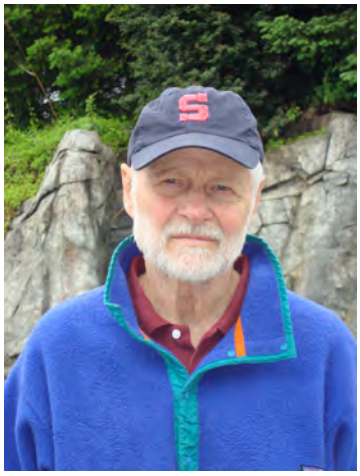
# Curriculum Vitae – Barry Voight

**Feb 2019**



## CONTACT DETAILS

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Pennsylvania State University
University Park, PA 16802
Email: voight@ems.psu.edu
Tel: 814 238 4431 (H)

## EDUCATIONAL HISTORY

| | | |
|---|---|---|
| Columbia University | Ph.D. | 1965 |
| University of Notre Dame | M.S.C.E. | 1961 |
| University of Notre Dame | B.S.C.E. | 1960 |
| University of Notre Dame | B.S. | 1959 |

## UNIVERSITY EMPLOYMENT

| | |
|---|---|
| 2005-present | Emeritus Professor of Geology/Geol Engineering, Penn State University |
| 1978-2005 | Professor of Geol/Geol Engineering, Penn State University |
| 1968-1982 | Prof/Assoc Prof Mineral Engineering, Penn State University |
| 1981 | Visiting Professor, University of California, Santa Barbara |
| 1973-1978 | Assoc Prof Geol/Geol Engineering, Penn State University |
| 1973 | Visiting Professor, University of Toronto |
| 1972 | Guest Professor, Geol & Mining Laboratory, Technical Univ Delft |
| 1964-1969 | Assistant Professor, Penn State University |

## GOVERNMENT APPOINTMENTS

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|---|---|
| 1980-present | Adjunct Researcher (WAE), USGS Volcano Hazards Program [32 yrs] |
| 1996-2003 | Senior Scientist, British Geol Survey, Montserrat; Risk Assessment Panel |
| 2003-2013 | Scientific Advisory Cmte for Montserrat Crisis, UK Government |
| Various | Consultant to US Army Corps Engineers; mining engineering US Bureau Mines |

## PROFESSIONAL REGISTRATION

*Professional Engineer*, Commonwealth of Pennsylvania, PE-015075
*Professional Geologist*, Commonwealth of Pennsylvania, PG-000496-G

## HONORS AND AWARDS

*National Academy of Engineering* [elected 2017]
*Thorarinsson Medal*, International Assoc Volcanology and Chemistry of Earth's Interior, 2013
[the highest award in volcanology; awarded once each four years]
*Research Faculty Selection*, PSU Alumni Association honored Trading Card Researcher, 2011
*Honorary Member*, Association of Engineering Geol, 2010 [highest honor of Association]
*Distinguished Practice Award*, Geol Society of America, Engineering Geol Division, 2009
*Schuster Medal*, Canadian Geotechnical Society, 2009
[for outstanding achievements in research on hazards in North America]
*Elected Union Fellow*, American Geophysical Union, 2007
[for contributions to the understanding of volcano deformation, hazards and forecasting]
*Richard H. Jahns Distinguished Lecturer*, Geol Soc America & Assoc Engineering Geol, 1993
*Faculty Scholar Medal for Outstanding Achievement in Research and Engineering*, 1992
[highest academic honor at Penn State University]
*Harry Glicken Memorial Lecture*, University of California at Santa Barbara, 1992
*US National Cmte Rock Mechanics (Nat Research Council) Award*, 1990
[for outstanding research in theoretical rock mechanics: failure-time forecasting in rock mechanics]
*McKinnon Lecture*, College of Engineering, University of Utah, 1990
*Wilson Research Award*, College of Earth & Mineral Sciences, Penn State University, 1990
*Landslide News Award* for best paper: landslide failure forecasting (Second Prize), 1990
*Fellow*, Geol Soc America
*Macquarie University Scholar*, Australia, 1989
*George Stevenson Research Medal*, Institution of Civil Engineers (London), 1984
[for the outstanding research paper published in I_C_Engineering journals]
*US National Cmte Rock Mechanics (Nat Research Council) Award*, 1984
[for outstanding research in rock mechanics practice: mechanics of mountain collapse]
*Raymond C Gutschick Symposium Keynote Lecturer*, University of Notre Dame, 1979

