CURRICULUM VITAE: *Lawrence M. Krauss*

Born: May 27, 1954; New York City

Citizenship: U.S.A. , Canada

Married: January 19, 1980 to Katherine Anne Kelley

Children: Lillian, born Nov. 23, 1984

Current Address and Position:

Ambrose Swasey Professor of Physics, Professor of Astronomy, and Director, Center for Education and Research in Cosmology and Astrophysics,
Case Western Reserve University
10900 Euclid Ave, Cleveland OH 44106-7079

Research office: 216-368 4070 (4257 sec, 5422 fax)
Email; krauss@cwru.edu

Education

B.Sc.	First Class Honours, Mathematics and Physics Carleton University, Ottawa, Canada, 1977
Ph.D.	Physics, Massachusetts Institute of Technology, Cambridge, Massachusetts, 1982

Honorary Degrees:

D.Sc.	Carleton University, Ottawa, Canada, 2003.

Employment: Teaching and Research (since 1982)

1982-1985	Junior Fellow, Harvard Society of Fellows, and Physics Dept., Harvard University
1985-88	Assistant Professor, Dept. of Physics, Yale University
1985-86	Visiting Scientist, Boston University, and Smithsonian Astrophysical Observatory
1986-89	Visiting Scientist, Harvard-Smithsonian Center for Astrophysics
1986-1993	Joint Appointment, Department of Physics, and Astronomy, Yale University
1987-95	Associate of the Department of Physics, Harvard University
1988-1993	Associate Professor, Departments of Physics and Astronomy, Yale University
1993-	Ambrose Swasey Professor of Physics and Professor of Astronomy, Case Western Reserve University.

1993-2005	Chairman, Department of Physics, Case Western Reserve University
2005	Director, Office of Science, Public Policy, and Bio-Entrepreneurship, Case Western Reserve University School of Medicine
2002-	Director, Center for Education and Research in Cosmology and Astrophysics
2006-7	Visiting Professor, Vanderbilt University

Visiting Research Positions:

CERN associate- 1983
Institute for Theoretical Physics Santa Barbara- 1984, 1985, 1988, 1989,1992, 2002,2003
Smithsonian Astrophysical Observatory- 1984-88
University of Chicago, 1989.
Institute for Nuclear Theory, Seattle 1994
Institute for Nuclear and Particle Astrophysics, Lawrence Berkeley Laboratory 1995, 1996, 1998
Scientific Associate, CERN 1996-97
Institute des Hautes Etudes Scientifique 1997-98
Isaac Newton Institute, Cambridge University 1999
Perimeter Institute 2003
Hooker Distinguished Visiting Professor, Origins Institute, McMaster University, 2005
Member, Institute for Advanced Study, 2005.

Other Positions:

Commentator: Marketplace, All Things Considered
Columnist, Nature Physics, 2005-6
Columnist, New Scientist Magazine, 2007-

Major Awards:

1984	First Prize Award, Gravity Research Foundation
1986	Presidential Young Investigator Award
1997	Glover Award for Distinction in Physics Achievement and Physics Education, Dickenson College, PA.
2000	Award for Public Understanding of Science and Technology, American Association for the Advancement of Science. Citation: *For global impact as a science communicator and the ability to maintain an active science career while writing several books about physics for the general public.*
2001	Julius Edgar Lilienfeld Prize, American Physical Society. Citation: *For outstanding contributions to the understanding of the early universe, and extraordinary achievement in communicating the essence of physical science to the general public.*
2001	Andrew R. Gemant Award, American Institute of Physics.

Citation: *To Professor Lawrence Krauss for excellence in the interpretation of physics to the public through numerous newspaper and magazine articles, books, lectures, and television productions. Krauss is especially commended for his communication of sound scientific literacy through timely opinion pieces and books, and for his efforts to address incorrect popular interpretations of science disseminated in the mass media.*

2002 American Institute of Physics Science Writing Award for *Atom, An Odyssey from the Big Bang to Life on Earth and Beyond*

2003 Humanism Award, Free Inquirers of Northeast Ohio

2004 Oersted Medal, American Association of Physics Teachers.

2004 Northern Ohio Live Award of Achievement: Science and Technology

2005 Joseph A. Burton Forum Award, American Physical Society, Citation: *For major contributions in defending science in the schools through his efforts in combating the opponents of teaching evolution, and for continuing to enhance the public understanding of contemporary physics*

Other Honors (since 1977):

1977	Senate Graduating Medal- Carleton University
1977-1981	N.R.C. Postgraduate Scholarship
1982-1985	Junior Fellow, Harvard Society of Fellows
1982-83	N.S.E.R.C.Fellowship
1988	Junior Faculty Fellowship,Yale Unversity
1988	Senior Faculty Fellowship, Yale University
1988	Nesbitt Lecturer, Carleton University
1989	Gravity Research Foundation Prize Award
1990	Named Sigma-Xi National Lecturer (1991-92)
1990	Named to "International Leaders in Achievement"
1991	Gravity Research Foundation Prize Award
1993	Named to Ambrose Swasey Chair in Physics
1995	Gravity Research Foundation Prize Award
1996	Innaugural Distinguish Scientist Lecturer for Young People--Ohio Aerospace Institute
1996	Innaugural Distinguished Physics Lecturer, University of Minnesota
1996	Ohio Achievement Award Selection, Northern Ohio Live Magazine
1997	Hays Lecturer, Oberlin College
1997	Great Poets League of Cleveland Honoree 1997
1998	Cleveland Magazine, 50 Most Interesting People of the Year Award
1997-8	University School-Seelbach Visiting Chair
1998	American Physical Society Centennial Lecturer
1998	Henry Steel Lecturer, Mid America Orthopedic Assn.
1998	Commencement Speaker, Hiram College
1998	13th Annual Frank G. and Jean M. Chesley Lectureship, Carleton

College
1998 Herzfeld Lecturer, Catholic University
1999 Fellow, American Physical Society
1999- Board of Directors, Physics Entrepeneurship Program.
1999 Gravity Research Foundation Prize Award
1999 Moti Lal Rustgi Memorial Lecturer, SUNY Buffalo
1999 Hendrik de Waard Foundation Lecturer, Groningen, Netherlands
2000 Maurer Memorial Lecturer, University of Arkansas
2000 Vanden Miles Lecturer, Wayne State Uinversity
2000 Kallen Lecturer, University of Lund, Sweden.
2000 Benedum Lecturer, University of West Virginia
2000 Great Minds Lecturer, Illinois Math and Science Academy, Aurora IL
2000 Soloist, Holst, The Planets, with The Cleveland Orchestra
2001 Rochester Lecturer, University of Durham, UK
2001 Isaac Asimov Memorial Panelist, American Museum of Natural History, NY
2001 Rorschach Lecturer, Rice University
2001 Shell Lecturer, National Assoc. of Science Teachers
2001 Invited Witness, U.S. House Committee on Science, Session on the Future of Space Exploration
2001 Malstrom Lecturer, Hamline University, Minnesota
2001 Morgan Lecturer, Texas Christian University, Fort Worth Texas
2001 Timothy J. OLeary Distinguished Scientist Lecturer, Gonzaga University
2001 Presidential Inauguration Keynote Speaker Clark University
2001 Campbell Lecturer, Society of Pediatric Urology
2001 Ernest Orlando Lawrence Centenary Lecturer, Lawrence Berkeley Laboratory
2001 Fermi Centennial Lecturer, Fermilab
2001 Fellow, American Association for the Advancement of Science
2002 Knight Fellow, Western Reserve Academy
2002 Friedman Lecturer, Penn State University
2002 Milton Lecturer, Syracuse University
2002 Chancellor's Lecturer, Vanderbilt University
2002 Fellow, Committee for the Scientific Investigation of Claims of the Paranormal
2003 Waynick Lecturer, Penn State University
2003 Donald Ross Hamilton Lecturer, Princeton University
2003 Woods Lecturer, Westminster College, PA
2003 New Frontiers in Information Sciences Distinguished Lecturer, Air Force Research Laboratory, Rome NY
2003 Commencement Speaker, Carleton University
2003 Five Colleges Lecturer, U Mass. Amherst
2003 William Mahoney Lecturer, U. Mass Amherst
2003 Presidential Lecturer, Clark University
2004 Joe Barnhart Lecturer, Coastal Bend College, TX
2004 Constance Wilson Distinguished Lecturer, Berry College,

