

# CURRICULUM VITAE (2024)

## 1. PETER H. SCHULTZ

Professor Emeritus  
Department of Earth, Environmental, and Planetary Sciences  
Brown University  
Providence, Rhode Island

## 2. HOME ADDRESS:

P.O. Box 831  
East Greenwich, RI 02818

## 3. EDUCATION:

B.A. Carleton College, 1966, Honors in Major  
Ph.D. in Astronomy, University of Texas at Austin, 1972  
Dissertation: "A Preliminary Morphologic Study of the Moon"

## 4. PROFESSIONAL APPOINTMENTS

1966-1967	Summer Employee: U.S. Naval Observatory, Washington, D.C.
1970-1973	Research Scientist, Department of Geological Sciences, University of Texas, Austin, Texas
1973-1975	National Academy of Sciences-National Research Council Postdoctoral Research Associate, NASA Ames Research Center (Moffett Field, California)
1975-1976	Research Associate: NASA Ames Research Center (through University of Santa Clara, Santa Clara, California)
1976-1981	Staff Scientist: The Lunar and Planetary Institute (Houston, Texas)
1981-1984	Senior Staff Scientist: The Lunar and Planetary Institute (Houston, Texas)
1984-1996	Visiting Scientist: The Lunar and Planetary Institute (Houston, Texas)
1984-1994	Associate Professor: Department of Geological Sciences, Brown University (Providence, Rhode Island)
1994-2014	Professor: Department of Geological Sciences, Brown University, Providence, Rhode Island
2014-present	Professor Emeritus, Professor Research: Department of Earth, Environmental, and Planetary Science, Brown University (Providence, Rhode Island)
2014-present	Scientific Consultant

## 5. COMPLETED RESEARCH

a. **PUBLISHED BOOKS, PAPERS AND ABSTRACTS:** see listings at end

b. **INVITED LECTURES (1985-2024):** Only lists activities while at Brown.

### 1985:

Conference on the Evolution of the Martian Atmosphere (Hawaii)  
Workshop on Apollo 15 (keynote speaker)  
Workshop on Space Station Planetology Experiments  
Planetary Geology Speakers Bureau (Nassau Community College; Middlebury College)  
Lunar and Planetary Science Conference XVII: Panel on Martian Volatiles  
Volcanological Society of Japan (Tokyo)

### 1986:

Sixth Hypervelocity Impact Symposium (San Antonio, Texas)  
Mercury Conference (keynote speaker)  
NASA Goddard Lecture Series

### 1987:

Boston University (Colloquium)  
Brown-Vernadsky Microsymposium (Moscow)  
University of New Hampshire (Colloquium)  
M.I.T. Planetary Society Space University  
American Geophysical Union Spring Meeting (Invited Speaker, San Francisco)  
AAS Division of Planetary Sciences (Keynote Speaker, Tucson)  
Workshop on Mars Sample Return (Keynote speaker, Houston)

### 1988:

American Geophysical Union Spring Meeting (Invited for three separate talks, Baltimore)

### 1990:

AIAA Student Lecture Series (NASA Goddard)  
American Geophysical Union Fall Meeting (Invited Speaker, San Francisco)

### 1992:

National Academy of Sciences, Cordoba, Argentina (February)  
University of Washington, Seattle (April)  
American Geophysical Union Spring Meeting (Invited Speaker, Montreal)  
URI Graduate School of Oceanography (September, Colloquium)  
Hypervelocity Impact Symposium Keynote Speaker (Austin, TX)

Lunar and Planetary Science Conference, Space Science Education, Subliminal Side of Science (Invited Speaker, Houston)

**1993:**

Arizona State University (February, Colloquium and Seminar)  
Los Alamos National Laboratories (March, Colloquium)  
Cornell University (April, Colloquium)

**1994:**

American Geophysical Union Fall Meeting (Invited Speaker, San Francisco)  
New York Academy of Sciences (January, Invited Speaker, New York)  
University of Massachusetts (February, Colloquium, Amherst)  
Dartmouth College (March, Colloquium and Seminar)  
Rensselaer Polytechnic Institute (April, Colloquium, Troy, NY)  
American Geophysical Union Spring Meeting (Invited for two separate talks, Baltimore)

**1995:**

University of Iowa and Iowa Department of Natural Resources (Iowa City)  
American Association for the Advancement of Science (Atlanta)  
University of Pittsburgh  
International Conference on Advanced Materials (Cancun)  
American Petrofina (Houston)

**1996:**

University of Rhode Island, Graduate School of Oceanography (Narragansett, RI)  
American Association of Petroleum Geologists National Meeting (San Diego)  
Brown University, Departmental Colloquium  
Carleton College Alumni Weekend Guest Speaker

**1997:**

Rutgers University (New Brunswick, New Jersey)  
University of Delaware (Newark, Delaware)  
University of New Brunswick (Fredericton, New Brunswick)  
Commencement Forum Participant (Brown University)

**1998:**

VII Congress on Argentine Paleontology and Biostratigraphy, 10/9/98 (Bahia Blanca),  
Invited Speaker  
Colloquium, Brown University  
Colloquium, Rhode Island College (Space Grant)  
Colloquium, Lamont-Doherty Geophysical Laboratory (NY)  
Astrobiology Institute Review Panel

**1999:**

Colloquium, John Hopkins Applied Physics Laboratory (Baltimore, MD)  
Colloquium, SUNY Stony Brook (NY)

Seminar, Museo Mar del Plata, Argentina  
National Space Grant Director's Meeting (Hawaii)  
Keynote Speaker, Aeroballistic Ranges Conference (Livermore, CA)  
Visiting Lecture, Wheaton College  
Visiting Lecture, URI Geology

**2000:**

Colloquium, Smithsonian (Washington, D.C.)  
Colloquium, Department of Geological Sciences (Brown)  
Seminar, YPF Petroleum Company (Buenos Aires)

**2001:**

Colloquium, La Pampa University (Santa Rosa University)

**2003:**

Invited Keynote, Impact Cratering Workshop (Houston, TX)  
Colloquium, Northwestern University (Evanston, IL)  
Colloquium, Brown University  
Invited Keynote, Argentine Paleontological Association Congress (La Pampa, Argentina)  
Invited Colloquium, Woods Hole Oceanographic Institution (MA)

**2004:**

Invited Barringer Award, Meteoritical Society (Rio de Janeiro, Brazil)  
Invited Plenary for SPARK Summer program (Brown University)

**2005:**

ICSU Dark Nature, IGCP 490 (Mar Chiquita, Argentina, March): *Invited Keynote, Third Joint Meeting, Holocene environmental catastrophes in South America: from the lowlands to the Andes*, sponsored by the International Geological Correlation Programme (IGCP), a joint initiative of UNESCO (United Nations Educational, Scientific and Cultural Organization) and IUGS (International Union of Geological Sciences).

Bryant University (April): Special University-wide Colloquium

Oberlin College (April): Colloquium and Seminar

Invited Speaker (May): Brown University Commencement Forum

Shock Effects on Condensed Matter (Baltimore, July): *Invited Keynote Address*

Atmospheric Effects on Impact Ejecta Emplacement (Baltimore, July): Invited review

“Asteroid, Comets, and Meteorites” Conference (August): *Invited talk*, Buzios, Brazil (August)

Northeast Regional Space Grant Directors Meeting (August): *Invited Keynote* (August), New Hampshire

Division of Planetary Science (September): First results from the Deep Impact Mission, *Invited*, Cambridge, England

Division of Planetary Science (September): “Shooting the Moon: A Personal History of Lunar Impact Theories,” *Invited*, Historical Division of the DPS, Cambridge, England

Brown University, Department of Geological Sciences (September): Colloquium  
National Space Grant Director's Meeting (October): *Invited Keynote* (NASA Kennedy  
Space Center)

Hypervelocity Impact Symposium (Lake Tahoe, October): *Invited Keynote* Address  
American Geophysical Union Fall Conference (December): Whipple Lecture (*Invited*)

**2006:**

Invited Keynote: 23rd annual Alexander Graham Christie Lecturer, Johns Hopkins  
University (March 16, 2006)

Invited Keynote: Wisconsin Space Grant Statewide Consortium Meeting (August 10,  
2006)

**2007:**

Colloquium: "The Deep Impact Oblique Impact Experiment" *University of Colorado,*  
Astrophysical and Planetary Sciences, Boulder, CO (January 2007)

Colloquium: "The Moon: Dead or Alive" *Southwest Research Institute,* Boulder, CO  
(January, 2007)

Colloquium: "The Deep Impact Oblique Impact Experiment" *MIT Plasma and Fusion*  
*Center*

Colloquium: "Kinetic Prospecting: Results from Deep Impact and Upcoming Strategies"  
Brown University (September, 2007)

Invited Workshop Presentation: "Hypervelocity Impact Flash Experiments" *NASA*  
*Marshal,* Huntsville, AL (Feb., 2007)

Keynote (Invited): "The Deep Impact Oblique Impact Experiment" *American Physical*  
*Society* (Shock and Condensed Matter), Kona, Hawaii

Keynote (Invited): "Probing Planetary Surfaces with Hypervelocity Impacts,"  
*Hypervelocity Impact Symposium,* Williamsburg, VA

Keynote (Invited): "Digging a Comet" Results from the Deep Impact Mission" *Artist*  
*Lecture Series Symposium* (Hastings College, NE)

Keynote (Invited): "Kinetic Prospecting of planetary Surfaces" Dynamic Compression of  
Condensed Matter, *The Royal Society,* London, December 6, 2007.

Invited Presentation: LCROSS Impact and Coordination of LRO Observations, Lunar  
Reconnaissance Orbiter Project Review, NASA Goddard Space Flight Center Nov.  
29, 2007.

