cu_3O_7$," (with R. A. Neifeld, A. Tauber and B. P. Turner), Fall Meeting of the Materials Research Society, November 1989.

"Spectroscopic Engineering of Multiphoton Fragmentation Channels in Diatomic Molecules," (with B. P. Turner, S. Yang, J. Zhu and D. L. Hatten), International Conference on Multiphoton Processes (ICOMP V), Paris, France, September 24-28, 1990.

"Generation of Picosecond Pulses Using Simple Distributed Feedback Dye Lasers with Holographic Transmission Grating," (with T. N. Ding, Y. Cui, J. Goldhar, D. L. Hatten, and T. Mikes), Conference on Lasers and Electro-Optics (CLEO), Baltimore, MD, May 12-17, 1991.

"Intense Field Multiphoton Fragmentation of Diatoms, with 193 nm Radiation," (with D. L. Hatten, J. Zhu, Y. Cui, S. Yang and J. Goldhar), Annual Meeting of the Division of Atomic, Molecular and Optical Physics (DAMOP) of the American Physical Society, Chicago, IL, May 19-22, 1992.

"Competition Between Photoionization and Predissociation in O_2 at 193 nm", (with S. Yang, Y. Cui, D. L. Hatten, J. Zhu and J. Goldhar), Annual Meeting of the Division of Atomic, Molecular and Optical Physics (DAMOP) of the American Physical Society, May 19-22, 1992. (10 minutes)

"Multiphoton Dissociation Ionization Dynamics of Light Diatomic Systems Induced by 10 ps, 193 nm Radiation," (with D. L. Hatten, J. Zhu, Y. Cui, J. Goldhar and S. Yang) Multiphoton Processes Gordon Conference, Colby-Sawyer College, New London, New Hampshire, June 8-12, 1992. (Poster)

"Frequency Tuning of a DFB Dye Laser with Two Transmission Gradings," (with Y. Cui, T.N. Ding, J. Goldhar and D.L. Hatten), Conference on Lasers and Electro-Optics (CLEO), Baltimore, MD, May 2-7, 1993. (13 min)

"Competition Between Dissociation and Ionization in O₂ and the Two-Photon Cross Section of O₂, at 193 nm: A Combined Experimental-Theoretical Investigation," (with S. Yang and S.N. Dixit), Quantum Electronics and Laser Science Conference (QELS), Baltimore, MD, May 2-7, 1993. (Poster)

"Quasi-Coulomb Explosion Model of Intense-Field Dissociative Ionization of Diatoms," (with J. Zhu, D.L. Hatten, S. Yang, Y. Cui, and J. Goldhar), Quantum Electronics and Laser Science Conference (QELS), Baltimore, MD, May 2-7, 1993. (13 min)

"Precision Lifetime Measurements in Atomic Cesium", (with L. Young, S.J. Sibener, S. Price, C.E. Wieman, S.R. Leone and C.E. Tanner), Eleventh International Conference on Laser Spectroscopy (ELICOLS), Hot Springs, VA, June 13-18, 1993. (Poster)

"Quasi-Coulomb Explosion Model of Multiply Ionized diatoms," (with D.L. Hatten, S. Yang, J. Zhu, Y. Cui and J. Goldhar), 6th International Conference on Multiphoton Processes (ICOMP VI), Quebec City, Canada, June 26-30, 1993. (3 min + Poster)

"Precision Lifetime Measurements by Single Photon Counting," (with L. Young, S.J. Sibener, S.D. Price, C.E. Tanner, C.E. Wieman and S.R. Leone), Annual Meeting of the Division of Atomic, Molecular and Optical Physics of the American Physical Society, Crystal City, VA, April 18-22, 1994. (15 min.)