## CAREER NARRATIVE

Barry Voight is Emeritus Professor of Geology and Geological Engineering at Penn State University. A member of the faculty since 1964, he retired from teaching in 2005. He attended University of Notre Dame, degrees in Geology, and Civil Engineering (BS Geol., 1959; BS CE, 1960; MS CE (Soil Mech.), 1961), and began research as an undergrad with Profs. Ray Gutschick and engineering geologist Erhard Winkler, catching permanently the researcher's disease of 'exhilaration from discovery'. After a one-year stint at Cornell and being influenced there by soil engineer Bengt Broms, he joined Fred Donath's rock mechanics-structural geology group at Columbia University, was a President's Fellow and course lecturer in Engineering Geology, and earned a PhD in 1965. He has been at Penn State since, apart from stints as Visiting Professor at the University of Toronto, the Technological University at Delft, Netherlands (in the service of Jacques Dozy), the University of California at Santa Barbara, and as MacQuarie Research Scholar (Australia) (with Russ Blong). Professional interests have included engineering geology and geotechnics, rock mechanics, tectonics, volcanology, and hazards and risk assessment/hazards mitigation. Below is a summary of some career developments.

At PSU he taught basic and applied geology to Civil and Petroleum Engineering students, mechanics of geological materials, the finite element analysis method (FEM) (the first such course given at PSU, in 1969). He also included a module on FEM in his basic geology courses for engineering majors, and taught field geology to geoscience majors, at sites in Montana and Wyoming. He taught volcanology after 1990, and included many undergrad and grad students on research projects, discussed below. He had published several books in the 1970s about rock mechanics, rockslides and slope instability, and continued to research various

volcano edifice stability issues, often with PSU colleague Derek Elsworth.

He conducted geological and geotechnical field studies in the Appalachians, Rocky Mountains, and Cascade Range. Abroad he worked on all continents apart from Antarctica. In the 1960s he originated the anelastic strain recovery (ASR) method for deep rock-stress measurements, in current global use for energy developments and in ultra-deep and IODP boreholes for faulting and earthquake research. He developed new methods to anticipate material failure (e.g., Failure Forecast Method, FFM, with Reinold Cornelius), adapted these methods using geodetic and seismic data for the time prediction of landslides and eruptions, and used them (when suitable) in resolving practical emergency problems.

In practice he was consultant in engineering geology and geotechnics, hazards management, and forensic work, in slope failures and foundation problems (including *USGS, USCOE*, Governments of France and Italy, among others). He held an appointment (1991-2014) on the *External Dams Safety Cmte* of the Republic of Ireland, led by Austrian engineeers Guntram Innerhofer and Ernst Pürer, on rehabilitation works. He participated in the *SOG/EPRI* development of seismic hazard methodology for central & eastern USA, and has taken on projects as far afield as Papua New Guinea, the Himalayas in India, and Somalia. He worked on hazards assessments for the Caspian Sea oil/gas pipelines crossing Azarbaijan toward Turkey. He served in the 1980s on the *US National Research Council* committee on Ground Failure Hazards, chaired a *National Research Council* committee addressing snow avalanche hazards, and was instrumental in 1986 in founding the *American Association of Avalanche Professionals*. He served under Gene Shoemaker on a panel reviewing the *USGS Volcano Hazards Program* in 1986, where he strongly supported a Volcano Distaster Assistance Program, and an Alaskan Volcano Observatory. He served on a similar panel in 1989.

His post-1980 work largely emphasized geotechnics applied to volcanoes, quantitative volcanology, and disaster prevention. He holds an adjunct appointment (since 1980) with the *USGS Cascades Volcano Observatory* as a member of the *Volcano Hazards Team*, and has worked with the *USGS*, the *United Nations*, *WOVO*, and several host nations on volcano emergencies. He was invited to participate in the *USGS* pre-eruption hazards assessments at **Mount St. Helens** (MSH) in 1980, when he recognized the potential for a large-scale north-flank edifice failure. After the failure actually occurred and triggered the great May 1980 eruption, he continued work on the MSH post-eruption disaster response, directed the USGS investigation team (with Harry Glicken) on the ~3-billion cubic meter volcanic debris avalanche, and worked on other issues involving volcanic processes and hazards. He originated the lake-tap mitigation solution for Spirit Lake when it threatened to overtop the avalanche debris dam and cause a severe lake-breakout flood; the engineering solution was contracted through COE and utilized a tunnel-boring machine (completed 1985). He worked on various other MSH problems, including the March 1982 explosive eruption with Dick Janda, and assessments at other volcanoes in the Cascade Range and Alaska.