**2008:**

Invited Colloquium: "Making the Man in the Moon: What the South-Pole-Aitken Basin  
did to the Lunar Nearside," *Lunar and Planetary Institute 40<sup>th</sup> Anniversary Seminar*  
*Series,* Houston, TX (February, 2008)

Invited Seminar: "A likely but improbable event: The unique consequences of oblique  
impacts in Earth history," Massachusetts of Technology, Cambridge (January,  
2008)

Invited Colloquium: "Chicken Little or Armageddon: Past and Future Threats,"  
University of Connecticut, Storrs, CT (April, 2008)

Invited Presentation: "The Moon: Dead or Alive," *American Association of Petroleum*  
*Geologists,* San Antonio (April, 2008)

**2009:**

- Invited Speaker: *Kinetic Prospecting of Planetary Surfaces* (NASA-Ames/ Hawaii-University Cooperative Agreement, February, 2009)
- Invited Speaker: National Space Grant Meeting, *LCROSS: Shooting the Moon*, Portland, OR (October, 2009)
- Invited talk: *LCROSS: Shooting the Moon*, Regional Planetary Image Facilities meeting, Washington DC (December, 2009)
- Invited Speaker: Lunar Exploration Analysis Group Meeting, *Shooting the Moon: First Results from LCROSS* (November, 2009)
- Colloquium Speaker (and seminar): SUNY Buffalo, *The Day the Sky Fell on Peru* (October, 2009)
- Invited Speaker: American Geophysical Union, *Lost Impacts* (December)
- Keynote Speaker: *LCROSS Results*, Regional Planetary Image Facilities meeting (Washington, DC)

**2010:**

- Colloquium Speaker: Department of Geology, *University of Toronto* “Why the Two-Faced Moon?” (Jan. 29, 2010)
- Invited talk: *Lunar Exploration Analysis Group (LEAG) Meeting*: “Shooting the Moon: A Review of the LCROSS Results” (Washington, DC).
- Colloquium Speaker: *Ohio University* (January 28): “Chicken Little or Armageddon: The threat from Cosmic Debris”
- Colloquium Speaker: Brown University, “Beneath the Shadows of the Moon” (February).
- Invited Speaker: *11<sup>th</sup> International Hypervelocity Impact Society* (Freiburg Germany, April).
- Invited Acceptance Award Talk: at the *11<sup>th</sup> International Hypervelocity Impact Society*, Freiburg Germany.
- Keynote Speaker: *25<sup>th</sup> Anniversary of the DLR Regional Planetary Image Facility* (Berlin, Oct., 2010). This invited talk was coupled to the opening of 3D Mars at DLR (Germany’s equivalent to NASA’s JPL).

**2011:**

- Invited talk: *Possible Sources of Polar Volatiles (invited)* American Geophysical Union, Fall Meeting (San Francisco)

**2012:**

- Invited talk: *Origin of the Imbrium Sculpture*, G. K. Gilbert Award Session at the *Geological Society of America* (November, Charlotte, NC).
- Invited talk: *Making the Man in the Moon*, College of Charleston (March, Charleston, SC)

**2013:**

- Colloquium: “*Kinetic Planetary Probes: New Approaches and Challenges*” (Department of Chemical Engineering, URI)
- Invited talk: “*Shooting the Moon: Strategies and results of excavating buried hidden*”

*volatiles on the Moon from NASA's LCROSS mission.*” PETER (Pressure, Energy, Temperature and Extreme Rates) Conference, Institute of Shock Physics, Imperial College, London (February, 2013, London)

Invited talk: "*Making the Man in the Moon: Origin of the Lunar Dichotomy by a Major Lunar Impact*" and "*Shooting the Moon: Results from the LCROSS Mission*"  
University of New Brunswick (May, Fredericton, NB)

**2014:**

Invited talk: "*Using kinetic probes for exploration and defense: lessons from the Deep Impact and LCROSS missions,*" 2014 International AIDA Workshop (October), Applied Physics Laboratory, Laurel, MD

Colloquium: "*Impact Amber: Preserving Flora and Organics inside Impact Melt Breccias*" Bryant University (October)

Invited talk: "*Impact of Impacts*" Petrobras, Houston (April)

**2015:**

Invited Colloquium: "*Making the Man in the Moon*" (Brown, March)

Invited talks: Co-organized Workshop on Impact Cratering (June, San Juan, Argentina) and presented seven 90 minute invited lectures:

*"General Overview & History of Impacts on Earth"*

*"Cratering Record on Earth"*

*"Crater Formation Processes"*

*"Flux Rate on Earth & Planets: Impact Risks"*

*"Argentine Impact Record"*

*"Impact Extinctions: Causes and Effects"*

*"Impact Cratering and Economic Resources"*

Invited talk: "*Scaling laboratory experiments to natural planetary experiments*" Bridging the Gap III meeting (September, Freiburg, Germany)

**2016:**

Invited Colloquium: "*Making the Man in the Moon*" Rutgers University

Invited Colloquium: Virgil E. and Mildred L. Barnes Distinguished Lecture Series in Geology: "*Making the Man in the Moon*" (DeFord Lecture Series, Jackson School of Geosciences, University of Texas)

Invited Seminar: *Impact Extinctions*, Paleontology/Paleobiology, Jackson School of Geosciences, University of Texas

Invited Talk: *Chicken Little Was Right*, Carleton College

**2017:**

Invited Seminar: *The Moon* (October, San Juan, Argentina) presented *eight* 90 minute invited lectures

**2018:**

Invited Talk: “*A Career of Exploration: My Backyard and Beyond*” (invited talk to 2018 *Astro-Assembly*, Scituate, RI)

Invited Talk: “*Simon Wing and his Marvelous Multiplying Cameras*” (invited talk to *Wing Museum*, Sandwich, MA, May 2018)

**2019:**

Invited Talk: Spring Symposium CCRI talk for the Center for Innovative Teaching, Learning, and Assessment (CITLA)

Invited Talk: Apollo 50<sup>th</sup> Anniversary Activities (National Space Grant Directors Meeting, VT)

**2020-2021 COVID**

**2022**

Invited talk: *Lessons from Kinetic Probes – Deep Impact, LCROSS, and DART* (Lunar and Planetary Science Conference 54)

**2023**

Invited talk: *History of the Boston Box: Daguerreotype and Wet Plate Cameras from New England* (Daguerreian Society, September, Boston)

**6. RESEARCH IN PROGRESS (2024)**

- a) Investigating widespread strewn field of glass due to a fireball over Chile 11,500 years ago.
- b) Performing research on the effect of impact trajectory (direction and angle) on crater structure and other observational metrics
- c) Using the *NASA Ames Vertical Gun Range* to understand new scaling relations for different conditions of impact and energy partitioning.
- d) Investigating impact record in Argentina as a means to understand the chrono-stratigraphy of sedimentary sequences over the last 10 million years.
- e) Assessing the impactor signature within planetary impact craters
- f) Investigating the consequences of large-body impacts on small bodies.
- g) Continuing investigations on the erosion of craters as expressions of lithology.
- h) Assessing strategies for asteroid deflection.
- i) Understanding the formation of lunar swirls

**7. SERVICE (1984-2017)**

**a. TO THE DEPARTMENT AND THE UNIVERSITY**

- |           |                                                                                                |
|-----------|------------------------------------------------------------------------------------------------|
| 1984-1985 | Under the Elms, Speaker<br>Corporation Spouses, Speaker                                        |
| 1985-1986 | Brown University Club of Boston, Guest Speaker<br>Sophomore Class "Concentration Day" panelist |



	Academic Code Committee
	Fulbright Undergraduate Award Committee
	Departmental Advisory Committee
1986-1987	Educational Policy Committee
	Independent Studies Subcommittee
	Academic Code Committee
	Fulbright Undergraduate Award Committee
	Freshman Orientation Week Participant
	Departmental Advisory Committee
	Departmental Peer Review Committee
1987-1988	Independent Studies Subcommittee
	Academic Code Committee
	Fulbright Undergraduate Award Committee
	Freshman Orientation Week Participant
	Departmental Peer Review Committee
1988-1989	Academic Code Committee
	Fulbright Undergraduate Award Committee
	Independent Studies Subcommittee
	Departmental Computer Committee
1989-1990	Academic Code Committee
	Fulbright Undergraduate Award Committee
	Curriculum Advisor Program Advisor
	Departmental Computer Committee
	Departmental Building Committee
1990-1991	Parents Weekend Lecture
	Academic Code Committee
	Fulbright Undergraduate Award Committee
	Curriculum Advisor Program (CAP) Advisor
	Departmental Curriculum Committee
	Departmental Computer Committee
<b>1991-1992</b>	<b>Sabbatical</b> ( <i>But volunteered for Brown Alumnae Talk, Seattle Chapter, and Under the Elms, Speaker</i> )
1992-1993	Under the Elms
	Academic Code Committee
	Departmental Advisory Committee
1993-1994	Academic Code Committee
	Departmental Advisory Committee
	Faculty Search Committee
	Curriculum Advisor Program (CAP)
	Sophomore Advisor
	Brown Alumni Lecture (N. Kingston, RI)
1994-1995	Academic Code Committee
	Building Committee
	Departmental Computer Committee

	Faculty Search Committee
	Curriculum Advisor Program (CAP)
	Tenure Review Committee
1995-1996	Academic Code Committee
	Curriculum Advisor Program (CAP)
	Sophomore Advisor
	Curriculum Committee
1996-1997	Curricular Advisor Program (CAP)
	Academic Code Committee
	Curriculum Committee
<b>1997-1998</b>	<b>Sabbatical</b>
1998-1999	Curricular Advisor Program (CAP)
	Library Committee
	Sophomore Advisor
1999-2000	Curricular Advisor Program (CAP)
	Library Committee
	Keynote speaker, Points on the Compass, (General Assembly),
	Department Curriculum Committee
2000-2001	Curricular Advisor Program (CAP)
	Sophomore Advisor
	Building Committee
	Professional Development Committee
2001-2002	Sophomore Advisor, Computer Committee
	WiSE Faculty Advisor
	CAP Advisor
2002-2003	Department Colloquium Committee
	CAP Advisor
	WiSE Faculty Advisor
	Undergraduate Low-Gravity Flight Opportunity (KC-135) Advisor
2003-2004	CAP Advisor (2004, spring); sabbatical (2004, fall)
	Undergraduate Low-Gravity Flight Opportunity (KC-135) Advisor
<b>2004-2005</b>	<b>Sabbatical</b> (spring), leave (fall)
	“Boldly Brown” participant
	“Brown Commencement Forum” participant (May)
2006	CAP advisor, sophomore advisor
2007	CAP advisor, sophomore advisor
2008	Freshman advisor, sophomore advisor,
2009	Freshman Advisor, Sophomore Advisor, <i>CAP</i> advisor.
2010	Sophomore advisor
	Media Relations Interviews

2011	Freshman Advisor, Sophomore Advisor, CAP course, Freshman Seminar, Planetary Faculty Search Committee, Graduate Student Research Advisory Committees (6) Young Faculty Mentoring Committee
2012	Freshman Advisor, Sophomore Advisor, CAP course, Graduate Student Research Advisory Committees (6) Young Faculty Mentoring Committee
2012	Sabbatical Leave (fall; spring) Young Faculty Mentoring Committee
2013	Senior Thesis advisor Graduate Student Research Advisory Committees (5)
2014	Professor Research Graduate Student Research Advisory Committees (4)
2015	Professor Research Graduate Student Research Advisory Committees (4)
2016	Professor Research Graduate Student Research Advisory Committees (4)
2017	Professor Research Graduate Student Research Advisory Committees (4)
2018	Professor Research Graduate Student Research Advisory Committees (2)
2019	Professor Research Graduate Student Research Advisory Committees (1)
2019	Professor Research Graduate Student Research Advisory Committees (1)
2020	Professor Research Graduate Student Research Advisory Committees (1)

