

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, Joint Institute for Astrophysics (JILA)	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-

EXPERIENCE NOT IN HIGHER EDUCATION

National Institute of Standards & Technology, (NIST) Gaithersburg, MD	Postdoc	1980-1982
NIST, Gaithersburg, MD	Visiting Scientist	1982-1987
Instituto Venezolano de Investigaciones, Caracas, Venezuela	Visiting Scholar	January 1983
Board of Directors, Institute for Advanced Scientific Studies, Lincoln University	Member	1995-1997

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

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.
 Optical Society of America (OSA).
 Optical Physics Technical Group.
 Laser 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
Elected Member, Executive Committee of Division of Laser Science, APS.	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

B. Conferences and Symposia1. 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)

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.

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).

Program Review Panelist, NSF (1989).

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

Center Review Panelist, NSF (1993).

Reverse Site Visit Panelist, NSF (1991, 1993).

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

Site Visit Panelist, NSF (1996).

Committee of Visitors to review Physics program for the National Science Foundation (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).

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

2. Education

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.

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.

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.

UNIVERSITY ACTIVITIESA. Teaching1. Physics

PHYS121	(Fundamentals of Physics I Lab)	2001
PHYS122	(Fundamentals of Physics II Lab)	2001
PHYS262	(Introduction to Physics II)	1989-1991
PHYS263	(Introduction to Physics III)	2000
PHYS273	(Introduction to Physics)	1996
PHYS375	(Experimental Physics III, Optics Lab)	1999-2002
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)	1990-1991
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
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	2000-2001

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

<u>2. Ph.D. Students</u>	<u>First Positions</u>	<u>Dates</u>
Brian Turner, Physics	Scientist, Fusion Systems	1985-1990
Shu Yang, Chemical Physics	Contract Scientist, NASA Goddard	1988-1994
Daniel L. Hatten, Physics	Asst. Prof., Rose-Hulman Inst. of Tech.	1989-1994
Yifeng Cui, Electrical Engineering	Postdoc, Univ of Maryland Univ. of New Orleans Electro-Optics Company	1989-1994
Jie Zhu, Chemical Physics	Postdoc, Univ of Maryland Programmer, CSC	1987-1996
Yonho Song, Physics	Postdoc, Seoul National Univ.	1994-1999
Kun Zhao	N/A	1998-
Hui Zhou	N/A	1999
Matthew Ferguson	N/A	2000
Ilya Arakelyan	N/A	2001-
Narupon Chattrapiban	N/A	2002-
Johnny Huckans	N/A	2002-

<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
Frank Feinland, Physics	Unknown	1986
Vishal S Chintawar	N/A	2002-

<u>3. 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	N/A	2001
Chris Lombardo	N/A	2002
David Cofield	N/A	2002
Damon Ellingston	N/A	2002

<u>4. 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>5. 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>5. 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>6. High School Students</u>	<u>Department</u>	<u>Dates</u>
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Chris Parker	Unknown	Sum 1985
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Brent Yorgey Williams College Spring 2000

C. Visiting Scientists

Richard. A. Neifeld (Harry Diamond Army Research Labs) 1987-1989
 Guizhong Zhang (Tiajin University, China) 1997-1998
 Frederick Adamietz (Universite de Bordeaux, France) 1998-1999

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 21st 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 Univeristy of Maryland," Various Institutions in China 1999
 "Studies in Science and Engineering at the University of Maryland Detroit Public Schools 2001

E. Committees

1. 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
Faculty Appointment, Promotion and Tenure	1986-1988 1996-1997
IPST/EE Search Committee (Hiring)	1986-1987
Chemical Physics Qualifier Committee	1986-1989
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
Chemical Physics Qualifier Committee, Chair	1998-2002
IPST Ad Hoc Space Committee, Chair	1999
Vice Chair, IPST Faculty Assembly	2000-2001
Chair, IPST Faculty Assembly	2001-2002
AMO Search Committee (Experiment and Theory)	2001-2002

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	2000-2002
Senior Advisor to Executive Committee of the Black Faculty and Staff Association	2000-2002

Faculty Advisor to the Navigators	2000-2002
CMPS Libray Committee and Department Representative	2000-2002
PhD Thesis Committees	
Scott A. Strobel, Physics	1984
Helen R. Thorsheim, Chemistry (Graduate School Representative)	1989
Brian P. Turner, Physics (Chair)	1990
Feng Peng, Electrical Engineering (Graduate School Representative)	1990
Qi Li, Physics	1991
Jianwen Xu, Chemical Physics	1991
Stephen E. Sadow, Electrical Engineering (Graduate School Representative)	1993
Yifeng Cui, Electrical Engineering (Graduate School Representative)	1994
Patricia F. Meed, Electrical Engineering (Graduate School Representative)	1994
Shu Yang, Chemical Physics (Chair)	1994
Pak Shing Cho, Electrical Engineering (Graduate School Representative)	1994
Eric E. Funk, Electrical Engineering (Graduate School Representative)	1995
John J. Curry, Electrical Engineering (Graduate School Representative)	1995
Darrin Leonhardt, Chemistry	1995
Daniel L. Hatten, Physics (Chair)	1995
Camran V. Parast, Biochemistry (Graduate School Representative)	1995
Jie Zhu, Chemical Physics (Chair)	1996
Dan Brasoveanu, Chemical Physics	1997
Chad Orzel	1999
Yonho Song, Physics (Chair)	1999
William DeGraffenreid	2000