He conducted Iceland research in the late 1970s-1980s with students and in collaboration with Kristján Saemundsson (*National Energy Authority*), on fracture analysis near the plate boundary, on **Krafla** volcano modeling with Jim Ewart, and stratigraphy, structure, and paleomagnetism at a remarkable transform fault in the Tjörnes Fracture Zone. This work involved mapping a large rugged, seldom visited and unstudied peninsula, and afterward giving it the formal name of *Flateyjarskagi* that was ratified by Icelandic authorities. The study was important in revealing and documenting major strain and structural bending over a 20-km broad area of the transform (K. Young et al., 1985, 2018; M. Jancin et al., 1985, 1995). As a member of *Cmte de Estudios Vulcanologicos*, he worked with Marta Calvache in 1986 on post-disaster monitoring and hazards assessments at **Nevado del Ruiz** (Colombia), the most lethal eruption of the Century apart from Pelee (23,000 fatalities). He demonstrated through EDM monitoring that a feared crater-flank collapse was unlikely, and published a detailed post-mortem on why disaster prevention measures had failed. He was sent to the awakening **Galeras** Volcano in 1989 with Dick Janda and Dave Harlow of USGS, and co-produced with Janda the first detailed (and realistic) hazards map of Galeras. Also with Janda (by then Chief of *USGS VDAP*), in 1991 he made an assessment of **Nevado del Huila**, another Colombian assignment complicated by sinister guerrilla factions and cartel concerns, and worked by helicopter gunship with landing restraints

imposed by the US Embassy. Immediately afterward he contributed to a lahar flowmeter installation at **Cotopaxi** with Pete Hall and Patty Motthes. Simultaneously another USGS mission was at crisis stage in Pinatubo, and at the Quito airport Voight learned that his former student Harry Glicken had been killed at Unzen in Japan, along with Maurice and Katia Krafft and forty others.

Also in the early 1990s he contributed in a modest way to studies at **Redoubt** (AK) and **Pinatubo** volcanoes, conducted small investigations involving **Bandai-san** (with Yoichi Nakamura), **Ontake-san** (with Norio Oyagi), and **Unzen** in Japan, and worked with Sasha and Marina Belousov on **Shiveluch** and **Bezymianny** volcanoes in Kamchatka, where they discovered a previously unknown large pyroclastic surge deposit from the 1997 eruption. Also, since 1988 he made a series of contributions at **Merapi** in Java in collaboration with the *Volcanological Survey of Indonesia*. The Merapi work also involved an initial USGS-VDAP mission in 1988 and another following the November 1994 disaster, coupled with years of his NSF-supported research. He constructed a network of benchmarks around the summit rim to be used for EDM, GPS, and gravity surveys, with grad students monitored deformation and seismic precursors to several eruptive events, studied eruption deposits, human injuries from pyroclastic currents and their causative physics, and interviewed injured citizens. His thorough study of the historical record led him to conclude in 2000 that an explosive eruption much larger than any of the 20$^{th}$C could soon occur (c. VEI 4), with only-modest precursors thus enabling potential disaster. This conclusion (shared independently by S. Andreastuti, and C. Newhall) was important for hazards mitigation, and the feared eruption (VEI 4) actually occurred in 2010. 350,000 were evacuated, with 355 killed. He provided support to VSI and USGS (via C. Newhall) for the 2006 and 2010 (VEI 4) Merapi eruption crises.