**b. TO THE PROFESSION (1976-2024)**

**1976-1981** *Basaltic Volcanism* Study Project, Member

**1977** Associate Editor, *Proceedings of the Conference on Comparisons of Mercury and the Moon*

- Director, *Lunar and Planetary Institute Data Center* (1977-1984)
- 1976-1977** *NASA Proposal Review Panel, Planetary Geology*  
 Director, *Lunar and Planetary Institute Data Center* (1977-1984)
- 1978-1980** *NASA Planetary Cartography Working Group, member*  
 Director, *Lunar and Planetary Institute Data Center* (1977-1984)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1980** Convener and Co-Editor, *Conference on Multi-ring Impact Basins*  
 Director, *Lunar and Planetary Institute Data Center* (1977-1984)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1982** Science Advisor for *Mars: Evolution of its Climate and Atmosphere*  
 (MECA) Study Project (LPI)  
 Director, *Lunar and Planetary Institute Data Center* (1977-1984)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1981-1983** *NASA Proposal Review Panel, Lunar and Planetary Geology and*  
 Geophysics  
 Director, *Lunar and Planetary Institute Data Center* (1977-1984)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1982** Co-Editor, Proceedings of the National Academy of Sciences Conference on the  
*Large Body Impacts and Terrestrial Evolution: Climatological and*  
*Biological Implications*  
 Director, *Lunar and Planetary Institute Data Center* (1977-1984)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1982-1983** Chairman, *NASA Regional Planetary Image Facilities Directors' Committee*  
 Director, *Lunar and Planetary Institute Data Center* (1977-1984)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1985** Chairman of *NASA Working Group on Impact Experiments on the Space*  
*Station* (Workshop on Space Station Planetology Experiments,  
 Flagstaff, AZ, June 1985)  
 Director, *Northeast Planetary Data Center* (1984-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1985-1987** Associate Editor, *Reviews of Geophysics*  
 Director, *Northeast Planetary Data Center* (1984-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1986** Member of NASA's *Lunar Geoscience Working Group* (a group responsible for  
 documenting a scientific rationale for future lunar exploration)  
 Director, *Northeast Planetary Data Center* (1984-2022)

- Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1986-1989** Member of *Planetary Geology Working Group* (an advisory panel for NASA's Planetary Geology and Geophysics Program)  
 Director, *Northeast Planetary Data Center* (1984-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1987-1989** *Planetary Data Science Steering Group* (NASA Advisory Committee)  
 Director, *Northeast Planetary Data Center* (1984-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1987-1990** *Committee on Planetary and Lunar Exploration* (National Academy of Sciences/National Research Council)  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1991-1994** Editorial Advisory Board, *Earth in Space*, American Geophysical Union  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1992** Organizing Committee for *1992 Hypervelocity Impact Symposium* (Austin, TX)  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1992** Review Panel, *Venus Data and Analysis Program*  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1993** Organizing Committee for *1994 Hypervelocity Impact Symposium* (Santa Fe, NM)  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1994-1996** *NASA Planetary Geology and Geophysics Review Panel*  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1994-1997** Editorial Board, *Geology*

- Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1994-1996** Organizing Committee for 1996 *Hypervelocity Impact Symposium*  
 (Freiburg, Germany)  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1995-1997** *Planetary Data Science Steering Group*  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 1999-2000** Organizing Committee for 2000 *Hypervelocity Impact Symposium*  
 Frequent Chairman at national scientific meetings  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 2000-2001** Organizing/Review Committee for 2000 *Hypervelocity Impact Society*  
 Review Committee for *RPI Astrobiology NSCORT Program "Origins of Life: Interstellar molecules to Introns"*  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 2001-2002** Review Committee for *RPI Astrobiology NSCORT Program "Origins of Life: Interstellar molecules to Introns"*  
*Lunar and Planetary Science Conference* Organizing Committee  
 Review Panel, *NASA Planetary Geology and Geophysics*  
 Chair, *Regional Planetary Image Facilities Directors' Council*  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 2002-2003** Review 15-20 papers and proposals per year  
*Lunar and Planetary Science Conference* Organizing Committee  
 Review Panel, *NASA Planetary Geology and Geophysics*  
*NASA Management Operations Working Group* Member  
 Chair, *Regional Planetary Image Facilities Directors' Council*  
 Hosted *Northeast Regional Space Grant Consortia Meeting*  
 Chair, *Mars Wind Tunnel Site Review Committee*  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)

- Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 2003-2004** Review 15-20 papers and proposals per year  
*NASA Management Operations Working Group* Member  
 Chair, *Regional Planetary Image Facilities Directors Council*  
*Mars Data Analysis Program* Review Panel  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 2005** Reviewed 15-20 papers and proposals per year  
*NASA Management Operations Working Group* Member  
 Chair, *Regional Planetary Image Facilities Directors' Council*  
*Regional Planetary Image Facility Site Review Committee*  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 2006** Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)  
 Reviewed 15-20 papers and proposals per year  
 Lunar and Planetary Institute 5-Year Review Committee (November)  
 Planetary Geology and Geophysics Proposal Review Panel (July)  
*NASA Management Operations Working Group* Member  
 Chair, *Regional Planetary Image Facilities Directors' Council*  
 Member, *Regional Planetary Image Facility Site Review Committee*
- 2007** Review 20 papers and proposals per year  
 Chair: Review Committee for *Planetary Aeolian Laboratory* (NASA Ames)  
*Executive Committee*, National Space Grant Consortium, elected Member  
*National Space Grant Alliance*, Board Member  
*NASA Management Operations Working Group*, Member  
*Planetary Aeolian Laboratory Review Committee*, Chair  
*Regional Planetary Image Facilities Directors' Council*, Chair  
*Regional Planetary Image Facility Site Review Committee*, Member  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)
- 2008** Reviewed ~30 papers and proposals  
 Director, *Northeast Planetary Data Center* (1984-2021)  
 Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
 Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)  
 Hosted *NASA Ames Vertical Gun Range Review* at NASA Ames  
*Planetary Geology and Geophysics Review Panel*  
 Executive Committee, *National Space Grant Consortium*, elected Member

*National Space Grant Alliance*, elected Board Member  
*NASA Management Operations Working Group*, Member  
*Regional Planetary Image Facilities Directors' Council*, Chair  
*Regional Planetary Image Facility Site Review Committee*

**2009**

Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2014)  
Reviewed ~10 papers and proposals  
*Executive Committee*, National Space Grant Consortium, elected Member  
*National Space Grant Alliance*, elected Board Member  
*Regional Planetary Image Facilities*, Director Council, Chair  
*11<sup>th</sup> International Hypervelocity Impact Symposium*, Organizing Committee  
*NASA Ames Vertical Gun Science Coordinator*

**2010**

Reviewed ~15 papers and proposals  
*Executive Committee*, National Space Grant Consortium, elected Member  
*National Space Grant Alliance* (elected Board Member)  
*Regional Planetary Image Facilities*, Directors' Council, Chair  
*11<sup>th</sup> International Hypervelocity Impact Symposium*, Review Committee  
*AGU Americas*, Organizing Committee  
Hosted the *Regional Space Grant Directors'* meeting (September, 2010, Newport, RI);  
Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)  
*National Space Grant Directors' Conference* (Washington DC, March 2010)  
*National Space Grant Alliance* meeting (Washington DC, March 2010)  
*National Space Grant Executive Committee* meeting (Washington DC, March 2010)  
*National Space Grant Alliance* transition meeting (Washington, DC, August 2010)  
*National Space Grant Executive Committee* transition meeting (Washington, DC, August 2010)  
*National Space Grant Directors' Conference* (Portland, ME, October 2010);  
*National Space Grant Alliance* meeting (Portland, ME, October 2010)  
*National Space Grant Executive Committee* meeting (Portland, ME, October 2010)

**2011**

Reviewed ~12 papers and proposals  
*Executive Committee*, National Space Grant Consortium, elected Member  
*National Space Grant Alliance* (elected Board Member)  
Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
Science Coordinator, *NASA Ames Vertical Gun Range* (1979-2012)  
*National Space Grant Directors' Conference* (Washington DC; March 2011)



*National Space Grant Alliance* meeting (Washington DC; March 2011)  
*National Space Grant Executive Committee* meeting (Washington DC; March 2011)  
*National Space Grant Directors' Conference* (Green Bay, WI; September 2011);  
*National Space Grant Alliance* meeting (Green Bay, WI; September 2011)  
*National Space Grant Executive Committee* meeting (Green Bay, WI; September 2011)  
*Northeast Planetary Image Facilities Directors'* meeting (Flagstaff, AZ; October 2011)  
*Regional Space Grant Directors* meeting (Portsmouth, NH; June 2011)

## 2012

Reviewed ~12 papers and proposals  
*Executive Committee*, National Space Grant Consortium, elected Member  
*National Space Grant Alliance* (elected Board Member)  
Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
Principle Investigator, *NASA Ames Vertical Gun Range* (2012-2017)  
*National Space Grant Directors' Conference* (Washington DC; March 2012)  
*National Space Grant Alliance* meeting (Washington DC; March 2012)  
*National Space Grant Executive Committee* meeting (Washington DC; March 2012)  
*National Space Grant Directors' Conference* (Seattle, WA; October 2012)  
*National Space Grant Alliance* meeting (Seattle, WA; October 2012)  
*National Space Grant Executive Committee* meeting (Seattle, WA; October 2012)  
*Northeast Planetary Image Facilities Directors'* meeting (Tempe, AZ; November 2012)  
*Regional Space Grant Directors* meeting (Burlington, VT; June 2011)

## 2012

Reviewed ~12 papers and proposals  
*Executive Committee*, National Space Grant Consortium, elected Member  
*National Space Grant Alliance* (elected Board Member)  
Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
Principle Investigator, *NASA Ames Vertical Gun Range* (2012-2017)  
*National Space Grant Directors' Conference* (Washington DC; March 2012)  
*National Space Grant Alliance* meeting (Washington DC; March 2012)  
*National Space Grant Executive Committee* meeting (Washington DC; March 2012)  
*National Space Grant Directors' Conference* (Seattle, WA; October 2012)  
*National Space Grant Alliance* meeting (Seattle, WA; October 2012)  
*National Space Grant Executive Committee* meeting (Seattle, WA; October 2012)

*Northeast Planetary Image Facilities* Directors' meeting (Tempe, AZ; November 2012)  
*Regional Space Grant Directors* meeting (Burlington, VT; June 2011)

## 2013

Reviewed ~10 papers and proposals  
*Executive Committee*, National Space Grant Consortium, elected Member  
*National Space Grant Alliance* (elected Board Member)  
Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
Principle Investigator, *NASA Ames Vertical Gun Range* (2012-2017)  
*National Space Grant Directors' Conference* (Washington DC; March 2013)  
*National Space Grant Alliance* meeting (Washington DC; March 2013)  
*National Space Grant Executive Committee* meeting (Washington DC; March 2013)  
*National Space Grant Directors' Conference* (Charleston, SC; October 2013)  
*National Space Grant Alliance* meeting (Charleston, SC; October 2013)  
*National Space Grant Executive Committee* meeting (Charleston, SC; October 2013)  
*Northeast Planetary Image Facilities* Directors' meeting (Cornell, Ithaca; November 2013)