"Precision Lifetime Measurements of Cs 6p ²P_{1/2} and 6p ²P_{3/2} by Single Photon Counting," (with L. Young, S.J. Sibener, S.D. Price, C.E. Tanner, C.E. Wieman and S.R. Leone), International Conference on Atomic Physics (ICAP), University of Colorado, Boulder, CO, August 1-5, 1994. (Poster)

"Above Threshold Dissociation in CO²⁺ at High Frequency," (with D.L. Hatten, J. Zhu and J. Goldhar) Quantum Electronics and Laser Science Conference (QELS), Baltimore, MD, May 22-26, 1995. (13 min)

"4π Electron-Ion Detector," (with J. Zhu), Quantum Electronics and Laser Science Conference (QELS), Baltimore, MD, May 22-26, 1995. (Poster)

"Autoionizing Rydberg wavepackets," (with F. Robicheaux), Annual Meeting of the Division of Atomic, Molecular and Optical Physics (DAMOP) of the American Physical Society, University of Michigan, Ann Arbor, MI, May 15-18, 1996. (Poster).

"Correlated Electron-Ion Ejection Induced by Intense-field Dissociative Ionization," (with J. Zhu), Quantum Electronics and Laser Science Conference (QELS), Anaheim, CA, June 2-7, 1996. (15 min)

"Ion and Electron Ejection Correlation in Dissociative Ionization Spectra" (with J. Zhu), 7th International Conference on Multiphoton Processes (ICOMP VII), Garmisch-Partenkirchen, Germany, September 30 - October 4, 1996. (Poster)

“Coulomb Explosion of H_2^+ ” (with G. Zhang and J. Zhu), Annual meeting of the Division of Atomic, Molecular and Optical Physics (APS), Santa Fe, NM, May 27-29, 1998. (12 min)

“Correlated Multiphoton Double Ionization of Xe: A Direct Measurement” (with G. Zhang and J. Zhu), Annual meeting of the Division of Atomic, Molecular and Optical Physics (APS), Santa Fe, NM, May 27-29, 1998. (poster)

“Imaging Dissociative Ionization Dynamics of CO_2 ,” (with G. Zhang and J. Zhu),⁺ Annual meeting of the Division of Atomic, Molecular and Optical Physics (APS), Santa Fe, NM, May 27-29, 1998. (poster)

"Robustness of the Critical Internuclear Separation in Strong Field Dissociative-Ionization" (with G. Zhang), Annual Meeting of the Optical Society of America/ILS-XIV, Baltimore, MD, October 5-9, 1998. (poster-only symposium).

"Hollow Beam Atom Tunnel" (with Y. Song), Annual Meeting of the Optical Society of America/ILS-XIV, Baltimore, MD, October 5-9, 1998. (post deadline paper)

“Dark Hollow Beam Atomic Tunnel” (with Y. Song), Annual Meeting of the Optical Society of America/ILS-XIV, Baltimore, MD, October 5-9, 1998. (12 min).

“Dark Hollow Beam Atom Tunnel,” (with Y. Song)) 1999 American Physical Society Centennial Meeting, Atlanta, GA March 22 – 26, 1999 (15 min).

“Imaging Strong-Field Atomic and Molecular Dynamics,” (with K Zhao and F. Adamietz) 1999 American Physical Society Centennial Meeting, Atlanta, GA March 22 – 26, 1999 (poster).

"Imagine Multiple-Component Ejection Correlation," (with K. Zhao, H Zhou, G. Zhang and F. Adamietz), 8th International Conference on Multiphoton Processes (ICOMP VIII), Monterey, CA, October 3-8, 1999 (poster).

“High Efficiency All-Light Atom Guide” (with Y. Song), Quantum Electronics and Laser Science Conference (QELS), San Francisco, CA, May 7-12, 2000. (12 min).

“2-D Imaging of Multicomponent Strong-Field Dynamics in 3-Body Coulomb Explosion” (with K. Zhao), Annual meeting of the Division of Atomic, Molecular and Optical Physics (APS), University of Connecticut, Storrs, CT June 14-17, 2000 (15 min).

“Angular Resolved Three-Atom *Coulomb Explosion*” (with K. Zhao), Annual meeting of the Division of Atomic, Molecular and Optical Physics (APS), College of William and Mary, Williamsburg, VA May 30 - June 1, 2002 (15 min).

“Image Labeling: a Graphical Interface to Dynamics in Multiparticle Ejection” (with K. Zhao), Annual meeting of the Division of Atomic, Molecular and Optical Physics (APS), College of William and Mary, Williamsburg, VA May 30 - June 1, 2002 (poster).