GA

2004 Maurice and Yetta Glicksman Commencement Lecturer, Brown University
2004 Likover Lecturer, American Civil Liberties Union.
2004 Samuel Newton Taylor Lecturer, Goucher College
2005 Hooker Professor and Lecturer, McMaster University
2005 Rudin Distinguished Scholar Lecturer, Marymount College
2005 First Annual Mel Oakes Distinguished Undergraduate Lecturer, UT. Austin
2005 World Year of Physics Lecturer, Oak Ridge National Laboratory
2005 Benson Lecturer, Miami University
2005 IBM Yorktown Heights Visions Lecturer
2005 NASA Huntsville, World Year of Physics Lecturer
2005 Sigma Pi Sigma Lecturer, Wright State University
2005 Crump Lecturer, St. Andrews School
2005 Presidential Lecturer, University of Tulsa
2005 IBM Lecturer, Wittenberg University
2005 World Year of Physics Lecturer, Severance Hall
2006 Michigan State Science Teacher's Distinguished Lecturer
2007-8 Phi Beta Kappa National Visiting Scholar
2006- Board of Sponsors, Bulletin of the Atomic Scientists
2006 Terry Lectureship, Science and Religion, Yale University
2007 Distinguished Scientist Lecture, Brookhaven National Laboratory
2007 Concordia University Distinguished Scientist Lecturer
2007 Gravity Research Foundation Prize Award
2007 Michelson Centenary Lecturer, US Naval Academy.
2007 Inaugural Beyond Institute Lecturer, Arizona State University
2008 Centennial Lecturer, University of Arkansas
2008 Bradley Lecturer, American Enterprise Institute
2008 2008 Michigan State University Distinguished Lecturer

Positions, Offices and Memberships,etc (since 1977):

1977 Board of Directors, Canadian Assoc. of Physicists
1981-83, 89- Member (Life), American Physical Society
1983 APS Forum on Physics and Society Awards Cmte.
1985-87 Yale University Course of Study Committee
1987 Convenor, Lewes Center Summer Meeting on Cryogenic Detection Neutrinos and Dark Matter
1988-91 Sigma Xi-Committee on Lectureships
1988- Co-organizer, Yale Workshop on Cosmic Strings
1988 Convenor- Cosmology and Astrophysics, APS Particles and Fields Conference 1988
1989 Program Committee, International Conference on Particles and Nuclei

1989	Co-organizer, Yale Workshop on the Cosmic Microwave Background
1989	Member, Panel on Particles of the Astronomy and Astrophysics Survey Committee
1992	Co-organizer, Texas Meeting on Baryon NumberViolation at the Weak Scale.
1992	Director,Association of Yale Alumni Program: The Legacy of Newton
1992	Co-organizer, Aspen Workshop on Gravitational Lensing in Cosmology.
1992	Organizing committee, Colliding Beam Conference, Yale University Oct 2-3 1992
1992-	Program Committee Member, Moriond meetings on Electroweak Interactions,
1993	Organizer,Case Meeting on New Physics at New Facilities,Oct 15-17 1993
1994	Organizer,CWRU Workshop: CMB Two Years after COBE, April 22-24, 1994
1994-	Executive Committee, Board of Trustees, Friends, Cleveland School for the Arts
1995	Organizer, Aspen Center for Physics Workshop on Big Bang Nucleosynthesis
1995	Member Exhibits Committee, Great Lakes Science Center Board of Trustees
1995-	Member, American Astronomical Society
1995-1998	Member, Faculty Senate of Case Western Reserve University
1995-	Board of Trustees, Great Lakes Science Center
1995-1997	Organizing Committee, International Conference on Sources and Detection of Dark Matter
1995-	Member, New York Academy of Sciences
1995-	Member, American Association for the Advancement of Science
1997	Organizing Committee, Early Universe Physics, England 1997
1997-2000	Executive Committee , Division of Astrophysics, American Physical Society
1997-98	InfoWorld Futures Project Advisory Board
1997-	Odyssey Magazine, Advisory Board
1997-	Review Panel, M.I.T. Curriculum on Science and Communication
1998	Organizing Committee, Sheffield International Workshop on Dark Matter Detection
1997-98	Search Committee, Vice-President for Research, Case Western Reserve University.
1998-	General Member, Board, Aspen Center for Physics
1998-2000	Editor, Modern Physics Letter A
1998-2000	Editor, Int. Journal of Modern Physics
1998-	Chair, Exhibits Committee, Great Lakes Science Center Board of Trustees
1998-	Executive Commitee , Great Lakes Science Center Board of Trustees
1999-	Organizing Committee, International Conference on Sources and

	Detection of Dark Matter
1999	Co-Organizer, Aspen Workshop on the Cosmological Constant
1999-	Fellow, American Physical Society.
1999-2000	Organizing Committee, DPF 2000 meeting
1999-2000	Co-Organizer, Aspen Workshop on Dark Matter.
2000-2001	CWRU, University Stakeholders Committee
2000-2002	American Physical Society,Panel on Public Affairs.
2000	International Advisory Committee, International Conference on Dark Matter Detection.
2001	Advisory Committee, Physics Potential of Supernova Neutrino Detection Meeting, UCLA Feb 2001
2001-	Board of Advisors, The Skeptics Society
2001	Convenor, Frontiers of Physics Meeting, Vanderbilt Tenn, March 2001
2001	Chair, Pagels Lecture Committee, Aspen Center for Physics.
2002	International Advisory Committee, International Conference on Dark Matter Detection.
2002	Board of Directors, Ohio Citizens for Science
2002	Member, HEPAP Public Outreach Panel
2002-	Trustee, Board of Trustees, Cleveland Museum of Natural History
2002	Chair, President's Commission on Graduate Education and Research, CWRU
2002-	Fellow, Committee for the Scientific Investigation of Claims of the Paranormal
2002	Coordinator, Teachers Conference on Cosmology, Institute of Theoretical Physics, Santa Barbara
2003-2006	Gemant Award Committee, AIP.
2003-	Board of Advisors, and Guidance Committee, Science Fiction Experience, Seattle Washington
2003	Grand Judging Co-Chair, Physics, Intel Science and Engineering International Science Fair
2003	Aspen Center for Physics Colloquium Chair.
2003	Scientific Advisory Committee, SciPart'03
2003	Lilienfeld Prize Committee, APS
2003-	Board of Directors, TalkingScience
2003-	Board of Directors, Faststart LLC
2003-	Board of Directors, Faststart Foundation
2005	Gemant Prize Committee, AIP
2004-	Commentator, American Public Media's Marketplace
2004-5	Scientific Program Planning Committee, West Quad, Case Western Reserve University Medical School
2004-	ACLU Board of Trustees, Cleveland
2004-5	Chair, Advisory Committee on Research Computing, Information Technology Services, CWRU
2004-5	Strategic Planning Review Coordinator, Department of Chemistry, CWRU.
2004	Aspen Institute, Executive Seminar

2004	NSF Physics Education Grant Review Panelist
2004-5	Aspen Center for Physics, Public Lecture Committee
2005	Jury Member, Sundance Film Festival
2005	Elected, Chair-Elect, APS Forum on Physics and Society
2005-	Board of Advisors, Defcon(Defense of the Constitution).org
2005	APS Burton and Szilard Award Committee
2005-	Commentator, NPR's All Things Considered
2006-	Chair-Elect, Physics Division, American Association for the Advancement of Science
2006	International Advisory Board, International Colloquium on Group Theoretical Methods in Physics
2006-	Chair, Advisory Board, Help Ohio Public Schools
2006-	Board of Sponsors, Bulletin of the Atomic Scientists
2006-	National Advisory Board, Office of Public Policy, Center for Inquiry
2006-	National Advisory Board, Scientists and Engineers for America
2007-	NASA Primordial Polarization Program Definition Team
2007-	Scientific Organizing Committee, International Astronomical Union Symposium, Astronomy and Society.
2007	Scientific Organizing Committee, Texas Symposium on Relativistic Astrophysics.
2007-	Steering Committee, Science Debate 2008.