## 2014

Reviewed ~9 papers and proposals  
*Executive Committee*, National Space Grant Consortium, elected Member  
*National Space Grant Alliance* (elected Board Member)  
Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
Principle Investigator, *NASA Ames Vertical Gun Range* (2012-2017)  
*National Space Grant Directors' Conference* (Washington DC; March 2014)  
*National Space Grant Alliance* meeting (Washington DC; March 2014)  
*National Space Grant Executive Committee* meeting (Washington DC; March 2014)  
*National Space Grant Directors' Conference* (Charleston, SC; October 2014)  
*National Space Grant Alliance* meeting (Charleston, SC; October 2014)  
*National Space Grant Executive Committee* meeting (Charleston, SC; October 2014)  
*Northeast Planetary Image Facilities* Directors' meeting (Washington, DC; November 2014)

## 2015

Reviewed ~10 papers and proposals  
*Executive Committee*, National Space Grant Consortium (elected Member)  
*National Space Grant Alliance* (elected Board Member)  
Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
Principle Investigator, *NASA Ames Vertical Gun Range* (2012-2017)

*National NASA Space Grant Directors' Conference* (Washington DC; March 2015)  
*National NASA Space Grant Alliance meeting* (Washington DC; March 2015)  
*National NASA Space Grant Executive Committee meeting* (Washington DC; March 2015)  
*National NASA Space Grant Directors' Conference* (Tucson, AZ; October 2015)  
*National NASA Space Grant Alliance meeting* (Tucson, AZ; October 2015)  
*National NASA Space Grant Executive Committee meeting* (Tucson, AZ; October 2015)

## 2016

Reviewed ~11 papers and proposals  
*Executive Committee*, National Space Grant Consortium (elected Member)  
*NASA National Space Grant Alliance* (elected Board Member)  
Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)  
Principle Investigator, *NASA Ames Vertical Gun Range* (2012-2017)  
*NASA National Space Grant Directors' Conference* (Washington DC; March 2016)  
*NASA National Space Grant Alliance meeting* (Washington DC; March 2016)  
*NASA National Space Grant Executive Committee meeting* (Washington DC; March 2016)  
*Regional NASA Space Grant Directors' Conference* (New York, NY; October 2016)

## 2017

*Executive Committee*, National Space Grant Consortium (elected Member)  
*NASA National Space Grant Alliance* (elected Board Member)  
Director, *Northeast Planetary Data Center* (1984-2021)  
Principle Investigator, *NASA Ames Vertical Gun Range* (2012-2022)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-Present)  
*NASA National Space Grant Directors' Conference* (Washington DC; March 2017)  
*NASA National Space Grant Alliance meeting* (Washington DC; March 2017)  
*NASA National Space Grant Executive Committee meeting* (Washington DC; March 2017)  
*Regional NASA Space Grant Directors' Conference* (New York, NY; October, 2017)

## 2018

*Executive Committee*, National Space Grant Consortium (elected Member)  
*NASA National Space Grant Alliance* (elected Board Member)  
Director, *Northeast Planetary Data Center* (1984-2021)  
Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)

*NASA National Space Grant Directors' Conference* (Washington DC; March 2018)

*NASA National Space Grant Alliance meeting* (Washington DC; March 2018)

*NASA National Space Grant Directors' Conference* (Stowe VT; September 2018)

*NASA EPSCoR Director's Meeting* (NASA Goddard, July 2018)

## **2019**

Director, *Northeast Planetary Data Center* (1984-2021)

Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)

*NASA National Space Grant Directors' Conference* (Washington DC; March 2019)

*NASA National Space Grant Alliance meeting* (Washington DC; March 2019)

*NASA EPSCoR Director's Meeting* (JPL, August 2019)

## **2020-2022 COVID**

Director, *Northeast Planetary Data Center* (1984-2021)

Director, *NASA/Rhode Island Space Grant Consortium* (1990-2022)

## **c. TO THE COMMUNITY (1972-2024)**

### **1970-1984**

Host for Planetary Data Center Open House and Lectures, LPI (1977-1984)

Director Planetary Data Center, Lunar and Planetary Institute (LPI) (1977-1984)

Presentations to community organizations, astronomy clubs, Junior Colleges, etc.

### **1984-2005**

Director, Northeast Planetary Data Center (1984-2021)

Director, NASA/Rhode Island University Space Grant Consortium (1990-2022)

Brown Learning Community Instructor: *Halley's Comet* (Fall 1985); *The History, Methods, and Frontiers of Cartography* (Spring 1986); created and taught, *Brown Academy of Junior Scientists*

Frequent Guest Speaker at local and national astronomy clubs

Member of National Stereoscopic Association and Photographic Historical Society of New England

Guest Lecturer, Skyscrapers Annual Convention (1992)

Guest Lecturer, Ladd Observatory Speakers Series (1984-present)

Workshop for Warwick Elementary Science Teachers (1989, 1990)

Keynote Speaker at *Astronomical League Convention*, 1991 (Springfield, MA)

Co-organizer "*Dinosaurs in Space: Walks and Talks on an Evolving Planet*" (in coordination with Roger Williams "Dynamation Exhibit," 1992)

Co-organizer "Science Posters Contest" for Warwick Elementary Schools (1992, 1993, 1994, 1995, 1996)

Keynote Speaker, Hartford Astronomy Day (May, 1993)

Dinner Speaker for Brown Learning Community "*Teachers Overnight: Evening Under the Stars*" (May, 1993)

Keynote Speaker, Northeast Region of the Astronomical League, Springfield, MA (June, 1993)

Co-organized "*Lost Worlds: From Jurassic Park to Mars*," a Workshop for RI Science Teachers (August, 1993)

Keynote Speaker for *Custer Institute's* (Long Island) *Astronomy Jamboree* (October, 1993)

Lecturer at *Roger Williams Park*, "*Chicken Little Was Right*" (February, 1994)

Participant: Providence Math-Science Coalition Project (1994)

Participant: *Zooscape* (Brown and Roger Williams Park series, Summer 1994)

Organizer: *Planetary Catastrophes Workshop* for RI Teachers (July, 1994)

Speaker at *Skyscrapers* Astronomy Club Meeting (September, 1994)

Organizer: *Planetary Data Center* Open House "Legacy of Apollo" (evening public lectures with viewing of Shoemaker-Levy 9 collision), 1994

Host for "Warwick Elementary Schools Award Ceremony: Space Poster Contest" (Fall, 1995)

Co-organizer and contributor "*Mapping Worlds*" (Joint NASA Space Grant and Institute for Secondary Education Seminar Series for Teachers, Spring 1995)

Co-organizer and contributor "*Fly Me to the Moon: Apollo 13 Workshop*" for Rhode Island K-12 Teachers (Brown University, Fall 1995)

Co-hosted poster and booth at the "New England Conference on Technology Transfer" (Providence, August 1995)

Speaker at the *Rhode Island Science Teachers Association* (RISTA) Convention, (1997)

Banquet Speaker at the *Skyscrapers Astro Assembly*, (1997)

Involvement with various educational groups and initiatives in Rhode Island and at Brown to bring NASA science and exploration into the classroom (Rhode Island College, NASA Resource Center, Roger Williams Park Museum, Aerospace States Association, RI Science Teachers Association, Lt. Governor's Office, IESE)

Mentored two high school students (under-represented minority student at Mt. Pleasant High School and student at Lincoln School), 1996-1999

Speaker at the Rhode Island Science Teachers Association (RISTA) Convention (1997,1998)

Guest Speaker at *RI Audubon Society*, 1998

Banquet Speaker at *StarCon* (National Amateur Astronomers Convention), 1998

Boy Scout Award Ceremony, Guest Speaker, East Greenwich (1997)

*Presentation Speaker*, Lt. Governor's Office (RI, 1998)

Speaker, *Jamestown Rotary Club* (RI, 1999)

Speaker, *RI Association for Retired Principals and Superintendents* (1999)

*Presentation Speaker*, "Comet Chasers" Day (Charleston, RI 1999)

Keynote, *New England Chemistry Teachers Association* (Roger Williams University, 2000)

*Boston Bay Group* Colloquium (MIT, 2000)

*Sigma Xi*; Banquet Talk (Brown University, 2000)

*Custer Institute Astronomy Jamboree* (Southold, Long Island, NY 2001)

Hosted special of IMAX on one-year anniversary of 911 (Space Grant), 2002

Keynote Speaker, *Science Teachers Association* (RISTA, RIC, 2002)

Banquet Speaker, *Astro-Assembly* (2002)

Keynote, RI Natural History (URI, 2002)

Guest Speaker, *2003 Astro-Assembly*  
Guest Speaker, *2003 StarConn* (Wesleyan U., Middletown CT)  
Invited Speaker, *International Photo-History Symposium* (George Eastman House, 2003)  
Keynote Speaker, “*The Conjunction*” (Connecticut River Valley Astronomical Convention, 2004 spring)  
Keynote Speaker, *SPARK* (2004 Brown University Summer Studies)  
Invited Award Presenter to Astronaut Woody Spring (2004 fall, *RI Aviation Hall of Fame*)  
Invited Speaker, *Photographic Historical Society of New England*, “The History of 19<sup>th</sup> Century Lens Makers” (2004 spring)

## **2005 – 2024:**

### **2005**

*Deep Impact* Teacher Workshop Lecturer (NASA Kennedy, January)  
*Deep Impact* Teacher Workshop, Lecturer and Organizer (Roger Williams Park Museum, January-July)  
*Maine Space Day* (Auburn, Maine, May)  
*Maine Astronomy Club* (Portsmouth, Maine, May)  
*Brown Commencement Forum* (May)  
Guest Presenter, *Chautauqua Workshop* (June, Flagstaff, AZ)  
Brown University Summer School (July, guest lecturer)  
Ladd Observatory Astronomy night (Public Speaker, September)  
*Rutgers Museum of Natural History* (November, New Brunswick, NJ)  
“Boldly Brown” Fund Raising Evening Speaker (October)  
*Rhode Island Hospital Forum* (December, with Karen Meech, U. Hawaii, December)  
Brown University *Alumnae Lecture* about Results from Deep Impact (November)

### **2006**

*Benjamin Dean Lecture*, Morrison Planetarium (San Francisco January, 2006)  
Brown University Summer School (Providence, RI; July 21, 2006, guest lecture about DI)  
Keynote Speaker (Providence, RI; July 29): Brown University Summer Studies for Middle School participants and parents.  
*Deep Impact* Teacher Workshop (with Karen Meech): Hawaii (February 25, 2006)  
Banquet Talk, *Houston Astronomical Society* (March 11, 2006):  
Guest Speaker for Brown’s *VIGOR Program* (linking undergraduate education in math with other disciplines, February 11, 2006):  
Invited *Carleton Alumnae Reunion* Talk (Carleton College, June 2006)  
Brown University Staff Day (Providence, RI; June 7, 2006)  
Roger Williams park Museum: Contributed materials and content to the exhibit comparing the Lewis and Clark expedition and planetary exploration (January, 2005-September, 2006)  
Roger Williams Park Museum: assisted in exhibit on *Extreme Living* (January, 2005-September, 2006)

### **2007**

Invited Public Talk: *Prairie Astronomy Club* (October, Lincoln, NE)  
Invited Keynote: 75<sup>th</sup> Annual *Astro-Assembly Meeting*, September 28  
(Seagrave Observatory)  
Invited Keynote: *The Conjunction* (Connecticut Valley Astronomy Society)  
Mars exhibit: Sponsored *Mars Express 3-D* exhibit at the *Roger Williams Park  
Natural History Museum*  
Mars Educator Workshop: Participated in workshop for teachers connected to the Mars 3D  
exhibit  
Hosted *NE Data Center Annual Meeting*: The international network of *Regional Planetary  
Image Facilities* met in the Northeast Planetary Data Center in November  
Hosted the *RI Space Grant Consortium Symposium*: Hosted the annual day-long symposium  
that highlighted activities (faculty research, undergraduate/graduate research, educational  
activities, classroom development, etc.).