“Electron Dynamics and Molecular Coulomb Explosion: Critical Radius vs Dynamic Screening” (with K. Zhao), Annual meeting of the Division of Atomic, Molecular and Optical Physics (APS), University of Colorado, Boulder, CO, May 20-24, 2003 (12 min).

“Strong-Field Structural Changes in 3-Atom Systems,” 2003 Conference on Super Intense Laser Atom Physics, SILAP03, Southfork Ranch, Dallas TX, November 16-19, 2003 (15 min).

“Coulomb Explosion Imaging in Linearly and Elliptically Polarized Fields,” (with K. Zhao, L. N. Elberson, S. A. Hughes and D. Cofield), Annual Meeting of the Optical Society of America/ILS-XX, University of Rochester, New York, October 10-14, 2004 (poster).

“Laser Beams with embedded vortices: Tools for Atom Optics,” (with N. Chatttrapiban, I. Arakelyan, E. Rogers, Ph. Land and R. Roy), Annual Meeting of the Optical Society of America/ILS-XX, University of Rochester, New York, October 10-14, 2004 (poster).

“Novel Molecular Dynamics Induced by Intense Elliptically Polarized Fields,” (with K. Zhao, L. N. Elberson and G. M. Menkir), International Symposium on Atoms, Molecules, and Clusters in Intense Laser Fields 2, The University of Tokyo, Tokyo, Japan, January 24 & 25, 2005 (poster).

“Genetic Algorithm for Spatial Light Modular-Based Pulse Shaper,” (with Ph. Land, G. M. Menkir and L. N. Elberson), 2005 Joint Annual Conference of the National Society of Black Physicists and the National Society of Hispanic Physicists, Orlando, FL, February 16-19, 2005 (poster).

“Dark Hollow Laser Beam Based Neutral Atom Beam Switch and Divider,” (with I. Arakelyan, N. Chatttrapiban, S. Mitra and A. M. Diacou), Quantum Electronics and Laser Science Conference (QELS), Baltimore, MD, May 22-27, 2005 (15 min).

“Guiding Atoms with Light,” (with N. Chatttrapiban and I. Arakelyan), Atomic Physics Gordon Conference, Tilton, NH, June 26 - July 1, 2005 (poster).

“Neutral Atom Beam Divider,” (with I. Arakelyan and N. Chatttrapiban), Atomic Physics Gordon Conference, Tilton, NH, June 26 - July 1, 2005 (poster).

“Coherent Control of Coulomb Explosion,” (with G. M. Menkir and L. N. Elberson) Intense Laser-Matter Interaction and Pulse Propagation Seminar and Workshop, August 1-24, 2005, Dresden, Germany (poster).

“Imaging Molecular Dynamics With Fast-Frame CCD Cameras,” (with G. M. Menkir and L. N. Elberson) Intense Laser-Matter Interaction and Pulse Propagation Seminar and Workshop, August 1-24, 2005, Dresden, Germany (poster).

“Optical beams with embedded vortices: building blocks for atom optics and quantum information,” (with N. Chatttrapiban, I. Arakelyan and S. Mitra) Annual Meeting of the Division of Atomic, Molecular and Optical Physics of the American Physical Society, May 16-20, 2006 Knoxville, Tennessee (12 min).

“Donut modes and photonic hollow fibers: a possible scheme for atom transport,” (with S. Mitra, J. Smith, N. Chatttrapiban and I. Arakelyan) Annual Meeting of the Division of Atomic, Molecular and Optical Physics of the American Physical Society, May 16-20, 2006 Knoxville, Tennessee (poster).

“Direct Measurement of Dynamic Alignment in Strong Femtosecond Fields,” (with K. Zhao, L. N. Elberson, G. M. Menkir and M. Laich) Annual Meeting of the Division of Atomic, Molecular and Optical Physics of the American Physical Society, May 16-20, 2006 Knoxville, Tennessee (12 min).