Major Lectures:

(a) *University or Laboratory Colloquia* (does not include seminars):

Harvard University 1983	California Institute of Technology 1984
Stanford University 1984	U. Mass Amherst 1984
MIT 1984	Institute for Theoretical Physics-UCSB 1984
SLAC 1985	U.C. Santa Barbara 1985
CITA-Toronto 1985	TRIUMF 1985
DAO-Victoria 1985	University of Chicago 1985
Brookhaven Laboratory-1986	New York University-1987
Stanford University-1987	University of Illinois-1987
Brown University-1987	University of Chicago-1987
MIT-1987	Ecole Polytechnique-1988
LBL-1988	Arizona, 1988
U.C. Irvine,1988	Michigan 1989
Institute d'Astrophys., Paris 1989	Cincinatti 1989
McGill 1990	William and Mary 1990
Brigham Young University 1991	City College of New York 1991
Yale University 1991	Queen's University 1991
University of Cincinnati 1991	University of British Columbia 1992
ATT 1992	University of Florida 1992

NIST 1992
Naval Research Lab 1993
NASA-Goddard 1994
Case Western Reserve 1995
Harvard University 1995
U.C. Riverside 1996
Simon Fraser University 1996
University of Minnesota 1996
CERN 1997
U.T. Austin 1997
Cal. State Long Beach 1997
University of Akron 1998
Directors Colloquia, LANL 1998
Johns Hopkins University 1998
NIST 1998
CWRU 1998
Washington U., St.Louis 1999
Univesity of Montreal 1999
Aspen Center for Physics 1999
Dartmouth 1999
University of Kansas 1999
Stanford 2000
Michigan State University 2000
Wayne State University 2000
University of Arkansas 2000
University of Il., Urbana 2000
University of Akron 2000
Lawrence Berkeley Lab. 2001
University of Texas Austin 2002
Vanderbilt University 2002
KITP, Santa Barbara, 2002
Clark University, 2003
Washington University 2004
Stockholm University 2004
McMaster University 2005
Stanford University 2005
University of Chicago 2005
Rockefeller University 2005
Kent State, 2005
Harvard University 2006
Vanderbilt University 2006
Allegheny College, 2007
Physical Review, APS 2007 McGill University, 2007

Case Western Reserve 1992
NYU 1993
Institute for Advanced Study 1994
Chinese University of Hong Kong 1995
Ohio State University 1996
University of British Columbia 1996
University of Maryland 1996
Caltech 1996
ETH 1997
CERN 1997
CWRU 1997
University of Kentucky 1998
Purdue University 1998
University of New Mexico 1998
ICTP Trieste 1998
Catholic University of America 1998
Penn State University 1999
M.I.T. 1999
Notre Dame 1999
Kansas State 1999
Caltech 2000
U.C. San Diego 2000
U. C. Berkeley 2000
Indiana University 2000
Fermi National Accelerator Lab 2000
Xerox PARC Research Center 2000
Syracuse University 2001
University of Rochester 2001
Cornell University 2002
University of British Columbia 2002
NYU 2003
UNC 2004
Upsalla University 2004
University of Virginia, 2005
Oak Ridge National Laboratory 2005
Wittenberg College 2005
IBM Yorktown Heights 2005
Institute for Advanced Study 2005
Columbia University 2006
Case Western Reserve University 2006
University of Kansas 2007
U.C. Berkeley, 2007

(b) Conferences -Invited Lectures:

3M Lecture series- Carleton College 1982
Western Theoretical Conference 1982

Neutrino 84
EST Meeting 1984
Telemark Neutrino Conference 1984
Yale Theoretical Advanced Study Institute in Elementary Particle Physics, 1985
Moriond 1986
Fermilab Beam Dump Workshop 1986
Seventh Vanderbilt High Energy Physics Conference 1986
International Conference on High Energy Physics (2 lectures), U.C. Berkeley 1986
Opening Lecture, Rencontres de Moriond, 1987
AAAS Annual Meeting, Boston 1988
Rencontres de Moriond, 1988 (2 lectures)
APS Baltimore Meeting 1988
Plenary Lecture-APS/AAPT New England Meeting 1988
Plenary Lecture, Neutrino 88
MIT Conference on Gravitational Lenses, 1988
Yale Workshop on Cosmic Strings 1988
Plenary Lecture, Berkeley Conference on Particle Astrophysics, 1988
Aspen Winter Conference 1989
Rencontres de Moriond, 1989 (2 lectures)
APS Baltimore Meeting 1989
Plenary Lecture,French Physical Society 1989
Moriond 1990 (2 lectures)
Wisconsin Phenomenology Conference 1990
IUPAP Conference, Tokyo 1990
APS New England Meeting, 1990
After the First Three Minutes, Maryland 1990
International Conference On Trends in Particle Astrophysics 1990
APS New England Meeting, 1991
XIV International Warsaw Meeting on Elementary Particle Physics 1991
2nd International Conference on Theoretical and Phenomenological Aspects of Underground Physics, Toledo 1991
Aspen Winter Conference on Particle Physics 1992
Symposium on Black Holes Strings, Wormholes, 1992
Florida Workshop on Dark Matter, 1992
Franklin Symposium on Neutrino Physics 1992
IVth Rencontre de Blois: Particle Astrophysics, Plenary Lecture, 1992
Plenary Lecture, International Conference on Particle Physics, Dallas 1992
International Conference on Neutrino Astrophysics, Takayama Japan 1992
Moriond meeting on Atomic, Gravitational and New Physics 1993.
International Workshop on Neutrino Telescopes, Venice 1993
Rencontres de Physique de la Vallee dAoste, La Thuile, 1993
Opening Lecture, Moriond Meeting on Electroweak Interactions 1993
Twelfth International Workshop on Weak Interactions, Seoul 1993
International Conference on Particle Astrophysics, Bangalore 1994
Nordic Winter School on Particle Physics, Norway 1994
U.C.L.A. Conference on Critiques of Sources of Dark Matter, UCLA 1994
INT Meeting on Solar Modelling and Solar Neutrinos, Seattle, 1994
Snowmass Workshop on Particle Astrophysics 1994
Trends in Particle Astrophysics, Stockholm 1994