## 2008

Chaired NE Data Center Annual Meeting: The international network of *Regional Planetary  
Image Facilities* met in Tucson (Dec. 2008)  
Hosted the *RI Space Grant Consortium Symposium*: Chaired the annual daylong symposium  
that highlighted activities (faculty research, undergraduate/graduate research,  
educational activities, classroom development, etc.) at *Roger Williams University*  
Contributed to: “*Mission Moon: Past, Present, Future*” at the Museum of Natural History,  
Roger Williams Park (April 9, 2008)  
Invited talk at *Southern Maine Astronomers*, “Chicken Little or Armageddon!” (June 2008)  
*Brown Family Weekend*: “Chicken Little or Armageddon: The Day the Sky Fell in Peru”  
(October, 2008)  
*Brown Alumni Weekend*: “The Moon: Dead or Alive” (September, 2008)  
*Brown Staff Development Day*: “Chicken Little or Armageddon” (June, 2008)  
*Brown Summer School*: Contributed to SPARK (July, 2008), due to illness of discussion  
leader  
*Brown Continuous Learning in Retirement*: April 9, 2008 talk in the Northeast Planetary  
Data Center  
Participated in:  
*Northeast Planetary Image Facilities Directors’ meeting* (Tucson, December, 2008)  
*Regional Space Grant Directors’ meeting* (September, CT)  
*National Space Grant Directors’ Conference* (Atlanta, October 2008)  
*National Space Grant Executive Committees meeting* (Atlanta, October 2008)

## 2009

Hosted the *RI Space Grant Consortium Symposium*: Chaired the annual daylong symposium  
that highlighted activities (faculty research, undergraduate/graduate research,  
educational activities, classroom development, etc.) at *Bryant University* (November,  
2009)  
Hosted *Northeast Planetary Data Center Open House* for students and faculty from U.  
Maine, *LCROSS Mission* (November, 2009)  
Presented *Shooting the Moon* at Museum of Natural History as part of Educator Short Course  
on Lunar Geology (July, 2009)

Invited banquet talk (*Deep Impact Encounter*) for the *Century Club*, Springfield, Mass (February)

## 2010

Hosted the *Regional Space Grant Directors'* meeting (September, 2010, Newport, RI);  
Keynote Speaker: The *Astronomy & Space Exploration Society (ASX)* before 800 students/faculty/public at the University of Toronto, along with noted leaders in space exploration from JPL, India, and Canada.

Invited talk: *Lunar Exploration Analysis Group (LEAG)* Meeting: "Shooting the Moon: A Review of the LCROSS Results" (Washington, DC).

Keynote Speaker: *25<sup>th</sup> Anniversary of the DLR Regional Planetary Image Facility* (Berlin, Oct., 2010). This invited talk was coupled to the opening of 3D Mars at DLR (Germany's equivalent to NASA's JPL).

*Educator Cooperative Institute*, Educator Science Institute, Dedham Mass (July, 2010)

*Kaneko Public Forum*, Omaha, Nebraska (June, 2010)

*Mid-States Regional Astronomical League Convention and Prairie Astronomy 50<sup>th</sup> Anniversary Celebration*, University of Nebraska, Lincoln, Nebraska (June, 2010).

Banquet Keynote Speaker, *Western Alliance of Planetariums Conference*, Omaha, Nebraska (August, 2010)

Evening Keynote Speaker, *Lunar Observing Workshop* at the *Stellafane Telescope Makers Convention*, Springfield, Vermont (August, 2010)

Organized the *Rhode Island Space Grant and EPSCoR Symposium* meeting (Bryant U.)

Hosted and participated in *Northeast Planetary Data Center Open House* (May and October, 2010)

## 2011

Two Invited talks for the "International Observe the Moon Night" October 8<sup>th</sup> (*McAuliffe-Shepard Discovery Center*, Concord, NH).

NASA's *Lunar Reconnaissance Orbiter (LRO) Lunar Workshop*, June (University of New Hampshire, Durham)

Invited Banquet Talk: *AstroAssembly* (North Scituate, RI)

Organized the *Rhode Island Space Grant and EPSCoR Symposium* meeting (April, RISD)

Hosted and participated in *Northeast Planetary Data Center Open House* (May and October, 2011)

## 2012

Public Talk: *SkyScrapers Astronomy Club*: "My Moon" (July, North Scituate, RI)

Public talk: *Worcester Gem Mineral Club*: "Making the Man in the Moon" (November, Shrewsbury, MA)

Public talk: *History of Space Photography* (*Photographic Historical Society* of New England)

Organized: *Rhode Island Space Grant and EPSCoR Symposium* meeting (April, URI)

Hosted the final team science meeting of NASA's *DIXI* and *Stardust-NEXT* (July, National Academy of Science, Cape Cod, MA)

Co-sponsored exhibit and opening at the Museum of Natural History (Providence): *Space Weather*



Co-sponsored exhibit and opening at the Museum of Natural History (Providence): *Saturn: Images from the Cassini-Huygens Mission*  
Developed and co-sponsored exhibit opening of *Trekking across Mars with Curiosity* (Museum of Natural History, Providence)  
Hosted and participated in *Northeast Planetary Data Center Open House: Commencement* (May, 2012) and Family Day (October, 2012)

## 2013

Public Talk, SkyScrapers Astronomy Club: “*History of Space Photography*” (North Scituate, RI)  
Co-sponsored exhibit opening of “*Dynamic Galaxies: Our Place in the Universe*” (Museum of Natural History, Providence)  
Hosted and participated in *Northeast Planetary Data Center Open House: Commencement* (May, 2013) and Family Day (October, 2013)  
Hosted: *Rhode Island Space Grant* and *EPSCoR Symposium* (April, Brown U.)

## 2014

Hosted and participated in *Northeast Planetary Data Center Open House: Commencement* (May, 2014) and Family Day (October, 2014)  
Hosted: *Rhode Island Space Grant* and *EPSCoR Symposium* (April, Wheaton College, MA)  
Public talk: “*Against the Odds: The Story of the Trumbull Interchangeable Panoramic Camera*” (George Eastman House, October)

## 2015

Developed and co-sponsored exhibit opening of “*Icy Worlds & the Discoveries of DAWN and New Horizons*” (Museum of Natural History, Providence)  
Hosted and participated in *Northeast Planetary Data Center Open House: Commencement* (May, 2015) and Family Day (October, 2015)  
Hosted: *Rhode Island Space Grant* and *EPSCoR Symposium* (April, Salve Regina, RI)  
Public talk: *From my Little Red Wagon to a Rendezvous with a Comet* (Carberry Lecture, Brown)  
Public talk: “*Against the Odds: The Story of the Trumbull Interchangeable Panoramic Camera*” (Photographic Historical Society of New England, Boston)  
Public talk: “*Making the Man in the Moon*” (San Juan, Argentina)

## 2016

Hosted and participated in *Northeast Planetary Data Center Open House: Commencement* (May, 2016) and Family Day (October, 2016)  
Hosted: *Rhode Island Space Grant* and *EPSCoR Symposium* (April, Museum of Natural History, RI)  
Public talk: “*From my Little Red Wagon to a Rendezvous with a Comet*” (Carberry Lecture, Brown)  
Public talk: “*A Career of Exploration: My Backyard and Beyond*” (Ladd Observatory 125<sup>th</sup> anniversary celebration)

## 2016

Hosted and participated in *Northeast Planetary Data Center* Open House: Commencement (May, 2016) and Family Day (October, 2016)

Hosted: Brown Summer Studies classes in *Northeast Planetary Data Center* (~80 students)

## 2017

Hosted and participated in *Northeast Planetary Data Center* Open House: Commencement (May, 2017) and Family Day (October, 2017)

Hosted: Brown Summer Studies classes in *Northeast Planetary Data Center* (~80 students)

## 2018

Hosted and participated in *Northeast Planetary Data Center* Open House: Commencement (May, 2018) and Family Day (October, 2018)

Public talk: “*History of the Boston Box*” (Photo History, Photo Future Conference, April, Rochester NY)

Public talk: “*History of the Boston Box*” (Photographic Historical Society of New England, Boston)

Public talk: “*A Career of Exploration: My Backyard and Beyond*” (invited talk to 2018 *Astro-Assembly*, Scituate, RI)

Public talk: “*Simon Wing and his Marvelous Multiplying Cameras*” (invited talk to *Wing Museum*, Sandwich, MA, May 2018)

Hosted: Brown Summer Studies classes in *Northeast Planetary Data Center* (~80 students)

Invited Talk: LPI 50<sup>th</sup> Anniversary Science Symposium (March 17., Houston)

Co-taught (with Seth Horowitz, PhD): 3D Printing Workshop (March 10, Brown).

## 2019

Invited Essay: *Personal Recollections of the Lunar and Planetary Science Conference* (50<sup>th</sup> Lunar and Planetary Science Conference, March)

Presented: Spring Symposium CCRI talk for the Center for Innovative Teaching, Learning, and Assessment (CITLA)

Hosted and participated in *Northeast Planetary Data Center* Open House: Commencement (May, 2019; 350 visitors) and Family Day (October, 2019; 275 visitors);

Hosted: *Rhode Island Space Grant* and *EPSCoR Symposium* (April, *Roger Williams University*, Bristol, RI)

Presented: *Rhode Island School of Design* Illustrations Course (2-hour discussion sessions, over 6 weeks)

Hosted: *Northeast Regional Space Grant Directors Meeting* (Sept. 18-20, Newport)

Presented: *Rhode Island School of Design* Glass Course (2-hour discussion session)

Presented: *Rhode Island School of Design* Foundations Course (2-hour discussion session)

Presented: *Rhode Island School of Design* Department of Digital, Media/Experimental Class (2-hour discussion session)

Presented: *Brown Summer Studies* classes (3) in *Northeast Planetary Data Center* (~80 students); 2 hour sessions

*Apollo 11 Celebrations*: Organized (with *WaterFire Providence*) and contributed funding for several Apollo 11 Anniversary activities in Rhode Island through Space Grant from July 8 through 28.