"All-Optical Manipulation and Control of Neutral Atomic Ensembles," (with I. V. Arakelyan, N. Chatttrapiban, S. Mitra) SPIE Optics & Photonics 2007: Nanoscience and Engineering, Optical Trapping and Optical Micromanipulation IV, San Diego, August 26 - 28, 2007.

"Cold atom cloud evolution in optical tunnels," (with N. Chatttrapiban, S. Mitra and I. Arakelyan), Annual Meeting of the National Society of Black Physicists, February 20-23, 2008, Washington, DC (15 min).

"Shaped pulse and dynamics of CO₂ Coulomb explosion," (with G-Y Chen, G. Menkir and Z Wang), Annual Meeting of the National Society of Black Physicists, February 20-23, 2008, Washington, DC (15 min).

"Fast conditional quantum gate based on Rydberg blockade phenomenon," (with I. Arakelyan, J. Robinson, E. Edwards, M Beeler and S. L. Rolston), Annual Meeting of the National Society of Black Physicists, February 20-23, 2008, Washington, DC (poster).

"Coulomb explosion imaging with shaped pulses," (with G-Y Chen, S. Iacangelo and Z Wang), Annual Meeting of the National Society of Black Physicists, February 20-23, 2008, Washington, DC (poster).

"Cold atom cloud evolution in optical tunnels," (with N. Chatttrapiban, S. Mitra and I. Arakelyan), Annual Meeting of the Division of Atomic, Molecular and Optical Physics, APS, May 27-31, 2008, Pennsylvania State University (12 min).

"Shaped pulse and dynamics of CO₂ Coulomb explosion," (with G-Y Chen, G. Menkir and Z Wang), Annual Meeting of the Division of Atomic, Molecular and Optical Physics, APS, May 27-31, 2008, Pennsylvania State University (12 min).

"Coulomb explosion imaging with shaped pulses," (with G-Y Chen, S. Iacangelo and Z Wang), Annual Meeting of the Division of Atomic, Molecular and Optical Physics, APS, May 27-31, 2008, Pennsylvania State University (poster).

"Adaptive Control with Two-Dimensional Fitness Parameters," (with G.-Y. Chen, Z. W. Wang), International Symposium on Ultrafast Intense Laser Science (ISUILS-7), November 25-28, 2008, Kyoto, Japan (poster).

"Adaptive control of CO₂ bending vibration: Deciphering field-system dynamics," (with G.-Y. Chen, Z. W. Wang), International Symposium on Ultrafast Intense Laser Science (ISUILS-7), November 25-28, 2008, Kyoto, Japan (poster).

"Hot Electron Confinement in High Intensity Laser-Matter Interactions", L. N. Elberson, Y. Ping, S. Wilks, R. Shepherd, A. MacKinnon and P. Patel and W. T. Hill, III, Annual Meeting of the Division of Plasma Physics, APS November 2-6, 2009, Atlanta, GA (poster).

"Radiation Reaction and Plasma Mirrors" N. Cole, S. Wilkes and W. T. Hill, III, Workshop on Antimatter Creation Using Intense Lasers, Berkeley, CA April 27 & 28, 2010 (15 min).

"Deciphering optimal control fields", G-Y. Chen and W. T. Hill, III, 41st Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, May 25-29, 2010, Houston, TX (12 min).