Polish Workshop on Particle Physics: From the Weak Scale to the Planck Scale 1994
ITP Santa Barbara, Clustering and Cosmic Microwave Workshop 1995
Keynote Speaker, Ohio Section, American Assoc. of Physics Teachers 1995
KeyNote Speaker, National Teacher Training Insitute, 1995
Teacher Resource Workshop -Am. Ass. of Phys. Teachers Nat. Meeting-Spokane 1995
Rencontre du Vietnam, Ho Chi Minh City, Oct 1995
Plenary Speaker, Pan Asian Conference on Cosmology, 1996
International Conference on Sources and Detection of Dark Matter, UCLA 1996
Keynote Speaker, Ohio Section, American Physical Society, 1996
Plenary Speaker, International Workshop on Neutrino Telescopes, Venice 1996
Plenary Speaker, Dark Matter 1996, Sheffield U.K.
Keynote Speaker, Ohio Aerospace Institute Professional Conference 1996
American Association of Physics Teachers/Long Island Physics Teachers Conference, Brookhaven, 1996
La Thuile, Rencontre de Physics, 1997
Napoli Thinkshop on Astrophysics: The Search for Extraterrestrial Intelligence, 1997
Rome Conference on the Future of the Standard Model, 1997
San Minateo Conference: The Irresistable Rise of the Standard Model, 1997
Edoardo Amaldi Meeting on Gravitational Waves, CERN 1997
Nasa Lewis Meeting: Breakthrough Propulsion 1997
DOE, Office of Energy Research, Science Themes and Strategic Planning 1998
International Conference on Sources and Detection of Dark Matter, UCLA 1998
Space Policy Institute: Plenary Lecturer, Symposium on Astrobiology and the Search for Extraterrestrial Life, George Washington University, March 1998
PASCOS 1998, Plenary Lecture,Boston, March 1998
Keynote Speaker, APS-AAPT Educator Workshop, Columbus,April1998
Plenary Speaker, Tropical Workshop on Particle Physics and Cosmology, San Juan, Puerto Rico,April 1998
Henry Steel Lecture, Mid-American Orthopedic Assn, Acapulco, April 1998
Plenary Lecturer, WEIN98, International Conference on Physics Beyond the Standard Model, Santa Fe, June 1998
Keynote Address, Fermilab Annual Users Meeting, Aug 1998
Plenary Speaker, International Workshop on Dark Matter, Buxton England Sept. 1998
Conference on Relic Neutrinos, TriesteSept.1998
NASA Space Exploration Planning Meeting, Lewis Research Center, Sept 1998
Pritzker Symposium and Workshop on Inflationary Cosmology, Chicago Feb 1999
Gordon Conference, Nuclear Chemistry, Keynote lecture, June 1999
Aspen Center for Physics Workshop on the Cosmological Constant June 1999
Plenary Opening Lecture, Am. Assoc. of Physics Teachers Nat. Meeting, San Antonio, TX, Aug 1999
Lecture, Workshop on Physics of the Early Universe, Newton Institute, Sept 1999
Plenary Lecture, Cosmo 99, ICTP, Trieste, Italy Sept 1999
Plenary Lecture, News from the Universe Meeting, DESY Oct 1999
Chairman and Speaker, National Academy of Sciences Frontiers of Science Meeting, Beckman Center, Irvine CA Nov 1999
British Particle Physics Association/Royal Astronomical Society Annual Conference, Edinburgh April 2000.
National Academy of Sciences Annual Meeting, April 2000
Kallen Memorial Symposium, Lund Sweden, May 2000

WIPP Underground Physics Workshop, June 2000
Problems of Vacuum Energy, Aug 2000, Nordita, Copenhagen
Science in the 21st Century,Brijuni, Croatia, Aug 2000
Opening Lecture, Third International Workshop on the Detection of Dark Matter, York UK Sept 2000.
The Far Future of the Universe, The Vatican, Nov 2000.
Invited Lecture, MRI International Meeting, Cleveland OH Feb 2001.
Plenary Lecture, Int. Conference on Neutrino Telescopes, Venice, March 2001
National Academies Symposium on Physics, Washington, June 2001
TASI Summer School, Boulder Co. , June 2001
Plenary Lecturer, Cottrell Scholars Workshop, Tucson, July 13-15, 2001
National Research Council and American Physical Society, "Grand Challenges for the 21st Century, U.S. House of Representatives, July 25 2001
Scottish Universities Summer School in Physics, St. Andrews, Scotland, Aug 2001
Opening Lecture, COSMO 2001, International Meeting on Particle Physics and the Early Universe, Finland, Aug 2001
Workshop on Cosmological Probes of Dark Energy, Chicago, Dec 2001
Plenary lecture ESO-CERN-ESA Symposium on Astronomy, Cosmology and Fundamental Physics, Munich, March 2002
Plenary Lecture, APS Ohio Section Meeting, Youngstown, OH April 2002
Plenary Lecture, Canadian Association of Physicists Annual meeting, Quebec City, June 2002
Featured Speaker, Gordon Research Conference on Organic Reactions, Bristol RI July 2002
Plenary Lecture, Portuguese Physical Society, Lisbon, Sept 2002
Institute for Theoretical Physics Workshop on Dark Matter and Dark Energy, Sept.-Nov. 2002
Institute for Theoretical Physics, Santa Barbara Teachers Workshop on Cosmology, Oct 2002
Lecturer, Canary Islands Winter School in Astrophysics, November 2002
Invited Plenary Lecture, "From Here to Eternity" Conference in honor of J. Silk's 60'th Birthday, Oxford University, December 2002.
Invited Topical Lecturer, AAAS Annual Meeting, Denver Feb 2003
Plenary Lecture, Physical Cosmology '03, Blois, France June 2003
Plenary Lecture, Respect for All Involved: A National Symposium on Research Integrity, Columbia University, CUNY, New York, Sept, 2003
Opening Lecture, CERCA conference on the Future of Cosmology, Oct 2003, Cleveland OH
Great Lakes Planetarium Assoc Plenary Lecture, Oct 2003, Cleveland
Sources and Detection of Dark Matter and Dark Energy in the Universe, UCLA, Feb 2004.
American Physical Society Meeting, April 2004
Aspen Institute and Aspen Center for Physics Einstein Celebration, Aug 2004
COSMO '04, Toronto, Canada, Sept. 2004
Evolution and God Symposium, Clevleand 2004
CERCA, Science and Society Symposium Cleveland 2004
World Congress of Science Producers, Toronto Canada, Nov. 2004
Aspen Center for Physics Winter Meeting, Feb. 2005
Seventh Symposium, Internacional Physica, Mexico, February 2005
Princeton-Oxford Cosmology Meeting, March 2005
American Physical Society Meeting, April 2004
NASA Hunstville World Year of Physics Conference, April 2005
SLAC Summer School in Physics, Summary Lecturer, Aug 2005.
100 Years in Physics Conference, Singapore, Aug 2005

International Conference on Physics Education, Delhi Sept 2005
APS Nuclear Physics Conference, Hawaii, Oct 2005
International Conference on Humanism, NY, Nov 2005
Canadian Undergraduate Physics Conference, Canada, Nov 2005
Inaugural Kavli Instiitute New Views of the Universe Conference, University of Chicago, Opening Lecture, Dec 2005
Aspen Center for Physics Winter School Jan 2006
III International Workshop on : NO-VE, Neutrino Ocillations in Venice, Venice, Italy, Feb 2006
Sources and Detection of Dark Matter and Dark Energy in the Universe, UCLA, Feb 2006.
Michigan State Science Teachers Conference, Feb. 2006
Confronting Gravity, St. Thomas, USVI, March 2006
NES APS and AAPT Conference, Boston University, March 2006
Texas A&M Forefront of Physics Meeting, April 2006
Hadron Collider Physics Symposium, Duke University, May 2006
Communicating Science and Technology, Tromso Norway, June 2006
Neutrino 2006, Santa Fe, NM, June 2006
Ideas Festival, Aspen Institute, Aspen CO, July 2006
Under the Spell of Physics, Vlieland, The Netherlands, July 2006
Banff Center, Science Communication, Aug 2006
Max Delbruck Fest, Cold Spring Harbor Lab, Aug 2006
Evolution and Faith, Marist College, Oct 2006
Beyond Belief, Salk Institute, Nov 2006
Science and Society, Boston, Jan 2007
AAAS Annual Meeting, February 2007
Open Questions in Cosmology, Imperial College, UK, March 2007
APS Annual Meeting, April, 2007
Society for Heart and Lung Transplantation, San Francisco, April 2007
American Physiological Society, Washngton. April 2007
Dark Matter Workshop, Fermilab, May 2007
New Horizons at Colliders, Brookhaven National Laboratory, May 2007
European Conference of Science and Technology Museums, Lisbon, June 2007
Canadian Association of Physicists National Meeting, Saskatoon, June 2007
Idea City, Toronto, June 2007
Workshoip on Supernovae, Aspen, June 2007
Science and Media Conference, Aspen, July 2007
Ideas Festival, Aspen, July 2007
Fundamental Questions, FQXI Meeting, Reykjavik, Iceland, July 2007
Chalonge Meeting on Cosmology, Paris, August 2007
NASA Thermal and Fluids Workshop, Cleveland, Sept 2007
International Conference on Science and Humanism, Beijing, Oct 2007
Genoa Science Festival, Oct 2007
Kshitij, Kharapur India Jan 2008