Jaime Ramirez-Serrano	2001
Damon Spayde (Graduate School Representative)	2001
Amr M. Safwat Abo Elatta (Graduate School Representative)	2001
Junghwan Kim (Graduate School Representative)	2001
Lingze Duan (Graduate School Representative)	2002

F. Memberships

Graduate Faculty

Chemical Physics Faculty

Institute for Plasma Research

Black Faculty and Staff Association

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 Sabach Home School Academy 1999, 2000

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

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, 6/1/83-8/16/83

Research Corporation

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

\$16,000, 12/1/83-11/30/85

National Science Foundation Grant #PHY-84 06192

"Excited State Dynamics in Small Molecules."

\$203,377, 7/15/84-12/14/87

National Science Foundation Grant #PHY-84 06192

"Excited State Dynamics in Small Molecules."

\$159,500, 7/15/87-7/14/89

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

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

\$436,925, 7/1/89-6/30/93

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, 7/1/91 - 9/30/96

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), 9/1/95 - 8/31/98

National Science Foundation Grant #PHY-96 00203

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

\$390,000, 6/1/96-5/31/99

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, 3/16/01 – 3/15/02

National Science Foundation Grant #PHY-98 76976
"Correlation Studies in Atoms and Molecules."
\$252,500, 7/15/99 - 6/30/02

National Institute for Standards and Technology
"Rydberg Gates for Quantum Computing"
\$75,465, 9/30/01 – 9/29/02

B. Current

Army Research Office
"Hollow Laser Beam Generated Neutral Atom Beam Splitters and Switches"
\$270,000, 8/31/01-8/30/04

National Science Foundation Grant #PHY-00 99489
"Correlation Studies in Atoms and Molecules."
\$120,000, 8/15/01 – 7/31/03

National Institute for Standards and Technology
"A Study of the Rydberg blockade Phenomenon"
\$99,103, 9/01/02 – 8/31/03

C. Pending

National Science Foundation Grant
"Strong-Field Imaging of Ultrafast Molecular Dynamics"
\$619,351, 6/15/03 - 6/14/06

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 5p⁵ 6sns and 5p⁵ 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 5p⁵ 6sns and 5p⁵ 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 of 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 Yttrium Barium Copper Oxide (YBa₂Cu₃O₇)," R. A. Neifeld, E. Potenzi, 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, 2646-2649 (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.* A50, 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.* A51, 2301-2307 (1995).

"Autoionizing Rydberg WavePackets," F. Robicheau and W.T. Hill, III, *Phys Rev* A54, 3276-3289 (1996).

"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).

"Atoms, Molecules and Light: AMO Science Enabling the Future," K. Patel, W.T. Hill, III, P. Bucksbaum, W. Ketterle, K. Kriby, D. Kleppner, P. Meystre, W.E. Moerner, M.M. Murnane, W.D. Phillips and R.E. Slusher, National Academy Press, Washington, DC (2002).

"Strong-Field Dissociative-Ionization of Linear 3-Atom Systems: Critical Radius vs. Bond Angle," K. Zhao, G. Zhang and W.T. Hill, III, *Phys. Rev. Lett.* (Submitted to *Phys. Rev. Lett.*).

"Angular-Resolved Dynamics of Strong-Field Dissociative-Ionization of Bent Three-Atom Molecules," K. Zhao and W.T. Hill, III, *Phys. Rev. Lett.* (To be submitted to *Phys. Rev. Lett.*).

2. 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.

2. Book

Fundamentals of Atomic, Molecular, and Optical Science and Engineering, John Weiner, Wendell Hill, Ping-Tong Ho, Chi Lee, John Wiley & Sons, Inc., (A two volume first year graduate level in preparation for Wiley Press, target date 2003).

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)

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. Lucatorto, 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. Lucatorto, 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 Gratings," (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 O_2 and the Two-Photon Cross Section of O_2 , 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 CO^{2+} 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 CO₂,” (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 Labelling: 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).

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," Tiajin University, Department of Physics, Tiajin China, June 29, 1999 (2 hrs)

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

"Neutral Atom Tunnels and Funnels," Tiajin University, Department of Physics, Tiajin 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 Service 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 Service 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).