At **Soufriere Hills** volcano, West Indies, he was a Senior Scientist since 1996 with the *British Geological Survey* assigned to *Montserrat Volcano Observatory*, worked on a variety of monitoring and research issues with Simon Young and other MVO staff, and was active along with Steve Sparks, Geoff Wadge, and Willy Aspinall and others through 2013 (volcanic activity declined after 2010) on the *UK Scientific Advisory Cmte* providing guidance to UK and Montserrat governments. He was involved with crater-wall stability crises, eruption forecasting using tilt and seismic data (recognizing the "~10 hour" and "~7 week" cycles), vulcanian explosions, a debris avalanche with volcanic blast (St Helens mimicked on a small scale), rain-triggered and gas-pressurized major lava dome collapses, and risk boundaries and evacuations. Several of his students used

Montserrat data in PhD theses. In volcanology his research interests included edifice and dome deformation and collapse, explosive volcanism, volcano monitoring and forecasting, and pyroclastic currents. He was Project Director 2002-2015 for **CALIPSO** (*Caribbean Andesite Lava Island Precision Seismo-geodetic Observatory*), an international NSF/NERC-supported consortium project focused on magma reservoir and eruption dynamics on Montserrat. His colleagues were world-class researchers (Alan Linde, Selwyn Sacks, Glen Mattioli, Derek Elsworth, Eylon Shalev et al.) and postdocs C. Widiwijayanti and D. Hidayat. Remarkable results were obtained in strain and GPS data, notably from the "world-record" lava-dome collapse in July 2003 and its tsunami, from explosions, and from multi-year cyclic inflations and deflations. A successful major offshore/onshore tomographic imaging study of Montserrat and its magma system was conducted in 2007 (**SEA-CALIPSO**) with data analysis through 2012 defining the magma chamber and melt properties at depths 5-8 km; results are given in the special issue of *Geophysical Research Letters* in 2010, co-edited with Steve Sparks, *AGU G-cubed* in 2012, and in *Geological Society (London) Memoir 39*.

Elsewhere, in 2003 he assisted *Dipartimento Protezione Civil*, Italia, in evaluating the volcano landslide-tsunami crisis at **Stromboli**, and with M. Marsella installed EDM reflector stations on the Sciarra del Fuoco to check stability. He aided INGV also on **Etna** in 2014, and other volcano issues such as **Campi Flegrei**. He worked on the Andes project (MAP: GAC) for the *Geological Survey of Canada* (2005-2007), giving a short course on seismic-influenced slope stability in Bogota, and worked in Chile on **Villarica**. In 2011 he advised NIED (with Shigeo Aramaki) in Japan on **Fuji-san** hazards, and the Iceland Meteorological Agency in 2015 on the **Bardarbunga** lava eruption.

Since about 2000 he also worked on computational fluid dynamics modeling of volcanic blasts with Augusto Neri (*INGV*) and colleagues (Tomaso Esposti Ongaro, Mattia de'Michieli Vitturi, Amanda Clarke, Christina Widiwijayanti). Major studies were made of both the 1997 Boxing Day volcanic blast on Montserrat and the Mount St Helens 1980 blast, verified by detailed field comparisons, and used notably in Montserrat to mitigate threatened blasts directed toward populated areas. Their new model overturned the generally-

accepted model of principal blast processes. Modeling made in 2007 accurately foresaw the area of impact reached by pyroclastic flows and surges in the large 2010 Montserrat eruption. He also helped write the successful research proposal for IODP drilling in the Caribbean, and participated in research for the first scientific drilling of submarine volcanic island landslides in IODP Expedition 340 (summarized in a 2015 article in G-cubed, *AGU*).

As university professor he had the pleasure of guiding bright students such as Jon Major, Amanda Clarke et al., at undergrad or grad levels, including several from other institutions. The most unfortunate of them was Harry Glicken (co-advised by the late R.V. Fisher, UCSB), whose PhD thesis on the deposits at Mount St Helens was at the forefront of research on debris avalanches in the 1980s that led to their recognition at hundreds of volcanoes worldwide. Curiosity leads to understanding, but volcanologists who are curious can get themselves into trouble and sometimes die because of it: Harry narrowly escaped death at MSH in 1980, but died too young in 1991 at Unzen, Japan, from a hot pyroclastic current, falling near the famous couple Maurice and Katja Krafft. This sad incident added motivation for BV's focus on pyroclastic current research, including successful development with C. Widiwidjayanti and Steve Schilling of an objective GIS-based procedure for mapping pyroclastic current hazards (published 2008/9). A JVGR tribute volume to Harry was organized in 1995.