(c) Major Public Lectures:

Nesbitt Lecture, Carleton University, Nov 1988;
Museum of Natural History/ New York Astronomical Society Lecture, Dec 1989;
National Air and Space Museum--Opening Lecture
Hughes-Danbury Series, Feb 1990;

New York Open Center---Visions of the 21st Century Series, NYU, Oct. 1990;
15 Sigma Xi National Lectures 1991-93;
Wheeler Opera House, Aspen CO, Jan 1992:
Museum of Natural History, Explorer Series Cleveland Ohio, May 1994;
Smithsonian-Associates, Department of the Interior, Washington 1995;
Wheeler Opera House, Aspen CO, Jan 1996;
U.C. Berkeley Feb 1996:
Cincinnati Museum of Natural History March 1996, :
Royal Ontario Museum, Toronto April 1996:
Ohio Aerospace Institute, Cleveland May 1996;
Smithsonian Institution, Washington Aug 1996;
Lawrence Livermore Laboratory, Aug 1996;
Carleton University, Ottawa, Canada, Oct 1996;
Howard Hughes Lecture, Case Western Reserve University Oct 1996;
University of Minnesota Nov 1996;
Ontario Science Centre, Toronto CANov 1996;
Canadian Museum of Civilization, Ottawa, CA, Feb 97
CERN, March 1997
Museum of Innovation, San Jose California, April 97
U.S. Coast Guard Academy, April 1997
Great Lakes Science Center, May 1997
Citta della Scienzia, Napoli, June 1997
Hays Lecture, Oberlin College, Sept 1997
Glover Lecture, Dickinson College PA., Sept. 1997
Cal State University at Long Beach, Odyssey Program Sept 1997
Cleveland Museum of Natural History 1997.
Hayden Planetarium, Nov 1997
Smithsonian Insitution, Washington, Nov 1997
Commencement Address, Hiram College, May 1998
Jodrell Bank Observatory Sept 1998
Chesley Lectures, Carleton College 1998
Herzfeld Lecture, Catholic University of America, 1998
American Physical Society, Centennial Meeting, Public Lecture 1999
Cleveland Museum of Natural History, 1999
Open Lecture, Irish Science Week, Cork Ireland, 1999
Hendrik de Waard Lecture, Groningen, Holland, 1999
Stark Lecture, University of Arkansas 2000
Vanden Miles Lecturer Wayne State Uinversity 2000
Harvard Millennium Lecture,London U.K. 2000
Edinburgh Science Festival Lecture, Edinburgh, Scotland 2000
Innaugural Asian Physics Olympiad Lecture, Jakarta, Indonesia. 2000
National Academy of Sciences, Washington DC April 2000
Kallen Memorial Symposium, Lund SwedenMay 2000
Keynote Public Lecture, WIPP Center, Carlsbad, NM June 2000
Heinz Pagels Memorial Lecture, Paepke Auditorium, Aspen CO.July 2000
City Club Forum, Cleveland OH, Aug 2000
Narration, The Planets, with Cleveland Orchestra, Blossom Music Center, Ohio 2000
York, United Kingdom Sept. 2000
Performers and Artists for Nuclear Disarmament Concert, Cleveland OH Sept. 2000

Benedum Lecture, West Virginia University, Oct. 2000
Association of Science and Technology Centers (ASTC2000) Annual Meeting, Cleveland OH Oct 2000
Xerox Palo Alto Research Center, Palo Alto, Nov. 2000
John Carroll University, Nov 2000
Great Minds Lecture Series, Illinois Math and Science Academy, Aurora IL Dec 2000
Quark Matter 2001, Public Lecture, Brookhaven NY Jan 2001
Rochester Lecture, University of Durham, Feb 2001
Asimov Panelist, Museum of Natural History, NY Feb 2001
Vanderbilt University, March 2001
Rorschach Lecture, Rice University, March 2001
Shell Lecture, Natl Assoc. of Sicence Teachers Annual Meeting, St. Louis, Mar. 2001
Inauguration Lecture, Innauguration of President, Clark University , March 30, 2001
OLeary Distinguished Scientist Lecturer, Gonzaga U. April 2001
Morgan Lecturer, Texas Christian University. April 2001
Malstrom Lecture, Hamline University, St. Paul, Minn, April 2001
Distinguished Author Lecture, Museum of Natural History, NY April 2001
Skeptics Lecture, Caltech, May 2001
National Academy of Science, June 2001
Aspen Center for Physics, July 2001
Snowmass CO July 2001
Lawrence Centenary Lecture, U.C. Berkeley, July 2001
Directors Distinguished Lecture, Lawrence Livermore Laboratory, July 2001
2001 University National Colloquium, Ohio Wesleyan University, Sept 2001
Fermi Centennial Lecture, Fermi National Laboratory, Batavia IL Oct, 2001:
People Have the Power Tour, with Ralph Nader, Cleveland OH Oct, 2001:
Keynote Address, Virginia Assoc. of Science Teachers, Richmond VA Nov, 2001:
John Carroll University, Cleveland OH, Nov 2001
Evolution and God Symposium, Allen Theater, Cleveland OH March 2002
Ohio Board of Education, Veterans Auditorium, Columbus OH March 2002
Friedman Lecture, Penn State University, April 2002
City Club, Cleveland, April 2002
Arts and Science Lecture Series, Arts Center, Portland Oregon, May 2002
Gemant Lecture, William and Mary College, Williamsburg VA May 2002
Milton Lecture, Syracuse University, October 2002
Chancellor's Lecture, Vanderbilt University, October 2002
City Club, Cleveland, Dec 2002.
Perimeter Institute Public Lecture, Waterloo Ontario, Dec 2002
Science and Religion Lecture, John Carroll University, Jan 2003
Science and Journalism Lecture, Carleton University, Feb 2003
KITP Public Lecture, Santa Barbara, March 2003
Waynick Lecture, Penn State University, April 2003
Hamilton Lecture, Princeton University, April 2003
Woods Lecture, Westminster College, May 2003
Explorer Lecture, Cleveland Museum of Natural History, May 2003
European Space Agency, Distinguished Scientist Lecture, Holland, June 2003.
Space Place, Madison Wisconsin, August 2003.
Five College Lecture, U. Mass Amherst Oct 2003
Presidential Lecture, Clark University Nov 2003