- *Silvery Moon*: Contributed historical items and objects to installation in *Northeast Planetary Data Center* for Apollo 11 Celebration
- *Museum of the Moon*: Brought art installation to RI through Space Grant and installed in *WaterFire Arts Center* (July 8 – 28); featured 23 foot balloon with NASA LROC images. 5000 attendees.
- Hosted Invited and Grand Opening of the *Museum of the Moon*: Invited Director of Astrovisualization (American Museum of Natural History, NYC). 900 attendees.
- *Museum of Natural History Exhibit: Many Inspired Steps -- Salute to Apollo 11 and Lunar Exploration* (selected images, prepared text). 8,000 and counting attendees.
- *{En}Visioning*: Contributed images and objects, prepared text) in ISB Gallery (RISD). 3000 attendees
- *Space Chats*: Organized and hosted a series of 11 talks highlighting the legacy of Apollo through current and future NASA missions and provocative discussions; presented at the *WaterFire Arts Center* (July 10 – July 22)
- *Moon Tours*: 12 Informal walks and talks under the 23-foot *Museum of the Moon*.
- *Apollo 11 Movie*: Supported RWMP Museum of Natural History to present evening movie in Roger Williams Park. 200 attended
- *WaterFire*: Worked with *WaterFire Providence* to celebrate the first lunar landing with a full lighting of *Waterfire* on July 20, 2019; co-sponsored Space Grant booths highlighting NASA activities in RI; invited/sponsored two astronauts giving public talks; purchased 7-foot Moon balloons to highlight *WaterFire*. 80,000 to 90,000 attendees.

**2020-2021: COVID-19**

**2022**

Invited talk: *Lessons from Kinetic Probes – Deep Impact, LCROSS, and DART* (Lunar and Planetary Science Conference 54)

**2023**

Invited talk: *History of the Boston Box: Daguerreotype and Wet Plate Cameras from New England* (Daguerreian Society, September, Boston)

#### **d. OTHER EDUCATIONAL AND ENGAGEMENT ACTIVITIES (1974-2024)**

**1974-1984:**

Invited contributor to workshop for high-school teachers, U. Texas (1971)

High-school mentor, NASA Ames Research Center (1974)

Co-Organizer, *A Short Course in Lunar Geology* (1974, NASA-Ames, California)

Organizer, *Planetary Geology Workshop for Fairfax County Educators* (Skyline Lodge, VA)

Co-Founder Lunar Science (Lunar Planetary) Institute Summer Intern Program (1977)

Co-Lead LPI Intern Program (1977-1984)  
Instructor, *Lunar Geology Short Course* (1976, Lunar and Planetary Institute, Houston)  
Invited Instructor, *Planetary Geology Short Course* (1978, Arizona State University)

## 19984-2024:

Invited Instructor, *Planetary Geology Short Course* (1985, Geological Society of America)  
BBC TV Science Series, *Shoot the Moon*  
Featured in Disney TV Production, *Scheme of Things*  
Featured in Life Magazine, *Masters of the Universe*  
Featured in Japanese Broadcasting Corporation TV Series (NHK), *Evolution of the Earth*  
Featured in Public Broadcasting System TV Series, *Planet Earth*  
Featured Interview in Japanese Popular science magazine *Newton*  
Provided 3-D space images for Entry Exhibit (Disneyland, Japan)  
*Planetary Geology Speakers' Bureau* Participant (1988-1990)  
Featured Video Speaker in American Museum of Natural History (NYC) theater exhibit on  
Meteorites (1990-2000)  
Featured in Public Broadcasting System TV Series, *Miracle Planet*  
Featured in Japanese (NHK)/WQED TV production, *Space Age*  
Frequent Instructor, Annual Workshops on Planetary Exploration, New England Educators  
Advisor for *Newton's Apple* (Aired in October, 1993)  
Advisor for BBC *Horizons* TV Series "*Doomsday Asteroid*" (aired in Britain, 1994; in  
United States, 1995)  
Advisor for NHK TV Special *Planet of Life* (aired in Japan 1994, in United States, 1995)  
Featured in NHK Television Program on "*Chicxulub and the Mayans*" (aired in 1995, Japan)  
NPR radio interview (Space Grant) about "*Life on Mars*" (August, 1996)  
NPR "Science Friday" radio interview concerning new theory about Chicxulub impact  
(January, 1997)  
NPR "Science Friday" radio (Space Grant) about "Life on Mars" (August, 1996)  
Featured in Discovery 2000 Television Series (Spring, 1998)  
Featured in Brazilian Science TV Series (aired Spring, 1997)  
Live interviews (NPR, BBC) dealing with new impact in Argentina (1998, 1999)  
Featured in Discovery 2000 Television Series (Spring, 1998)  
Featured in new BBC Horizon TV Series ("*Crater of Death*"), the Chicxulub impact (1998)  
Featured in WGBH "*Origins*" A Science Odyssey TV Series (aired in Spring, 1998)  
Featured in NHK-TV Program about the *History of Apollo* (1998, 1999)  
Featured in WGBH/WQED TV program "*96 Worlds and Counting*," (aired in 2001),  
Featured in BBC TV program, "*Projectiles*", involving impact studies (aired in 2001/02)  
Featured in Discovery Channel production (aired in 2001/02), "*Fireballs in Space*" about  
Argentina and laboratory impact studies  
Guest Speaker for Brown's VIGOR Program (linking undergraduate education in math with  
other disciplines, 2002)  
Featured in NHK TV Program (Living Planet, aired in 2004)  
Facilitated 2003 Summer Studies Planetary Geology Courses (through Space Grant)  
Facilitated 2004 Summer Studies Planetary Geology Courses (through Space Grant) for high  
school juniors/seniors.

Facilitated new 2004 Summer Studies Planetary Geology Courses (through Space Grant) for middle school (SPARK)  
Participated in new NHK TV Production of “*Miracle Planet*” (aired 2005)  
Participated in new Discovery TV Program about Deep Impact (aired in July 2005)

## 2005

Pre-encounter press conference (June): Brown University  
Pre-encounter press conference (June): NASA Ames Research Center (June)  
Pre-encounter press conference (June): NASA JPL  
Post-encounter Press conference, July 4: NASA JPL  
Media Interviews: NPR Radio (June), local television stations (ABC, NBC, CBS), Associated Press, etc.  
Research featured on: Discovery Channel (“*Comet Collision*”), NHK Television program, Australian Broadcasting (ABC), British Broadcasting Corporation (BBC)  
Hosted: Special showing of IMAX, “Magnificent Desolation” (Space Grant)

## 2006

Featured on  
*NPR Radio* (November)  
Local television programs  
*British Broadcasting Corporation (BBC)* radio (November),  
*Astronomy Magazine*  
*Popular Science*  
*Science*  
*Scientific American*,  
*Geotimes*  
Research featured on:  
*KQED* program about the LCROSS mission (aired 2007)  
*National Geographic* programs (2007);  
*British Broadcasting Corporation (BBC)*, aired 2007)

## 2007

Participation in Media Productions  
National Geographic: *Naked Science, Peru impact, Comets and Asteroids*  
NPR radio interview (Ira Flato, *Science Friday*):  
History Channel: *The Universe*  
BBC: *Returning to the Moon* (LCROSS mission)

## 2008

Media interviews (Carancas-LPSC interviews)  
*BBC World News* (radio)  
*Reuters*  
*Space.com*  
*Astronomy*  
*Sky and Telescope*  
*Science*

*Earthfiles* (radio)

*Scientific American*

Participation in Media Productions

*Canadian Discovery*: December

*NOVA-NOW*: December

*National Geographic*: July

*National Geographic, Earth Shocks, Series 2*, June

*National Geographic, Naked Science: Planet Science (Cracking the Earth's Crust)* March

*Canadian Discovery*: March

*NASA Webcast (LCROSS)*: May

*Discovery Channel*: May

*National Geographic/Discovery Canada "Naked Science 5"* (about Carancas impact)

*British Broadcasting Corporation (Sky at Night): Last Man on the Moon and Return to the Moon*

## **2009**

*Featured in various television productions: History Channel (Known Universe); National Geographic; History Channel Production Canadian Discovery Channel; BBC*

*Media interviews: AP, Providence Journal, National Geographic, Popular Mechanics, NPR, PBS, Sky and Telescope, Science, etc.*

## **2010**

*Featured in various television productions: History Channel (Known Universe); National Geographic; History Channel Production Canadian Discovery Channel; BBC*

*Media interviews: AP, Providence Journal, National Geographic, Popular Mechanics, NPR, PBS, Sky and Telescope, Science, etc.*

*NASA Press Conference (NASA Headquarters): EPOXI Encounter with Hartley-2 post encounter (JPL); Science results announcement (NASA Headquarters).*

## **2011**

*Featured in new television productions: History Channel (Known Universe II); National Geographic; History Channel Production How the Universe Works-2 (Comets); How the Universe Works-2 (Asteroids)*

*Media interviews: AP, Time Magazine, Science Christian Monitor, Scientific American, Sky and Telescope, New Scientist, Los Angeles Times, Nature News, NY Times, Science*

*NASA Press Conference: Stardust-NEt Encounters (NASA Headquarters)*

## **2012**

*Featured in new television productions: History Channel (Known Universe II, Alien Worlds)*

## **2013**

*Participated in new television productions: NOVA, Science Channel, Discovery, History Channel (airing in 2013 and 2014).*

## 2014

Featured in 7 new television productions: including *Wired Magazine*, *NOVA*, *Fox*, and NPR's *Radio Lab*.

## 2015

Featured in new television productions: *Weather Channel* (about organic survival from impacts); *French TV* (about impact effects); *NHK-TV* (about lunar cratering); *Strip the Cosmos*, *Discovery Channel* (about the effect of impact angle on extinctions); *Daily Planet*, *Canadian TV* (about the nearside/farside dichotomy on the Moon); and *Discovery Program* (about lunar swirls).

Featured in numerous media releases about lunar swirls, meteorite delivery on Ceres and Vesta, asteroid threats.

## 2016

Featured in new television production: NASA's Unexplained Files, *Science Channel* (NASA's Unexplained Files)

Featured in numerous media releases about the size of the asteroid forming the Imbrium basin on the Moon, from a published paper in *Nature* (*World Service*, *BBC*; *Scientific American*; etc.)

## 2017

Featured in new television production: *BBC Horizon Series* (*Mars a Traveler's Guide*); *Discovery Science Channel* (*Missing*)

Featured on *Science Friday*: Featured story about discovery of impact glasses in Argentina. Podcast submitted for possible award. <<http://apps.sciencefriday.com/thelongshot/>>

## 2018

Featured in new television production for the *Science Channel* (*Space's Deepest Secrets*) (about the nearside farside lunar dichotomy caused by the South-Pole Aitken Basin), aired October and December 2018)

## 2019

Featured in television series about the Moon (PBS NOVA) aired in 2019.

Participated in new television production for the *Science Channel* (NASA's *Unexplained Files*) about the Apollo 11 mission.