- ``Strong-field optimal control with 2D learning algorithms'' G-Y. Chen, B. Crist and W. T. Hill, III 41st Annual Meeting of the APS Division of Atomic, Molecular and Optical Physics, May 25-29, 2010, Houston, TX (poster).
- ``Free space atom chips'' J. Lee, B. McIlvain and W. T. Hill, III, 22nd International Conference on Atomic Physics, Cairns, Australia, July 25 – 30, 2010 (poster).
- ``Dynamic versatility of hollow optical tunnels'' N. Chattapiban and W. T. Hill, III, 22nd International Conference on Atomic Physics, Cairns, Australia, July 25 – 30, 2010 (poster).
- ``Looking inside the black box: deciphering optimal controls fields'' G-Y Chen, B. Crist and W. T. Hill, III, International Symposium on Ultrafast Intense Laser Science (ISUILS-9), Lahaina, Maui, HI, December 9 – 14, 2010 (poster)
- ``Extracting strong-field dynamics from Coulomb explosion imaging simulations'' B. Crist, G.-Y. Chen and W. T. Hill, III, Symposium on Undergraduate Research, Division of Laser Science of the APS, Rochester, NY, October 25, 2010 (poster).
- ``Free space atom chips'' B. McIlvain and W. T. Hill, III, Undergraduate Symposium, Rochester, NY, October 25, 2010 (poster).
- ``Dynamic versatility of hollow optical tunnels'' N. Chattapiban and W. T. Hill, III, Siam Physics Congress SPC2011, Pattaya, Chonburi, Thailand, March 23-26, 2011.
- "Neutral Atom Analog of a Capacitor via Sharvin Conductance" Jeff Lee and W. T. Hill, III, Atomic Physics Gordon Conference, June 26 - July 1, 2011, Mount Snow Resort West Dover, VT (poster).
- ``Searching for new control knobs by deciphering optimal control pulses,'' Hyounguk Jang, G.-Y. Chen and W. T. Hill, III, Quantum Control of Light & Matter Gordon Conference (Poster Session), July 31 - August 5, 2011, Mount Holyoke College, South Hadley, MA.
- "Arbitrary Dipole Potentials for Ultracold Atoms: Free-Space Atom Chips," Jeff Lee and W. T. Hill, III, IQEC/CLEO Pacific Rim 2011, August 29 - September 2, 2011, Sydney, Australia (poster).
- ``Fundamental Atomtronic Circuit Elements,'' Jeffrey Lee, Brian McIlvain, C. Lobb and W. T. Hill, III, 43rd Annual Meeting of the Division of Atomic, Molecular and Optical Physics of the APS (DAMOP12), June 4-8, 2012, Anaheim, CA (12 min).
- ``Phase control with many cycle pulses in the absence of CEP stabilization,'' Hyounguk Jang, C.-Y. Chen and W. T. Hill, III, 43rd Annual Meeting of the Division of Atomic, Molecular and Optical Physics of the APS (DAMOP12), June 4-8, 2012, Anaheim, CA (12 min).
- ``Fundamental Atomtronic Circuit Elements.'' Jeffrey Lee, Brian McIlvain, C. Lobb and W. T. Hill, III, ICAP2012, July 23-27, 2012, Paris, France (poster).
- ``The role of phase in strong-field optimal control,'' J. Lee, H. U. Jang, G.-Y. Chen and W. T. Hill, III (Poster) ISUILS11, Oct 22-26, 2012, JeJu, Korea.
- ``On the phase dependent dissociation process of highly charged CO₂ ionization channels in laser induced Coulomb explosion," J. Lee, H. U. Jang, G.-Y. Chen and W. T. Hill, III (Poster) ISUILS-12, October 6 - 11, 2013, Salamanca, Spain.

“Superfluid atom circuits,” Jane Lee, A. Kumar, S. Eckel, F. Jendrzejewski, W. Phillips, G. Campbell, C. Lobb and W. T. Hill, III (Poster Session III) DAMOP 2013, June 3 – 7, 2013, Quebec City, Canada.

“Unveiling the critical role of phase in optimal control pulses,” H. U. Jang, J. Lee, G.-Y. Chen and W. T. Hill, III, DAMOP 2013, June 3 – 7, 2013 Quebec City, Canada (12 min).

“Phase-dependent ionization suppression in atoms and molecules,” D. B. Foote, J. Lee, G.-Y. Chen and W. T. Hill, III, (Poster Session D1) DAMOP 2014, June 2 – 6, 2014, Madison, WI

“Laser acceleration of protons using neon-proton gaseous targets,” Tung-Chang Liu, X. Shao, C.-S. Liu, W. T. Hill, III, B. Eliasson, J. Wang and S.-H. Chen (Poster) ISUILS13, October 5 - 10, 2014, Jodhpur, India.

“Generation and Pulse Shaping of sub 15 fs Laser Pulses,” Yingda Lin, David Foote, and W. T. Hill, III, (Poster Session) Symposium on Undergraduate Research, Division of Laser Science of the APS, October 20, 2014, Tucson, AZ.