Odyssey Lecture, Cal State, Long Beach, Dec 2003
Barnhart Lectures, Coastal Bend College, March 2004
Wilson Distinguished Lecture, Berry College, March 2004
Glicksman Lecture, Brown University, May 2004
Aspen Institute, Beyond Einstein Symposium, Aug 2004
White Dog Cafe, Philadelphia, Sept, 2004
ACLU Annual Likover Lecture, Cleveland Oct. 2004
Evolution and God Symposium, Cleveland Oct 2004
Futures Forum, Cleveland Oct 2004
Samuel Newton Taylor Lecture, Goucher College, Baltimore Nov 2004
AAAS Lecture, Washington Dec 2004
Origins Institute Lecture, McMaster University January 2005
Rudin Distinguished Scholar Lecture, Manhattan Marymount College, NY March 2005
Distinguished Undergraduate Lecture, U.T. Austin, March 2005
Benson Lecture, Miami University, March 2005
NASA Huntsville, World Year of Physics/Millennium 2 lecture, April 2005
World Year of Physics, American Physical Society Public Lecture, April 2005
World Year of Physics, Sigma Pi Sigma Lecture, Wright State, April 2005
Crump Lecture, St. Andrews School, Delaware , April 2005
San Jose Resident Scholar Lecture, San Jose Performing Arts Center, April 2005
Explorer Lecture, Cleveland Museum of Natural History, May 2005
University of Georgia, VP Research Open Forum. June 27,2005
University of Washington/ Wenatchee Confluence Technology Center, Wenatchee, WA, July 6, 2005
Blossom Music Center, Cleveland Orchestra, Holst, The Planets, July 30, 2005
Vancouver British Columbia, Rodgers Lecture American Urology Assoc., Aug 3, 2005
100 Years in Physics, Singapore, Aug 12,2005
International Conference on Physics Education Public Lecture, Delhi, India, Aug 2005
2005 Jonah Lecture, Mount Allison University, Sackville, NB, Canada, Sept 12, 2005
Maui, Hawaii, APS Nucl. Conference Public Lecture, Sept 17, 2005
Visions Colloquium, IBM Yorktown Heights, Oct 4, 2005
St. Louis Science Center, St. Louis, MO, Oct 8, 2005
University Lecture, Rockefeller University, NY, Oct 14, 2005
Center for Inquiry Lecture, New York Academy of Medicine, NY, Oct 18, 2005
Presidential Lecture, Tulsa, OK, Oct 20, 2005
American Enterprise Institute Keynote Address, Washington, DC, Oct 21, 2005
National Council of Science Writers, Pittsburgh, PA, Oct 24, 2005
International Humanism Conference, Amherst, NY, Oct 27, 2005
Canadian Undergraduate Physics Conf, London, Ont, CAN, Oct 28, 2005
Skeptics Society Lecture, Caltech, Pasadena CA Oct 30, 2005
Categorically Not!, Santa Monica CA, Cot 30, 2005
Chicago Il, Kavli Inst. Public Lecture, Nov 3, 2005
World Congress of Science Producers, Tokyo, Japan, Nov 7, 2005
Smithsonian Institution, Washington, DC, Nov 9, 2005
Frontiers of Astronomy, Cleveland Museum of Natural History, Nov 10, 2005
World Year of Physics Lecture, Severance Hall, Cleveland OH, Nov 14, 2005
IBM Lecture, Wittenberg College, Springfield, O, Nov 16, 2005
Goethe Institute, Los Angeles, CA, Nov 19, 2005
World Year of Physics Lecture, Kent State University, Nov 29, 2005
Kavli Institute Public Forum on Cosmology, Chicago, Dec 12, 2005

Akron Press Club, Jan 5, 2006
Wheeler Opera House, Aspen Winter Series, Aspen CO, January 24, 2006
Colorado College, Feb 2, 2006
The City Club, Cleveland, Feb 3, 2006
Cleveland Museum of Art, Feb 25, 2006
Lower Columbia College, March 13, 2006
St. Thomas, USVI, March 15, 2006
College of New Jersey, March 28, 2006
Wagner College, Staten Island, March 29, 2006
Asimov Memorial Debate, American Museum of Natural History, March 29, 2006
Bob Dole Center, University of Kansas, Lawrence, KS, April 4, 2006
Kalamazoo College, Michigan, April 11, 2006
Texas A&M University, April 15, 2006
Duke University, May 23, 2006
Smithsonian Institution, Washington, July 25, 2006
Seattle Town Hall, Sept 7, 2006
Yale University, Sept 14, 2006
University of Colorado Boulder, Sept 22, 2006
SUNY Binghamton, Oct 13, 2006
Marist College, Oct 21, 2006
Vanderbilt University, Oct 30, 2006
Cleveland Orchestra, Severance Hall, Cleveland, Dec 8-10, 2006
Rowfant Club, Cleveland OH, Dec 20, 2006
Cleveland Museum of Natural History, Jan 14, 2007
Nashville Unitarian Church, Feb 28, 2007
University of Kansas, March 12, 2007
TV of Tomorrow, San Francisco, March 13, 2007
Allegheny College, NY, March 15, 2007
Smithsonian Institution, Washington, March 28, 2007
Lawrence Hall of Science, Berkeley, CA, April 7, 2007
Dyer Observatory Exploration Night, Nashville, TN, April 25, 2007
Veritas First Light Festival, Tucson AZ, April 26, 2007
St. Olaf College, May 4, 2007
Rally For Reason, Petersburg, KY, May 28, 2007
Brookhaven National Laboratory, May 30, 2007
Caltech, June 2, 2007
IdeaCity, Toronto, June 19, 2007
Ideas Festival, Aspen CO July 2-5, 2008
UCLA, July 29, 2007
Center for Inquiry, Cleveland Aug 1, 2007
Concordia University, Oct 18, 2007
Genoa Science Festival, Nov 2, 2007
Arizona State University Beyond Center, Nov 8, 2007
Smithsonian Institution, Jan 17, 2008
IIT, Kharagpur, India, Feb 1, 2008
University of Arkansas Centennial Lecture, Feb 7, 2008
American Enterprise Institute, Washington DC Feb 11, 2008

(d) *Major Television Productions:*
Dark Matter in the Universe, BBC Antenna 1989
Escape from Earth, Discovery 1995
The Science of Star Trek, BBC and Discovery, 1995
Aliens, Are We Alone, Discovery 1995
Mysteries of the Universe, NOVA 1998
Universe 2001, Discovery and The Learning Channel 1999
Voyage to Mars, The Learning Channel 1999
The Final Frontier, BBC 2000-2001
Discovering the Universe, NHK 2001
How William Shatner Changed the World, Discovery, Mentorn Productions, 2005
Black Holes, Horizon, BBC, 2005
National Geographic "Naked Science", 2005
The Physics of Space Travel, "Starman" , Pioneer Productions, 2005
National Geographic, 'Naked Science', Origin of Structure, 2006
The History Channel, The Big Bang, 2006
Science Channel, The Hawking Paradox, 2006
The History Channel, Modern Marvels Star Trek Tech (Hosted by me), 2007
The History Channel, Beyond the Big Bang, 2007

(e) *Radio and Television Commentary:*
Another Space Race, July 29, 2004, Marketplace Commentary
Scientists Express Concern Over White House Policies Tavis Smiley Show, Oct 26, 2004 *Debate Over Intelligent Design* Newshour with Jim Lehrer August 5, 2005
Evolution and the Catholic Church Talk of the Nation Science Friday, Aug 12, 2005
Theoretical Science Made Practical Marketplace Commentary: August 29, 2005
Hiding in the Mirror: The Mysterious Allure of Extra Dimensions Talk of the Nation Science Friday Oct 21, 2005
Facing Reality: Public Policy, Science Education, and the Emperor's New Clothes, CSPAN presentation of Keynote address at American Enterprise Institute, Oct 21, 2005
The Media Report: Bogus History and Pseudoscience Nov 11, Australian Radio National Interview with Stephen Crittendon,
NPR's All Things Considered Commentary: In Favor of Barring ID from the Science Classroom, Dec 20, 2005
In the Eye of the Beholder Marketplace Commentary January 30, 2007
University Presidents, Take Notes, Marketplace Commentary, April 30, 2007
Putting Lies and Fraud on Exhibit, Marketplace Commentary, May 25, 2007
The ORelilly Factor, Fox Television, debate on Creation Museum, May 28, 2007
*Scientific Illiteracy,*CSPAN, telecast of speech at American Enterprise Inst, Feb 11, 2008

Major Research Areas and Activities:

Theoretical Particle Astrophysics and Cosmology, including studies of the early universe, neutrino astrophysics, dark matter, dark energy, quantum field theory and gravity, black holes, stellar evolution, nucleosynthesis, eschatology.