Participated in numerous local press events (TV, radio, printed press) related to Apollo 50<sup>th</sup> Anniversary Celebration. Organized many of the events, including "Museum of the Moon"

## 2020-2021. COVID

## 2021

Participated in new television: *Secrets of the Universe*

## 2022

Invited talk (Nebraska Space Grant, Omaha, Sept. 25): *Target Earth: DART Mission Encounter*

Invited talk (Prairie Astronomy Club, Lincoln, NE, Sept. 26): *Target Earth: DART Mission Encounter*

## 2023

Participated in new television: *The Answer to Almost Everything* (Show 42: Meteorites)

## 8. HONORS AND AWARDS

2018 *Distinguished Alumni* Lincoln Southeast High School

2013 *Fellow*, Geological Society of America, Denver, CO

2012 *G. K. Gilbert Award* (Geological Society of America), Charlotte, NC

2010 *HVIS Distinguished Scientist Award* (International Hypervelocity Impact Society), Freiburg, Germany

2008 *Award of Excellence, Ten Best Oral Presentation Award*, American Association of Petroleum Geologists (AAPG) National Meeting, San Antonio

2006 *Distinguished Alumnae Achievement Award*, Carleton College, Northfield, MN

*Asteroid 6952* named “*PeteSchultz*”

2004 *Barringer Medal* (Meteoritical Society Award for achievements in impact research)  
*Certificate of Appreciation*, 2000 (RI House of Representatives)

1992 *Best Paper Award*, *Hypervelocity Impact Society* Conference (Crawford/Schultz)

2000 *Best Paper Award*, *Hypervelocity Impact Society* Conference (Dahl/Schultz)

1992 *NASA Group Achievement Award* (Magellan Project),

2011 *NASA Group Achievement Award* (DIXI Science Team)

1990 *Medal of Achievement*, National Academy of Sciences of Argentina, Cordoba  
Sigma Xi

1973-1975 *NRC Postdoctoral Research Award*

1968-1971 *NASA Traineeship*

1972 *Phi Kappa Phi*

### Graduate Student Presentation Awards:

#### **DWORNIK AWARD:**

1995-oral (Olivier Barnouin-Jha)

1999-oral (Carolyn van der Bogert)

2000-poster (Carolyn van der Bogert\*)

2000-oral (Jennifer Anderson)

2001-poster (Jennifer Anderson\*)

2002-oral (Kelly Wrobel\*)

2003-oral (Brad Thomson\*)

2009-oral (Brendan Hermalyn\*)

2017-oral (R. Terik Daly\*)



***AGU OUTSTANDING STUDENT PAPER AWARD:***

**2010** - poster (Angela Stickle\*)

\*Top Award

**Past Proposal Awards (Since 1984):**

- NASA-NAGW-705      *Planetary Impact Processes*  
(10/1/84-9/30/96)  
PI - Schultz
- NASA-NASW-855      *Northeast Planetary Data Center*  
(11/1/84-10/31/96)  
PI – Schultz
- NASA-NGT-50325      *The Characteristics of Impact-Generated Plasma*  
(9/1/89-8/31/91)  
PI - Schultz (D. Crawford NASA Fellowship)
- NASA-NGT-40034      *Brown University Space Grant*  
(3/1/91-2/28/97)  
PI - Schultz
- NASA-JPL-958946      *Atmospheric Effects on the Cratering Process*  
(12/1/90-10/5/92)  
PI - Schultz, Magellan Guest Investigator
- NSF-EAR-9121347      *Terrestrial Low-Angle Impacts*  
(8/1/91-8/1/93)  
PI - Schultz
- NASA-NGT-51058      *Modeling the Atmospheric Response to an  
Advancing Continuous Ejecta Curtain: Implications for Planets  
with Atmospheres*  
(7/1/93 - 6/30/96)  
PI - Schultz (O. Barnouin NASA Fellowship)
- NASA-NAGW-3431      *Geologic Signatures of Atmospheric Effects on  
Impact Cratering on Venus*  
(3/15/93 - 3/14/95)  
PI - Schultz
- NSF-EAR-9219777      *Major Equipment Request for a Subsurface  
Interface Radar (SIR) System*  
(7/1/93-6/31/94)

	Co-PI - Schultz
JPL Director's Research and Development Fund Proposal	<i>Impact Flash Spectroscopy</i> (5/15/95-9/30/97) Co-PI - Schultz
Fina Oil Company	<i>The Sierra Madera impact and implications for hydrocarbon exploration strategies</i> (1/1/97-12/31/98)
NASA-NGT5-50166	<i>Effects of High Strain-rate Deformation on Impact Melt Generation</i> (7/1/99 - 6/30/02) PI Schultz (C. van der Bogert NASA Fellowship)
NASA-NAG5-7082	<i>An Ultra-spectrometer (MEMUS) for Planetary Surface Analysis</i> (4/1/98-3/31/02): Planetary Instrument and Development Program PI – Schultz
NASA-NAG5-3877 (previously, NAGW-705)	<i>Planetary Impact Processes</i> (10/1/96-2004) PI - Schultz
NASA-NGT5-90014	<i>Rhode Island Space Grant Consortium</i> (previously, NGT-40034) (3/1/91 - 2010) PI – Schultz, grant management
NSF-EAR-0001047	<i>Late Cenozoic Record of Impact Glasses in the Argentine Pampas</i> (7/1/00 - 6/30/04) PI - Schultz
NASA-Z667703	<i>Deep Impact Co-Investigator Participation</i> (1/1/00 - 4/1/06) PI – Schultz
NASA-NAG5-12327	<i>Survival and Synthesis of Organics During Hypervelocity Impacts</i> (7/1/02-6/30/06) PI-Schultz
NASA-NNG04G197G	<i>Northeast Planetary Data Center</i> (1/05/04-1/14/07) PI – Schultz

NASA-NNG04G011H	<i>Thermal Evolution of Impacts from Laboratory Experiments</i> (7/1/04 - 6/30/07) PI Schultz (Carolyn Ernst, NASA GSRP Fellowship)
USRA-03482-07	<i>Cooperative Study on the Impact Flash</i> 9/1/06 -8/31/07
SANDIA/LIVERMORE No. BS8S712	<i>Sandia/Lawrence-Livermore National Laboratories</i> (1/15/10-9/30/10) PI - Schultz
LCROSS-NNA07CN76A	<i>NASA-Ames LCROSS Mission</i> (4/1/07-3/31/10) PI – Schultz
NASA- NNX07AG18G	<i>NASA Discovery Data Analysis Program (\$90K/yr)</i> (2/15/07-2/14/12) PI – Schultz (0.25: 3 summer months)
NASA-EPOXI/DIXI	<i>EPOXI/DIXI (NASA-Discovery Mission) (\$105K)</i> Co-Investigator Participation (10/1/00 – 12/31/12) PI – Schultz (0.35: 3 summer months)
NASA-Stardust/NExT	<i>Stardust/NExT (NASA-Discovery Mission) (\$75K)</i> Co-Investigator Participation (10/1/00 - 9/30/12) PI – Schultz (0.20-AY: 3 summer months)
NASA-NNG05G137G	<i>Planetary Impact Processes (\$166K/yr)</i> (4/15/08-4/14/12) PI – Schultz (0.40: 3 summer months)
NASA-NNX07AP52G	<i>Northeast Planetary Data Center (\$53K/yr)</i> (7/27/07-7/26/12) PI – Schultz (0.10-AY, 0.10: 3 summer months)
NASA-NNX10AI95H S05	<i>Rhode Island Space Grant Consortium</i> (4/23/10-4/22/15) PI – Schultz, grant management

(0.15-AY NASA; 0.15-AY Brown; 0.10: 3 summer)

NASA-NNXIOANO3A *NASA-RI EPSCoR Research Award* (\$725K)  
(7/02/10-7/01/13)  
PI – Schultz, grant management  
Science PI – B. Lucht (URI)  
(0.05AY; 0.0 summer months)

NASA-NNX11AR21A *NASA-EPSCOR RID* (Research Infrastructure and  
Development Award), (\$325K total with augmentation)  
(9/1/11-8/31/13)  
PI – Schultz, grant management  
(0.05 AY Brown; 0.0 summer months)

NASA-NNX12AL7 *NASA Fellowship Award* (Megan Bruck Syal)  
09 /07 /2013 through 8/ 31/ 2014  
PI – Schultz  
(0.0 AY Brown; 0.0 summer months)

NASA-NNX13AB75G *Planetary Impact Processes*  
Planetary Geology and Geophysics  
(\$112K/yr)  
(10/24/12-10/23/15)  
PI – Schultz  
(0.10 CY)

NASA-NNX13AG43G *Impact-Blast Winds on Mars*  
Mars Fundamental Research Program  
(\$82.4K/yr)  
2/07/13 - 2/06/16  
PI – Schultz  
(0.08 CY)

NASA-NNX12AP67G *NASA Ames Vertical Gun Range Facility*  
Planetary Geology and Geophysics  
10/1/12-9/30/17  
PI – Schultz  
(0.05 CY)

NASA-NNX13AB24A *NASA-EPSCOR RID*  
Research Infrastructure and Development Award  
*NASA-EPSCOR*  
(10/18/12-10/17/15)  
PI – Schultz, grant management  
(0.10 CY)

NASA- NNX13AN07A      *Web-Scale Assisted Robot Tele-operation*  
*NASA EPSCoR Competitive Research Award*  
(9/1/13-8/31/16)  
PI – Schultz, grant management (0.10 CY)  
Science PI – Iris Bahar (Brown)

NASA-NNX16AR01A      *Testing New Methods to Assess the Environmental and*  
*Floral/Faunal responses to Impacts on Earth*  
*NASA EPSCoR Competitive Research Award*  
(9/1/16 – 8/31/21)  
PI – Schultz, grant management (0.10 CY)  
Science-PI – J. King (GSO/URI)

NASA-NNX16AR01A      *Development of a Space-Deployable Dual-Mode LiDAR for*  
*Planetary Seismology*  
*NASA EPSCoR Competitive Research Award*  
(6/01/19 – 5/31/22)  
PI – Schultz, grant management (0.02 CY)  
Science-PI – T. Wei (URI)

NASA-NNX12AQ03G      *Northeast Planetary Data Center*  
*Planetary Geology and Geophysics*  
(8/22/12-1/31/21 extension)  
PI – Schultz  
(0.0 CY)

NASA-NNX15AI06H      *Rhode Island Space Grant Consortium*  
(4/10/19 - 4/09/24)  
PI – Schultz, grant management (0.15 CY)

NASA-NNX13AB24A      *NASA-EPSCOR RID*  
*Research Infrastructure and Development Award*  
*NASA-EPSCOR*  
(5/6/19-5/5/22)  
PI – Schultz, grant management (0.10 CY)

**2019-2021:** Contributed content and consulted with 2 different *NASA Small Business Innovation Research* (SBIR) grants

**9. TEACHING** (NB: Prior to 2006, Research grants typically covered 33-50% of teaching load during the Academic Year (AY); from 2005 to 2008, grants covered 20 to 25% AY teaching). Starting in 2008, AY grant obligations increased to 40%. Departmental full-teaching load is 2.5/year to 3/year for faculty without a research program and 2.0 courses/year for faculty actively involved in research. Retired from teaching in 2014.