“Anomalous enhancement and suppression of ionization induced by an effective few-cycle pulse in the frequency domain,” D. B. Foote, J. Lee, Y. Lin and W. T. Hill, III, (Poster) DAMOP 2015, June 8-12, 2015, Columbus, OH.

D. Other Invited Presentations and Participations

Numerous Colloquia and Seminars given at Colleges, Universities and Research Institutions within the United States and abroad.

"Summer Science Enrichment Camp" presented at the National Institute of Standards and Technology Sigma Xi Symposium on "American High Schools: An F for Science! What to Do?" January 16, 1990. (20 minutes)

"Quantum Physics: Physics at Small Dimensions," Science Enrichment Program (SEP) for Junior High School Students, July 3, 1991, Hood College, Frederick, MD (60 minutes).

"A Career as a Physicists," Career Day at Middleton Valley Academy (5th & 6th graders), Temple Hills, MD, October 29, 1993, two talks (30 min ea).

"Laser Light," Demonstration to pre-K children at the Washington Christian School, Silver Spring, MD, May 2, 1995 (15 min).

"Light and Sound," (with F. Skiff) School Assembly give at Washington Christian School, Silver Spring, MD, December 8, 1995 three lectures. (30 min. ea)

"Mechanics," (with F. Skiff) School Assembly give at Washington Christian Academy, Silver Spring, MD, December 8, 1997. Two lectures (45 min. ea)

"Imaging Atomic and Molecular Dynamics," Tianjin University, Department of Physics, Tianjin China, June 29, 1999 (2 hrs)

"Strong Field Molecular Dynamics," Tianjin University, Department of Physics, Tianjin China, June 30, 1999 (2 hrs)

"Neutral Atom Tunnels and Funnels," Tianjin University, Department of Physics, Tianjin China, July 1, 1999 (2 hrs)

"Neutral Atom Tunnels and Funnels," Beijing University, Department of Physics, Beijing China, July 3, 1999 (2 hrs)

"Atoms and Molecules in Strong Laser Fields," Physics Research Institute, Xi'an, China, July 6, 1999 (3 hrs)

"Imaging Light-Induced Atomic and Molecular Dynamics," Plasma Physics Seminar, Department of Physics, University of Iowa, Iowa City, IA, October 2, 2000 (60 min)

"Manipulating Quantum States with Strong Light Fields," Department Colloquium, Department of Physics, University of Iowa, Iowa City, IA, October 2, 2000 (60 min)

"Intense Laser Fields: What To Do With Too Many Photons," Department Colloquium, Department of Physics, Texas A & M University, College Station, TX, November 16, 2000 (60 min)

"Atoms, Molecules and Light: AMO Science Shaping the Future," Special Seminar, Department of Physics, Texas A & M University, College Station, TX, March 23, 2001 (60 min)

“FAMOS Update Report,” Board on Physics and Astronomy of the National Academy of Sciences, Washington, DC, April 27, 2001 (20 min)

“Imaging, Correlation and Strong Laser Fields: Revealing Hidden Manybody Dynamics,” AMO Seminar, Lawrence Livermore National Laboratory, Livermore, CA, July 24, 2001 (60 min)

“Controlling and Manipulating Matter with Light,” Physics Colloquium, Department of Physics, Texas A & M University, College Station, TX, August, 2001 (60 min)

“Imaging, Correlation & Strong Laser Fields: Revealing Hidden Many-Body Dynamics,” AMO Seminar, Department of Physics, University of Texas, September 28, 2001 (60 min)

“Atoms, Molecules and Light: AMO Science Serving Society,” Sigma Xi Lecture, East Stroudsburg University, East Stroudsburg, PA, October 24, 2001 (60 min)

“Light,” Martin Luther King Lecture, Detroit Public Schools, Detroit, MI, November 14, 2001 (four 45 min talks).

“Atoms, Molecules and Light: AMO Science Serving Society,” Physics Colloquium, Department of Physics, Wayne State University, Detroit, MI, November 15, 2001 (60 min).