Science and Society/Public Policy: Science Education, Science Writing, Public School Science Curricula, Science and Religion, Scientific Integrity in Government, Missile Defense, Nuclear

Proliferation, Science and Pseudoscience

Related Professional Activities

1. Arms Control and Disarmament and Science and Society, Organizational Activities- I was an organizer and lecturer for the Union of Concerned Scientists Convocation against Nuclear War in 1981, and Regional Co-ordinator for the International Physicists Petition for a Nuclear Freeze. In 1987-88 I was a regional co-ordinator for the FAS Congressional Exchange Program, and more recently been active writing and lecturing on issues associated with National Missile Defense. I served on the American Physical Society Panel on Public Affairs for two years and served on a presidential candidacy Policy Planning Team. In February 2004, I was among a group of 62 prominent scientists that wrote a public statement regarding Scientific Integrity in Washington. I am on the Board of Scientists and Engineers for America, and the Board of Ohio Citizens for Science, and am Chair of the American Physical Society Forum on Physics and Society, Chair of the Physics Division of the American Association for the Advancement of Science, and on the Board of Sponsors of the Bulletin of the Atomic Scientists. In 2007 I participated in a trans-atlantic press event unveiling the new Doomsday Clock, and associated with that I have been writing extensively on issues related to nuclear defense and nuclear proliferation, and the dangers associated with a new nuclear arms race.

2. Science Education- I have maintained a strong interest in science education at all levels, and had extensive teaching experience-from a university level to lectures for the general public. While still a student I worked with the Ontario Science Center, giving public demonstrations, and training staff there. At M.I.T. I ran a live phone-in T.V. program on physics for undergraduates, and was nominated for a teaching award for instruction during a semester in which I received the highest teaching evaluation score in the undergraduate course guide. During that time I also taught a one-semester science course in the Cambridge public school system. At Yale, I taught courses ranging from a general physics course for non-scientists, to advanced graduate courses in particle physics, and in cosmology. I also served for two years on the Yale Course of Study committee, where I played a major role in revising the science requirements for undergraduates. In 1991 I was named a Sigma Xi National Lecturer, and visited campuses and industries around the country for two years giving public lectures. I also directed a 3-day seminar for the Association of Yale Alumni entitled The Legacy of Newton. In 2006 I was named a Phi Beta Kappa National Visiting Scholar, to be lecturing to Phi Beta Kappa Chapters around the country.

At CWRU I have sponsored and/or organized outreach programs as well as lecturing to high school and public school students and teachers throughout Northeast Ohio, including visiting schools to lecture or talk to students about science, and participated in programs such as the Young Scholars Program, Science Olympiad, and served on the Executive Committee of the Board or Trustees of the Cleveland School for the Arts, where I initiated a science committee that still exists to enrich the science program at the school. In the physics department itself I supervised the overhauling of the undergraduate and graduate physics curricula, the establishment of new undergraduate laboratories, the creation of six new undegraduate major tracks, and one new graduate degree program, and the creation of a new public lecture series. I also brought together a group of faculty from science and the humanities to help establish the form the new Seminar Approach to General Education curriculum at Case.

I was involved in the preparation of a national curriculum on cosmology for high school teachers sponsored by the American Association of Physics Teachers, and presented a series of workshops for teachers based on a teaching manual I wrote. In 1999 I served as an outside adviser to MIT for their new program aimed at introducing writing and communication aspects across their science curriculum. I have also given presentations on teaching science at the National Teacher Training Institute, and at regional teachers meetings, and at the APS-AAPT national meeting in Columbus. I presented the opening lecture at the American Association of Physics Teachers meeting in San Antonio in 1999, and a Shell Lecture at

the 2001 National Association of Science Teachers Conference in St. Louis. Most recently, in March 2002, I testified in a public presentation before the Ohio Board of Education on Science Standards for High School Science Classes in Ohio. I was an American Physical Society Centennial Lecturer in 1998. This year I was awarded the Oersted Medal by the AAPT, its highest recognition for teaching. I am in the process of preparing a new physics text for non-scientists, in association with Prentice-Hall. Finally, I have been on the executive committee of the board of trustees of the Great Lakes Science Center, the Board of the Cleveland Museum of Natural History, and the Board of the new Science Fiction Experience Museum in Seattle.

3. History Research- I pursued a research interest in Canadian History for several years, including one full year doing primary research at the Public Archives of Canada, Ontario, and a variety of private collections. During that time I was granted access to a variety of restricted materials from the files of the Attorney General of Ontario for work on the social history of the depression in Canada. Also during this period I helped edit a book on the Hutterites in Canada.

4. Popular writing, and Public Education: The popular science book I wrote in 1989 was named an Astronomy Book of the Year by the Astronomical Society of the Pacific (1990) and was been translated into 4 languages. My next book appeared in 1993, was named among the "best books of the year" by Library Journal, and was translated in 12 languages. My next book, The Physics of Star Trek appeared simultaneously in audio tape format in 1995, and was translated into thirteen foreign languages following its success as a national bestseller in the U.S. in 1995, and the U.K. in 1996, selling over 250,000 copies in this country. My sixth book. Atom, appeared in April of 2001 and was awarded the American Institute of Physics Science Writing award. In addition I regularly contribute to various newspapers, magazines, radio and television programs on science issues both in the U.S. and around the world. In connection with my writing, I have given popular lectures at such places as the American Museum of Natural History in New York, and the Albert Einstein Planetarium at the Smithsonian Air and Space Museum in Washington, as well as appearing on numerous radio and television programs in the U.S., Canada and Europe---including three BBC documentaries, NPR Science Friday, NPR All Things Considered, Nova, The Discovery Channel, National Geographic, UPN, The Learning Channel, Good Morning America, CBC As It Happens, CBC Quirks and Quarks, Canada A.M, The Nature of Things. I have written popular articles for Scientific American, theMcGraw-Hill Encyclopedia of Science, Yearbook of Science, the Reference Encyclopedia of Astronomy and Astrophysics, Nature, Discover, Wired Magazine, Physics World Magazine, Wizard Magazine, and book reviews for a variety of magazines, including Science, American Scientist, Physics Today, The Sciences, New Scientist, and Natural History. I also hosted a web site for New Scientist Magazine, in which I responded to questions from readers about physics, and I now write a monthly commentary column in Nature, Physics. My latest book, Hiding in the Mirror, appeared in 2005, and I am under contract to complete a book for the Great Discoveries series on the Science of Richard Feynman. I was also involved in producing and appearing in several other documentaries, recently appeared with William Shatner in a documentary on the science of Star Trek, and hosting a documentary for Modern Marvels, by the History Channel. I am currently working on a 6 part documentary on Energy.