**1996-1997:**

*Fall*

4 Graduate Students  
Guest Lecturer (GE-22)

*Spring*

4 Graduate Students  
Planetary Geology (GE-81; 100%;  
26 students)  
Also contributed to Seminar in Biology  
on "Evolution of Life"

**1997-1998:**

*Fall*

(on sabbatical)  
4 Graduate Students  
Guest lecturer in GE-22, GE-31

*Spring*

(on sabbatical)  
4 Graduate Students  
Guest lecturer, Archeology (AN-252)  
Also participated in GSO Lecture Series on  
"Life in Extreme Environments"

**1998-1999:**

*Fall*

3 Graduate Students  
Guest lecturer in GE-22, GE-31  
Planetary Cratering (GE-288; 100%  
9 students)

*Spring*

Planetary Geology (G-81; 100%;  
32 students)  
3 Graduate Students

**1999-2000:**

*Fall*

Terrestrial Impact Record (GE-281;  
(100%; 6 students)  
Guest lecturer, GE-22  
3 Graduate Students  
Physics Senior Thesis Advisor (Erin Weeks)

*Spring*

Planetary Geology (GE-81; 100%  
25 students)  
3 Graduate Students  
Undergraduate Thesis Advisor

**2000-2001:**

*Fall*

Planetary Impact Cratering (GE-288; 100%)  
6 students  
3 Graduate Students  
Guest lecturer GE-22  
Physics Senior Thesis Advisor (Carolyn Ernst)  
Geology Senior Thesis Advisor (D. Paduano)

*Spring*

Planetary Geology (GE-81; 100%  
20 students)  
3 Graduate Students  
Undergraduate Thesis Advisor (2)

**2001-2002:**

*Fall*

6 Graduate Students  
Guest Lecturer GE-22  
Geology Undergraduate Thesis Advisor (2)

*Spring*

Planetary Geology (GE-81; 100%)  
6 Graduate Students  
Undergraduate Thesis Advisor (2)  
Guest Lecturer, Advisor, and Critical

Reviewer for Industrial Design Course  
(Rhode Island School of Design)

**2002-2003:**

*Fall-2002*

7 Graduate students  
Guest Lecturer GE 22  
Planetary Impact Cratering  
(GE 288; 100%)

*Spring-2003*

Planetary Geology (GE-81; 100%)  
7 Graduate students  
Undergraduate Independent Study Advisor  
Guest Lecturer, Advisor, and Critical  
Reviewer for Industrial Design  
Course (Rhode Island School of Design)  
Design)  
Guest Lecturer (University of Rhode Island)  
Guest Lecturer (WHOI)  
Guest Lecturer (Northwestern)

**2003-2004:**

*Fall*

8 graduate students

*Spring-2004*

Planetary Geology (GE 81, 100%)  
8 graduate students  
Undergraduate Senior Thesis (N. Reul)  
Guest Advisor and Critical  
Reviewer for Industrial Design  
Course (Rhode Island School of  
Design)

**2004-2005: *Sabbatical Fall and Spring***

*Fall-2004 (sabbatical)*

6 graduate students

*Spring-2005 (sabbatical)*

6 graduate students  
Senior thesis advisor: Tyler Wilson  
(Chemistry)  
Guest lecture Bio-19

**2005-2006**

***On leave, fall 2005 (NASA Deep Impact Encounter)***

Senior Honors Thesis advisor: Lauren Brodsky  
Senior Thesis advisor: Julie Kosominsky  
Senior Honors Thesis Advisor (external): Evan Ackerman (Bates College)  
Faculty Advisor: Engineering 176 (Capstone Senior Design Project) and  
Independent Study

***Spring-2006***

Planetary Geology (GE 81, 100%)  
6 graduate students

Guest Advisor and Critical  
Reviewer for Industrial Design  
Course (Rhode Island School of Design)

**2006-2007:**

***Fall-2006***

Planetary Cratering (8 students)  
GE 0288 (100%)

6 graduate students  
Freshman Advisor

***Spring-2007***

“Planetary Geology” (19 students)  
GE 0810 (100%)

Guest Speaker, Advisor and  
Critical Reviewer for  
Industrial Course (*Rhode Island School of  
Design*)  
External Faculty Advisor:  
*Engineering 176* (Capstone  
Senior Design Project)  
Senior Thesis Advisor: Daniel Finn-  
Foley (*Physics*)

**2007-2008:**

***Fall-2007***

Freshman Seminar (18 students)  
*Chicken Little: Past and Future*  
*Cosmic Threats*, GE 0160 (100%)

Freshman Advisor  
Sophomore Advisor  
7 graduate students

***Spring-2008***

“Planetary Geology” (10 students)  
GE 0810 (100%)

**2008-2009:** 40% obligation through grants (but taught 100% 2-course load)

***Fall-2008***

Planetary Cratering (10 students)  
GE 0288 (100%)

Freshman Advisor  
Sophomore Advisor  
5 graduate students

***Spring-2009***

“Planetary Geology” (9 students)  
GE 0810 (100%)

**2009-2010:** 40% obligation through grants and formal university commitments to grants (but  
taught 100% 2-course load)



***Fall-2009***

Freshman Seminar (23 students)  
*Chicken Little: Past and Future*  
*Cosmic Threats*, GE 0160 (100%)

Freshman Advisor  
Sophomore Advisor  
5 graduate students

***Spring-2010***

“Planetary Geology” (9 students)  
GE 0810 (100%)

**2010-2011:** Grants (and formal university commitments of my time to grants) covered 40% AY time. Due to two NASA mission encounters during the academic year, the Departmental Chair relieved teaching requirement for the Spring Semester, 2011.

***Fall-2010***

*Planetary Cratering* (7 students)  
GE 0288 (100%)

Sophomore Advisor  
6 graduate students

***Spring-2011***

Geo Honors Thesis Advisor (Dara Goldberg)

**2011-2012:** Grants (and formal university commitments of my time to grants) amount to 50% AY time (but taught 2-course load).

***Fall-2011***

Freshman Seminar (18 students)  
*Chicken Little: Past and Future*  
*Cosmic Threats*, GE 0160 (100%)

Freshman Advisor  
Sophomore Advisor  
6 graduate students

***Spring-2012***

“Planetary Geology”

**2012:** Grants (and formal university commitments of my time to grants) amount to 50% AY time. Began Sabbatical in fall 2012

***Fall-2012***

SABBATICAL

5 graduate students

**2013:** Sabbatical spring of 2013. Returned to teaching in the fall.

***Fall-2013***

*Planetary Cratering* (12 students)  
GE 2880 (100%)

**2014:** *Formally transitioned to Professor Research January 1, 2014*

**GRADUATE THESES SUPERVISED:**

- M.S.** Patricia Grizzaffi (1987)  
Robert Wichman (1989)  
David Crawford (1989)  
Charles Halfen (1991)  
Olivier Barnouin-Jha (1992); also received MS Engineering (2011).  
Jason Dahl (1999)  
Carolyn van der Bogert (1999)  
Jennifer Anderson (2001)  
Carolyn Ernst (2003)  
Kelly Wrobel (2003)  
Clara Eberhardy (2004)  
Brendan Hermalyn (2009); also received MS Engineering (2011).  
Angela Stickle (2009); also received MS Engineering (2011).  
Megan Bruck (2011)  
Stephanie Quintana (2013)  
R. Terik Daly (2014)
- Ph.D.** John Grant (1990): "Erosional Evolution of Impact Craters on the Earth and Mars" (*Center for Earth and Planetary Science, Smithsonian Air & Space Museum*)  
David Crawford (1992): "The Production and Evolution of Plasma and Associated Magnetic Fields During Hypervelocity Impacts: Implications for Planetary Paleomagnetism" (Consultant, *Crawford Technical Services*; retired, *Sandia National Laboratories*)  
Robert Wichman (1993): "Post-impact Modification of Craters and Multiring Basins on the Earth and Moon by Volcanism and Crustal Failure"  
Olivier Barnouin (1998): "Modeling atmospheric entrainment and transport of Impact ejecta." (*Applied Physics Laboratory, Johns Hopkins University*)  
Seiji Sugita (1998): "Generation and Evolution of impact-generated vapor clouds: Spectroscopic observations and hydrodynamic calculations" (*University of Tokyo*)  
Jennifer L. B. Anderson (2004): "Experimental studies of ejecta dynamics during vertical and oblique impacts" (*Winona State University, MN*)  
Carolyn van der Bogert (2004): "High strain-rate Deformation as an Impact Process: Ordinary Chondrite and Carbonate-silicate Frictional Melting Experiments and Their Comparison with Naturally Deformed materials" (*University of Münster*)

- Bradley Thomson (2006): “Recognizing Impact Glass on Mars using Surface Texture, Mechanical Properties, and Mid-Infrared Spectroscopic Methods.” (*University of Tennessee, Knoxville*)
- Kelly Wrobel (defended July, 2007): “Computational modeling of impact-generated vapor and melt: Implications for remnant impact products on Mars and Earth” (*Woodside Energy*)
- Carolyn Ernst (defended, 2008): “Photometric, thermal, and spatial resolution of the impact flash.” (*Applied Physics Laboratory, Johns Hopkins University*)
- Brendan Hermalyn (2011): “Ejecta Evolution and Dynamics from Hypervelocity Impacts: Time-Resolved Experimental Studies and Applications to Planetary Cratering.” (Founder, CEO *Thalo Labs*)
- Angela Stickle (2012): “Epic Failure: A Study of Subsurface Damage Following Oblique Hypervelocity Impacts” (*Applied Physics Laboratory, Johns Hopkins University*)
- Megan Bruck Syal (2014): “Impact Vaporization: Experimental and Numerical Insights” (*Lawrence Livermore National Laboratory*)
- Jason Dahl (2016): “Shock Asymmetries from Oblique Hypervelocity Impacts” (*US Coast Guard Academy*)
- Stephanie Quintana (2017): “The impact Winds of Mars” (*Sandia National Laboratories*)
- R. Terik Daly (2017): “Preserving Projectiles During Impacts on Asteroids and Planets” (*Applied Physics Laboratory, Johns Hopkins University*)

*External PhD. Committee Member, Robert Herrick, 1992 (SMU, Dallas); G. R. Osinski, 2004 (University of New Brunswick, Fredericton, NB)*

*External PhD. Committee Member, James Hogan, 2013 (University of New Brunswick, Fredericton, NB)*

*Internal PhD. Dissertation Defense Committee: S. Murchie, J. Sunshine, M. Staid, L. Lee, C. Cooper, Noah Petro, Noah Hammond, Kevin Cannon*

## **ALL PAPERS, BOOKS, ABSTRACTS (P. H. SCHULTZ)**

### **Books** (authored and/or edited)

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