He has published several hundred papers or abstracts, and has edited or co-edited several books, including *Rock Mechanics: the American Northwest (1974); Mechanics of Thrust Faults and Decollement (1976); Rockslides and Avalanches* (1978, 1979, in two 800+pp Elsevier volumes); *Deep-seated Landslides and Large-scale Rock Avalanches (1994); Models of Magmatic Processes and Volcanic Eruptions (1995)*; and volumes on landslides and snow avalanches for the *National Research Council, National Academy Press.* He

was Editor of the *Special Issue on Merapi Volcano* (JVGR, 2000), was Co-Convener of the 1998 Special Section of Geophysical Research Letters on the *Eruption of Soufriere Hills Volcano*, and contributed substantially to the 2002 *Geological Society of London Memoir 21* on the Soufriere Hills eruption. He was Convener of the 2010 special GRL issue on *Imaging the Soufriere Hills Volcano*, and co-Editor in 2014 of Memoir 39, *Geological Society of London*, on *The Eruption of Soufriere Hills Volcano: 2000-2010.*

He received research awards from National Cmte Rock Mechanics/National Research Council (*Applied Research Award* 1984 for work at Mount St Helens; *Basic Research Award* 1990 for failure-prediction theory), the *George Stephenson Medal* from the Institution of Civil Engineers (London) for a study on Mount St Helens collapse mechanics, the *Wilson Award* for research in Earth and Mineral Sciences at Penn State, and Penn State's highest research honor, the *Faculty Scholar Medal* for Outstanding Achievement in the Physical Sciences and Engineering. He was *Richard Jahns Distinguished Lecturer* for 1992 of the Geological Society of America and Association of Engineering Geologists, and was happy to receive this because it was Jahns who had hired him to teach at Penn State in 1964. He was a *Fellow of Geological Society of America*, and was elected *Union Fellow of American Geophysical Union* in 2008 for "fundamental contributions to the understanding of volcano deformation, assessment of volcano hazards, and forecasting." In 2009 he received the *Distinguished Practice Award* from the Geological Society of America, Engineering Geology Division. Also in 2009 he received the *Schuster Medal* from the Canadian Geotechnical Society and Association Engineering Geologists, for outstanding achievements in research on geologic hazards in North America. In 2010 he was elected *Honorary Member of the Association of Engineering Geologists*, their highest honor. In 2013 he was awarded the *Thorarinsson Medal* of the International Association of Volcanology (IAVCEI), their highest honor, awarded once every four years. He was elected to *National Academy of Engineering* in 2017, for understanding, management, and mitigation of geologic hazards.

He helped to establish the 'Barry Voight Endowment for Volcanic Hazards' at Penn State, which aims to support education for volcano hazards specialists from developing countries.

## SYNERGISTIC ACTIVITIES

**[SEE ALSO LATER IN CV— HAZARD REPORTS]**

2015 Scientific Committee, *12th International Symposium on Landslides (ISL 2016): Association Geotechnica Italiana*

2015-present Advisor to *Icelandic Meteorological Office* on volcanic hazards .

2014 (1991-) External Dam Safety Committee, ***Electricity Supply Board, Ireland***. Inspection and engineering improvement of all large dams in Ireland to meet modern standards (about 3/yr).

2014-present Advisor to ***INGV Italia*** (Govt Italy) for mitigation of slope instability; volcanic hazards.

2011 Keynote Lecturer, *International Workshop on Strategy of Volcano Disaster Mitigation 2011: Large Eruptions and Crisis Management*. Fuji and Tsukuba, Prof. S. Aramaki, Convener

2011 Keynote Lecturer, Engineering Volcanoes, *SHV 15 Years-On Conference*, Montserrat

2011 MIA-VITA Advisor to French Indonesia project **DOMERAPI**

2009-2011 **IODP Caribbean drill project Proposal Team** for 2012 cruise, A. le Friant, Project Leader (mechanics offshore slope movement)

2004-2010 ***SEA-CALIPSO* Project Co-Leader** (onshore-offshore seismic experiment)

2005 Keynote Lecture on *Landslide Risk Assessmen***t** *and Mitigation****, Japan-US Joint Symposium for Natural Disaster Reduction***. Kobe, Japan.