“Imaging and Controlling Ultrafast Dynamics,” AMO Day, IPST, University of Maryland, College Park, MD February 12, 2002 (20 min).

“Imaging, Manipulation and Control: The Things We Do To Matter With Light,” Physics Colloquium, Department of Physics, University of Delaware, Newark, DE, April 17, 2002, (60 min).

“Sensational Science,” Church of the Redeemer, Gaithersburg, MD, September 14, 2002 (90 min).

“Atoms, Molecules and Light: AMO Science Service Society,” Sigma Xi Lecture, Hope College Holland, MI, November 7, 2002 (60 min).

“Imaging, Correlation and Strong Laser Fields: Revealing Hidden Manybody Dynamics,” Chemistry/Physics Colloquium, Department of Chemistry, Hope College, MI (scheduled for November 8, 2002 (60 min).

“Atoms in Light Tunnels,” Quantum Coherence and Information Seminar, University of Maryland, College Park, MD, February 27, 2003 (60 min).

“Atoms, Molecules and Light: Physics Serving Society,” After Dinner Speaker at the Winter Meeting of the Washington DC Chapter of Sigma Xi, March 6, 2003 (60 min).

“Imaging, Correlation and Molecular Coulomb Explosion: A Graphical Interface for Isolating Pre-Explosion Geometries and Molecular Alignment,” Chemical Physics Seminar, University of Maryland, College park, MD, November 13, 2002, (60 min).

“Molecules in Intense Laser Fields: Learning Physics from Chemistry,” 2003 Science and Engineering Lecture Series, Jacksonville University, Jacksonville, FL, March 20, 2003 (60 mi).

“Neutral Atom Hollow Light Guides,” Laboratory for Physical Science Seminar, College Park, MD, April 30, 2003 (60 min).

"Atoms, Molecules and Light: Physics Serving Society," Philosophical Society of Washington, Washington DC, November 14, 2003 (60 min).

"Coulomb Explosion Imaging: Exposing Structure and Freezing Ultrafast Dynamics," Department of Applied Science Colloquium, University of California, Davis, October 28, 2004, (60 min).

"Freezing Ultrafast Dynamics & Building Qubit Highways," Special AMO Seminar, Institute for Molecular Sciences, National Institutes of Natural Sciences, Myodaiji, Okazaki, Japan, January 27, 2005 (60 min).

"Ultrafast Dynamics Probed by Coulomb Explosion Imaging," Special AMO Seminar, Department of Chemistry, University of Tokyo, Tokyo, Japan, January 28, 2005 (60 min).

"Atoms, Molecules and Light: Revealing the Secrets of Nature and Engineering the Future," Electrophysics Seminar, Department of Electrical Engineering, University of Maryland, College Park, MD, March 4, 2005 (60 min).

"Coulomb Explosion Imaging: Exposing Structure and Freezing Ultrafast Dynamics," AMO Seminar, SUNY, Stony Brook, New York, April, 11, 2005 (60 min).

"Atoms, Molecules and Light: Physics Serving Society," Goddard Engineering Colloquium, May 2, 2005 (60 min).

"Bessel beams with embedded vortices: building blocks for atom optics," Center for Nonlinear Dynamics and Atomic, Molecular & Optical Physics Seminar, University of Texas, Austin, October 28, 2005 (60 min).

"Optical beams with embedded vortices: building blocks for atom optics and quantum information," Laboratory for Physical Science Seminar, February 1, 2006 (60 min).

"Probing & Inducing Ultrafast Dynamics with Strong Laser Fields." November 24, 2006, Tianjin University, Tianjin, China (90 min).

"Optical beams with embedded vortices: building blocks for atom optics and quantum information," Nankai University, November 25, 2006, Tianjin, China (90 min).

"Advancing My Father's Legacy Through Physics," Weaver Medal of Honor Lecture, Drake University, Wednesday April 25, 2007.

"Pulse Shaping and Strong Laser Fields: Having Your Way with Atoms and Molecules," Department of Physics Laser Physics Seminar, Florida A & M University, April 3, 2008 (60 min).