5. Science, Public Policy, and Society: I have become increasingly active, in both organizing, and speaking out on issues associated with science and society. I regularly write on science issues for the New York Times, and besides my monthly column in Nature Physics, my opinion pieces have appeared in such newspapers the L.A. Times, the International Herald Tribune, The Washington Post, and The Chronicle of Higher Education, as well as magazines including New Scientist, Discover, Seed, and TV Guide. I am a commentator for both Public Radio International, and National Public Radio, with commentaries airing on both Marketplace, and Morning Edition. I have also appeared on national

television news programs, including Nightline, Lehrer News Hour, ABC News, and Fox News. In addition to my writing, and lecturing (I give on average 20-30 public lectures on these issues each year), I have become increasingly active in organizing on two different issues: scientific integrity in government, and the attack on science teaching in our public schools. I helped lead the effort in Ohio during the period 2002-2006, during which we ultimately successfully fought back an effort to alter the science standards and curricula in the public schools aimed at attacking the teaching of Evolution in science classes, and have spoken in states such as Kansas and Colorado on this issue, as well as advising lawyers in Dover Pennsylvania during the trial there. In 2005 I worked actively and successfully to get the Vatican to re-affirm their commitment that evolution was consistent with Catholic Theology. In addition, I have worked actively to combat efforts to censor and distort the results of science in government advisory panels, public documents etc, and was one of 60 scientists who wrote a public letter to the President on this issue. I currently am on the board of DEFCON (Defense of the Constitution) and the Board of Sponsors of the Bulletin of the Atomic Scientists. In 2006 I created the organization Help Ohio Public Education, which recruited pro-science candidates for State School Board elections. All of our candidates were successfully elected. In Dec 2007, I helped establish and joined the steering committee of *ScienceDebate2008*, a group that now represents more than 100 major organizations calling for a Presidential Debate on Science and Technology.

6. Science and Faith: Associated with my activities promoting the understanding of science, and also defending science against attack, I have become increasingly active in thinking and writing about issues associated with science and spirituality. Because of the increasing apparent popular conflict between these two distinct areas of human intellectual activity it is particularly important that an intellectually rigorous exploration of the nature of science and its possible impact upon faith be carried out. In my own case, this has been an evolving intellectual journey. While I initially focused on the separate natures of science and spirituality, I have responded to what I perceive as inappropriate misunderstandings of both science and faith by trying to elucidate the role that science can and cannot play in our understanding of possible purpose and design in nature and by trying to demonstrate how science must both guide faith but also how it is possible to enrich it. At the same time I have tried to emphasize the limitations of science when it comes to spiritual understanding. My efforts have focused on writing for a popular audience, and more recently have taken part in various academic forums on these issues, including delivering one of the 2006 Terry Centennial Lectures on Science and Faith at Yale University. Interestingly, my own scientific work, which has focused in part on eschatological issues in the past few years, has interesting implications for our understanding of our place in the Universe in both a spatial and temporal sense, of relevance to the general questions of origin, and purpose in the universe.

6. University Educational Leadership: In 1993, I moved to Case Western Reserve University to become Chairman of the Physics Department in order to oversee a major revitalization of the department and its facilities, and also to help in launching the new College of Arts and Sciences. During the twelve years of my Chairmanship, we completed a six million dollar renovation of the Physics research and teaching facilities, hired nine outstanding new faculty, created a new nationally recognized research group in particle astrophysics with a strong theoretical group and new experimental programs ranging from dark matter detection to high energy gamma ray astrophysics, overhauled the undergraduate and graduate curricula, increased the size of the past two sophomore classes of physics majors to 28 students (perhaps the largest set of physics majors per capita of any leading research university), built and outfitted a new set of introductory physics laboratories which now service over 600 undergraduates per year, created a new Engineering Physics major, a new Bachelor of Arts in Physics degree, a new BS in Mathematics and Physics, a new BS Physics degree with a concentration in Biophysics, and created two new prominent public lecture series. The departmental college-funded operating budget increased by

$300,000, and we obtained in excess of 5 million dollars in sponsored research funds per year, and raised over $8 million in new endowments from outside donors. According to the most recent national ranking of Ph. D. programs in Physics, the department ranked 16th in the country, up from 108th before I became Chair.

At the College level I have been heavily involved in various College and University projects, including fundraising, planning, and curricular issues. I have also worked intimately with the University Development Office, the Office of Alumni affairs, and the Case Alumni Association in fundraising both within Cleveland and around the world. I have taken a leadership role in visiting donors, lecturing to alumni groups, and preparing proposals for foundation support. In 1994, and again in 2006 I was elected to a three year term on the faculty Senate, dealing with University-wide issues. I have served on the Provosts advisory committee on tenure and promotion for the Business School, and also been involved on two long-term committees that have served to familiarize me with most aspects of university affairs. First, I served on the committee overseeing a year-long self-study in 1995 associated with the successful re-accreditation of CWRU, focusing on different areas of University activity, including electronic learning, undergraduate education, research, and continuing education. Next, in 1996-97, and again in 1997-98 I served on a Search Committee for Vice President for Research.Since this was a new position in 1996, the committee spent considerable effort exploring its possible scope and duties. When the position again became vacant in 1997, the new committee interviewed individuals both locally and nationally to gain advice on a variety of issues, focusing on the important question of technology transfer. As a result, I became much more aware of the challenges, and opportunities involved in this important area. I fostered the creation of an exciting new Masters Program in Physics Entrepreneurship, which we hope will be used as a new model for graduate education in physics at a national level. I raised 1.5 Million dollars to initiate this program, and have helped publicize it nationally. This program has recently been extended to incorporate other science departments at CWRU. Our first two entering classes have garnered three major business plan competition awards, and already two new companies have been created. I also served on the University Stakeholders committee, appointed by the President to raise our profile locally and nationally.

Based on my interests in expanding the research profile of the University, I was asked to Chair a President's Commission on Graduate Education and Research, which examined ways to alter the University administrative structure and fundraising priorities in order to enhance the research and graduate education at CWRU. This commission produced a report in April of 2004, and on that basis a new Research Council has been established, of which I am a member.

I have led the creation of a new Center for Education and Research in Cosmology and Astrophysics at the University, in coordination with the Cleveland Museum of Natural History. This center will ultimately support the growth of the nationally ranked experimental and theoretical research program that we have built at CWRU, as well as play a leadership role in enhancing public understanding of developments in cosmology and astrophysics by (1) bringing in CERCA fellows, postdoctoral researchers who will work with faculty here, and will also interact with the Cleveland Museum of Natural History Shafran Planetarium to help develop new graphical presentations of forefront developments in cosmology and astrophysics, (2) hosting senior scientists who will visit for short terms, (3) sponsoring public lectures and conferences. The inaugural event sponsored by CERCA, and funded in part by the Kavli Foundation, was a conference on the Future of Cosmology, part of which was broadcast nationally on NPR, and which featured public lectures by Steven Weinberg and Stephen Hawking.

I have also played a key role in helping shape the form of the new Seminar Approach to General Education requirements, which was instituted in 2005 for all undergraduates at CWRU. This program was under development for several years, through a pilot process, and a great deal of discussion and debate has been taking place within the faculty to determine its final form. I led a small

subcommittee of colleagues from the Humanities and Science Departments to help develop a proposal that was able to overcome an impasse in the deliberations, and which helped shape the final form of the proposal that was approved by the College of Arts and Sciences in the spring of 2004.

During the period 2005-7, I took a variety of different roles at the University, including helping to plan for the new West Quad Research Complex for the Medical School, Chairing an external Strategic Planning committee for the Dept. of Chemistry, and Chairing the Advisory Committee on Research Computing for the VP for Information Technology Services.

I am currently involved in raising funds for a new Origins Institute, an institute to be affiliated with the University which will become a national center for research and education in issues associated with Origins, including origins of the universe, the galaxy, the solar system, human origins, origins of cognition, etc.