2003-2004 Convenor Session 2b, *Volcano Instability*. ***IAVCEI Congress****, Pucon Chile, Nov 2004*

2003 Advisor to ***Department of Civil Protection Italia*** (Govt Italy) for instability/tsunami risk

2004-present Organizing Committee, ***Ten-Year-On Anniversary Conf*ference,** Montserrat.
Keynote address, ***Fifteen-Years-On Anniversary Conference***, Montserrat, 2011

2003 ***Long Valley Caldera Workshop***. Mammoth CA, Oct 2003. Tilt and seismic monitoring

2003-2006 Advisor, ***Multinational Andean Project***, Colombia and Chile. Slope stability and failure under seismic loading

2002-present Project Director, ***CALIPSO* Project** (CIW, Duke, Univ. Ark., PSU, Auckland, Bristol, MVO)
(deformation and seismic monitoring and analysis)

2002 Organizing Committee, ***Mt Pelee Centenary Intl Congress***, Martinique

*2000* ***International Forum on "Living with Volcanoes"***, Tazawako, Japan (Nov 2000)
Keynote Lecture (televised March 2001). Audience 800 high school students.
Hazards and mitigation. Visits to evacuation village at Usu; Asama; Sakurajima.

1996-present Collaborations with ***Montserrat Volcano Observatory***; ***Risk Assessment Panel*** and ***Advisory Committee*** for UK and Montserrat Governments; Co-Convener GRL *Special Section volumes on Soufriere Hills Eruption*, 1998 and 2010. Senior Scientist, BGS assigned to MVO.

1980-present *Member* ***USGS Volcano Hazards Team.*** Advised on volcano hazards and risk assessments and crises responses [36 years of service] (***Mount St Helens*** *pre- and post-May 18 1980;* ***Other Cascade*** *volcanoes 1980-1986;* ***Mt. Sanford*** *1981 and* ***Redoubt*** *1989-93, AK;* ***Nevado del Ruiz*** *1986,* ***Galeras*** *1989,* ***Nevado del Huila*** *1991, Colombia;* ***Cotopaxi****, Ecuador 1991;* ***Merapi****, Indonesia 1988, 1995, 2006, 2010;* ***Pinatubo****, Philippines 1991;* ***Popocatept****l, Mexico 2003;* ***Montserrat****, WI 1995-present*).

1993-present Collaborations with scientists at ***Institute Volcanology***, Russian Academy of Sciences (***Bezymianny***, ***Shiveluch*** *volcanoes*, with AB and M Belousova).

1991 Advisor, *International Early Warning System* (***UNESCO/WOVO***). Emergency response mission to **Nevado del Huila** Volcano, Colombia, and hazard assessment, **Cotopaxi**, Ecuador.

1989 Advisor, ***United Nations Disaster Relief Organization*** (***UNDRO***), Mission to Investigate unrest at **Galeras** Volcano, Colombia. Assessed volcanic flowage hazards and installed baseline deformation network (collab. w. USGS).

1988-2010 Collaborations with ***Volcanological Survey of Indonesia*** working at *Semeru and Merapi volcanoes*; co-organizer 1995 *Decade Volcano Workshop*; **Co-Editor *Merapi Volume*** *JVGR (*2000).

**OTHER PROFESSIONAL ACTIVITIES (***alphabetical order***)**

***American Academy of Mechanics***
Charter Member

***American Association of Avalanche Professionals***
Committee to Organize Association
Charter Member
Board of Directors (1987 – 199x)
Research and Education Committee (1987-1988)
Education Committee (1988-1990)
Awards Committee (1988-present; Chair, 1991-199x)

***American Geophysical Union***
Elected Fellow, 2007

***American Society of Civil Engineers***
Committee on Slope Stability (1973-1980)

***American Society for Testing and Materials***
Committee C-18, Natural Building Stones (1967-1972)
Committee C-18, Soil and Rock for Engineering Purposes (1967-1972)

***Association of Engineering Geologists***
Organizing Committee for 1978 National Meeting
Associate Editor, Bulletin of AEG (1976-1980)
R. H. Jahns Distinguished Lecturer Committee (AEG/GSA; Chair, 1990)
R. H. Jahns Distinguished Lecturer (1992)
Shuster Medal (2009)
Honorary Member (2010)
Awards Cmte (2010-2012)

***Atelier sur les Aleas Volcaniques. "Les volcans antillais, des processsus aux signaux"***
Institut Nacional des Sciences de l'Univers/CHRS. Paris (Jan 2001)
Keynote. Lessons from Montserrat for risks in Antilles.