"Pulse Shaping and Strong Laser Fields: Having Your Way with Molecules," Ultrafast Intense laser Science Symposium, University of Tokyo, December 2, 2008 (60 min)

"Laser Light, A Light Fantastic: after 50 years its potential is still being realized," China Lake Distinguished Speakers Colloquium Series, Naval Air Warfare Center, China Lake, CA, September 30, 2010 (60 min).

"Laser Science Funding at NSF," New Laser Scientist Conference, Rochester, NY, October 29, 2010 (15 min presentation + panel member).

Hands-on laser demonstrations given at the USA Science and Engineering Festival (with K. Jackson, A. Johnson and J. Lindesay), October 23 and 24, 2010, National Mall, Washington, DC.

“Looking inside the black box: deciphering optimal control fields”, AMO Seminar, Stony Brook University, NY November 15, 2010 (60 min).

“Laser Light: a light fantastic, after 50 years its potential is still be realized,” Physics Colloquium, Morehouse College, Atlanta GA, February 23, 2011.

“Laser Light: A Light Fantastic After 50 years its potential is still being realized,” Hampton University, June 3, 2011, Hampton, VA (60 min).

“AMO Science at NSF,” DAMOP 2011, June 13-17, Atlanta, GA (15 min).

“Laser Manipulation of Quantum States: From the Vacuum to Condensed Matter,” Shanghai Institute of Optics and Fine Mechanics, June 27, 2011, Shanghai, China (60 min).

“Strong Field Control of Internal Dynamics,” Shanghai Jiao Tong University, Department of Physics, June 28, 2011, Shanghai, China (60 min).

“First Demonstration of an Atomtronic Analog of a Basic Electrical Circuit Element: Engineering Optical Potentials for Cold Atom,” Australian National University, Department of Physics, August 23, 2011, Canberra, New South Wales, Australia (60 min).

“First Demonstration of an Atomtronic Analog of a Basic Electrical Circuit Element: Engineering Optical Potentials for Cold Atom,” given at Monash University, Department of Physics, August 25, 2011, Melbourne, Victoria, Australia (60 min).

“Carrier-Phase Control with Many-Cycle Pulses: CEP Stabilization not Required,” given at Kansas State University, Department of Physics, December 5, 2011, Manhattan, KS (60 min).

“Atomtronics with Free-Space Atom Chips: The First Neutral Atom Analogs of Basic Electric Circuit Elements,” Physics Colloquium at the University of Maryland, March 13, 2012.

“AMO Physics at NSF,” given to the Committee on Atomic, Molecular and Optical Sciences (CAMOS), Washington, DC, April 2, 2012.

“AMO Report on NSF Activities and Health,” the Division of Atomic, Molecular and Optical Physics (DAMOP) of the American Physical Society Business Meeting, Orange County, CA, June 7, 2012.

“CAREER Awards at NSF,” given at the 2012 Joint Annual Meeting, Broadening Participation Research, Washington DC, June 13, 2012.

“Neutral Atom Analogs to Basic Electric Circuit Elements,” given at the Department of Physics, Tianjin University, China, September 21, 2012.

“Neutral Atom Basic Electric Circuit Elements and Beyond,” Florida International University, Miami FL, Physics Colloquium, Feb 8, 2013 (60 min).

“Controlling strong-field dynamics with pulses CEP-stabilized synthetically,” Optical Physics Seminar, CREOL, University of Central Florida, March 1, 2013 (60 min).

“Some ideas for the VEGA lasers,” Seminar at Centro de Laseres Pulsados (CLUP), Salamanca, Spain, January 23, 2014 (60 min)

“Ionization enhancement and suppression with phase-locked pulses,” AMO Seminar, Department of Physics, Purdue University, September 8, 2014 (60 min).

“Atomic, molecular and optical physics: a tool to reveal and harness Nature’s most cherished secrets,” Physics Colloquium, California State University, Long Beach, November 17, 2014.

“Atomic, molecular and optical physics: a tool to reveal and harness Nature’s most cherished secrets,” Physics Colloquium, Delaware State University, Dover, DE, November 25, 2014.