***Austrian Commission on Large Dams***
Studienreise to Austrian dam sites (1966)

***Comite de Estudios Vulcanologicos Communidad Caldense*** (1986)
(Volcanological Hazards, Nevado del Ruiz, Colombia)

***Comité Francais de Géologie de l'Ingénieur***
Foreign expert, Seminaire Movement de Versants de Grande Ampleur
(Nainville-les-Roches, 19-21 June 1991)

***Commonwealth of Pennsylvania, State Registration Board for Professional Engineers***
(Consultant: organized initial PE exams for Geological Engineering)

***Continental Drilling For Scientific Purposes Workshop***, Los Alamos (1978)

***Continental Drilling Workshop***, Ghost Ranch, New Mexico (1974)

***Electric Power Research Institute***
Research Project on Intraplate Eastern USA Earthquakes (1984-1986)

***Electricity Supply Board, Ireland***
External Dam Safety Committee (1991-present)

***'Ettore Majorana' Centre for Scientific Culture, Erice, Sicily***
Advances in Assessment of Earthquake & Volcanic Hazards (2001)
(Invited Lecturer on viscometry and episodicity of magma ascent)

***European Geophysical Union***
Member since 2010

***Field Conference of Pennsylvania Geologists***
Conference Committee, 50th Annual Meeting (1984-1985)

***Geological Society of America (Fellow)***
Penrose Conference on Landslides, 1978 (State-of-Art Reporter)
Penrose Conference on Heat Transport Processes, 1979 (State-of-Art Reporter)
R. H. Jahns, Distinguished Lecturer Committee (AEG/GSA; Chairman, 1990)
Associate Editor, Bulletin of GSA (1989-1992)
R.H. Jahns Distinguished Lecturer (1992)
Distinguished Practice Award (2008)

***Geothermal Resources Council***
State-of-art-Lecturer (1992)

***International Association of Engineering Geology***
Commission on Rock Classification
U.S. National Committee (1992-present)

***International Association of Volcanology and Geochemistry of Earth's Interior***
Congresses:
(Santa Fe 1989, Puerta Vallerta 1997; Bali 2000; Pucon 2004; Iceland, 2008; Kagoshima, 2013)
Convenor, Pucon
Organizing Cmte, Mt Pelee Centenary Congress
Iceland (2008, Field Trip Leader)
Wager Citationist, 2010
Krafft Citationist, 2013
Thorarinsson Medalist, 2013

***International Geological Congress***
Convenor, Kyoto (1992)
Participant (Prague, 1968; Washington, 1990; Kyoto, 1992)

***International Institute of Volcanology***

Catania Slope instability hazard evaluation, in cooperation with John Murray, University College, U.K., (1987-1988)

***International Seminar-Workshop on Lahars and Landslide, Philippines***

(1986) (State-of-Art Lecturer)

***International Society for Rock Mechanics***

Panel on Stress Measurements, 1st International Congress (1966)
Commission on Classification of Rocks and Rock Masses (1970-1978)
Organizing Committee for 3rd International Congress (1972-1974)
Excursion Committee for 3rd International Congress (1972-1974)
Leader, Northwest USA Excursion, 3rd International Congress on Rock Mechanics (1974)
Congress contributions (1966, 1970, 1974, 1987, 1991)

***International Symposium on Landslides*** (State-of-Art Lecturer) Toronto (1984)

***International Union for Geodesy and Geophysics***

Chairman, Session on Tectonic and Geochemical Evolution of Iceland, Hamburg (1983)

***International Workshop on Decade Volcano Merapi***, Yogyakarta, Indonesia (1995)

Organizing Committee
Scientific Committee
Publication Committee
SOA Lecturer

***International Workshop on Volcanic Emergency Response***, (ONAD, INGEOMINAS, USGS/VDAP), Pasto, Colombia (1989) (Invited Instructor)

***Japanese-American Workshop on Erosion Control in Volcanic Areas***, Seattle (1982)

***Mount Rainier Decade Volcano Workshop***, Seattle (1992, participant)

***National Research Council (NAS-NAE)***

Foreign Sciences Panel, U.S. National Committee on Rock Mechanics Awards Committee, U.S. National Committee on Rock Mechanics (1985-1987)
Technical Expert, Committee on National Disasters (1982-present)
Member, Committee on Ground Failure Hazards (1983-present)
Chairman, Task Group on Subsidence (1984-1985)
Chairman, Task Group on Snow Avalanches (1985-1986)
Chairman, Panel on Snow Avalanches (1986-1991)

***National Science Teachers Association***, NYC

Theme Lecturer: Adventures in Volcano Prediction

***Raymond C. Gutschick Symposium***, Notre Dame, IN (1979)

Organizing Committee
Keynote Lecturer

***Royal Society (London). Discussion Mtg on "Causes and Consequences of Eruptions of Andesite Volcanoes."*** Keynote Lecture on volcano edifice collapses. (1999)

***Society of Sigma Xi***

***U.S. Symposia on Rock Mechanics***
National Organizing Committee and Session Organizer, (1989, Morgantown)
National Organizing Committee and Session Organizer, (1992, Madison)

***U.S.-Asia Conference on Engineering for Mitigating National Hazards Damage***
(EMNHD-2), Yogyakarta, Indonesia (June 22-26, 1991)
U.S. Delegate and Theme Lecturer on Volcanic Monitoring

***U.S.-Japan Science and Technology Cooperation in Natural Hazard Mitigation***
Punalu'u, HI (March 27-30, 1990)
Mt. Hood, OR (Sept. 6-13, 1992)
Menlo Park, CA (March 8-12, 1993)

***Utah Workshop on Landslide Research***
*Needs in Response to 1983 Mudslide Disaster*
(Invited Expert) Salt Lake City, UT (November, 1983)

## PUBLICATIONS

Published over four hundred papers or abstracts (>100 papers in peer-reviewed journals), and has edited or co-edited over 15 books. ***Google Scholar*** (Jan 2019) lists about **11,000 citations, h-index 60, i10-index 144**. [https://scholar.google.com/citations?user=rdxooXgAAAAJ&hl=en]

## BOOKS AND MONOGRAPHS

Wadge, G., Robertson, R.E.A., Voight, B. (eds) 2014. ***The Eruption of Soufriere Hills Volcano, Montserrat from 2000 to 2010.*** *Geological Society, London, Memoirs,* 39, 501 pp

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Voight, B., Sparks, S., (eds) 2010. ***Eruption of Soufriere Hills Volcano, the CALIPSO Project, and the SEA-CALIPSO arc-crust imaging experiment****. Reprint Volume by Amer. Geophys. Union, with articles from Geophys. Res. Lett. V 37, J Geophys Res, G-cubed, and EOS.*

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## SAMPLE ABSTRACTS

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B. B. Carr, A. B. Clarke, M. de¹ Michieli Vitturi and B. Voight. 2013. Effects of magma and conduit conditions on transitions between effusive and explosive activity: a numerical modeling approach. AGU (American Geophysical Union) Fall Meeting, San Francisco, USA, 2013.

A. B. Clarke, B. D. Brand, B. Voight and M. de¹ Michieli Vitturi. 2013. Modeling dynamics and sedimentation of dilute pyroclastic density currents. IAVCEI Scientific Assembly, Kagoshima, Japan, 2013.

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## VOLCANIC HAZARD REPORTS

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**[NOTE: ABOUT A DOZEN OF THESE "RAP" REPORTS WERE PRODUCED BETWEEN 1997 AND 2003…e.g.: ]**

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**[NOTE: FROM 2003 ONWARD, THIS WORK WAS CONTINUED BY THE "SCIENTIFIC ADVISORY COMMITTEE," A FORMAL UK GOVERNMENT STRUCTURE]**

Scientific Advisory Committee (SAC) (Wadge, G., Aspinall, W., Voight, B. et al.), **Assessment of the Hazards and Risks associated with Soufriere Hills Volcano, Montserrat. Part 1. Main Report.** *FCO, UK Government;* published online at Montserrat Volcano Observatory. (2003 – 2012)

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**[NOTE: REPORTS OF *SAC 1* THROUGH *SAC 17*, HAVE BEEN PRODUCED BETWEEN 2003 and 2013, WITH BOTH "MAIN" AND "TECHNICAL" REPORT TYPES GENERATED; A TOTAL OF 34 REPORTS WERE PRODUCED; THE LATEST, *SAC 17*, MET OCTOBER 2013]**