

## TRACY K.P. GREGG

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### EDUCATION

Sc.B. (honors), Geological Sciences, Brown University, Providence, RI, 1990. Thesis: *Rhyolitic ridges on martian basalts*, Peter H. Schultz, advisor.

Ph.D., Geology, Arizona State University, Tempe, AZ, 1995. Dissertation: *Quantification of lava flow morphologies through analog experiments*, Jonathan H. Fink, advisor.

### RESEARCH INTERESTS

Volcanic eruptions in extreme environments (mid-ocean ridges and extraterrestrial surfaces); lava flow eruption and emplacement on Earth and other planets; constraining physics of eruptions from resulting volcanic morphologies.

### PROFESSIONAL EXPERIENCE

*2004 to present:* Associate Professor, Department of Geology, University at Buffalo. Supervision of graduate and undergraduate students; instruction of volcanology, planetary geology, magma petrogenesis and ascent, and supervision of introductory laboratories.

*1998 to 2004:* Assistant Professor, Department of Geology, University at Buffalo. Supervision of graduate and undergraduate students; instruction of volcanology, introductory geology, planetary geology and marine geology.

*1998 to present:* Adjunct Assistant Scientist, Woods Hole Oceanographic Institution. Constraining volcanic and hydrothermal processes in submarine volcanic zones.

*1997 to 2002:* Consultant, Proxemy Research, Bowie, Maryland.

*1997-1998:* Assistant Scientist, Woods Hole Oceanographic Institution. Quantification of submarine and extraterrestrial eruption dynamics through numerical, physical, and analytical modeling.

*1997:* Adjunct Laboratory Instructor, Dept. of Geology, Bridgewater State College, Bridgewater, MA. Taught 1 section of undergraduate introductory geology laboratory.

*1995 – 1997:* RIDGE post-doctoral Fellow (funded through NSF Ocean Sciences), Dept. of Geology and Geophysics, Woods Hole Oceanographic Institution, Woods Hole, MA; Dr. Daniel Fornari, advisor.

1992 to 1995: Graduate Research Assistant, Arizona State University, Tempe, Arizona.

1990 to 1992: Graduate Teaching Assistant, Arizona State University, Tempe, Arizona.

1987 to 1990: Undergraduate Teaching Assistant and Research Assistant, Brown University, Providence, Rhode Island.

#### **FUNDED GRANT SUPPORT**

1. T.K.P. Gregg, PI: 4/15/14 - 4/14/19  
"Planetary Geology and Geophysics Undergraduate Research Program (PGGURP)"  
\$426,287 (NASA Planetary Geology and Geophysics Program)  
*Responsibilities: Project coordinator for summer research program; Ms. Robyn Wagner is also supported on this grant.*
2. T.K.P. Gregg, PI: 4/15/10 - 4/14/14  
"Planetary Geology and Geophysics Undergraduate Research Program (PGGURP)"  
\$427,039 (NASA Planetary Geology and Geophysics Program)  
*Responsibilities: Project coordinator for summer research program; Ms. Robyn Wagner is also supported on this grant.*
3. T.K.P. Gregg (PI) and A. Yingst: 11/1/2007-10/31/2010  
"Timing and Stratigraphy of Unusual Lunar Volcanism: Geologic Mapping of the Marius Quadrangle (Lunar Quadrangle 10)"  
\$232,130 (NASA: Planetary Geology & Geophysics)  
*Responsibilities: Primary mapper and project coordinator*
4. T.K.P. Gregg (PI) and David A. Crown: 08/15/07 – 08/14/08  
"Formation and Evolution of Hesperia Planum, Mars"  
\$56,000 (NASA Planetary Geology and Geophysics Program)  
*Responsibilities: Primary mapper and project coordinator*
5. T.K.P. Gregg, PI: 4/15/07 - 4/14/10  
"Planetary Geology and Geophysics Undergraduate Research Program (PGGURP)"  
\$325,000 (NASA Planetary Geology and Geophysics Program)  
*Responsibilities: Project coordinator for summer research program*
6. T.K.P. Gregg: 8/01/04 – 7/31/05  
"Building ocean crust: Quantitative comparison of submarine lava channel formation and laboratory simulations"  
\$47,893 (NSF Ocean Sciences, Marine Geology & Geophysics)  
*Responsibilities: supervision of Ph.D. candidate*
7. T.K.P. Gregg (PI) and D.A. Crown (Co-I): 10/01/05 – 09/30/08  
"Geologic map of Hesperia Planum, Mars: A test of multiple working hypotheses"  
\$168,000 (NASA Planetary Geology and Geophysics)

*Responsibilities: Project coordinator; creating maps with graduate student under advisement*

8. S. Sakimoto (PI), T.K.P. Gregg (Co-I), S. Hughes (Co-I) and R. Greeley (Collaborator): 8/01/02 – 7/31/05  
"Plains Volcanism and Small Volcanic Edifices on Mars"  
\$150,000 (NASA Mars Data Analysis Program)  
*Responsibilities: Fieldwork, data analyses and investigation of lava flow morphologies*
9. R. Lopes (PI), L. Camp (Co-I) and T.K.P. Gregg (Co-I): 3/1/03 – 2/28/06  
"Volcanism on Io"  
\$135,000 (NASA Planetary Geology and Geophysics)  
*Responsibilities: laboratory simulations of lava lakes on Io*
10. T.K.P. Gregg (PI) and D. Crown (Co-I): 10/01/01 – 09/30/04  
"Evolution of Western Hesperia Planum, Mars: Geologic Mapping of MTM Quadrangles –15257 and –20257"  
\$168,057 (NASA Planetary Geology and Geophysics)  
*Responsibilities: Creating maps with graduate student under advisement*
11. T.K.P. Gregg, PI: 4/15/03 - 4/14/06  
"Planetary Geology and Geophysics Undergraduate Research Program (PGGURP)"  
\$250,000 (NASA Planetary Geology and Geophysics Program)  
*Responsibilities: Project coordinator for summer research program*
12. T.K.P. Gregg, PI: 4/15/00 - 4/14/03  
"Planetary Geology and Geophysics Undergraduate Research Program (PGGURP)"  
\$250,000 (NASA Planetary Geology and Geophysics Program)  
*Responsibilities: Project coordinator for summer research program*
13. T.K.P. Gregg (PI), D.A. Crown (Co-I) and S.E.H. Sakimoto (Co-I): 4/15/00 - 4/14/03  
"Volcanic and erosional history of Tyrrhena and Hadriaca Paterae, Mars"  
\$167,000 (NASA Mars Data Analyses Program)  
*Responsibilities: Project coordinator; investigation of lava flow emplacement and caldera formation.*
14. T.K.P. Gregg (Co-I) and S. Sakimoto (Co-I): 10/1/00 - 01/1/02  
"Collaborative Research: Quantifying the emplacement of channeled flow using experimental, analytical and numerical analyses"  
\$79,500 (NSF, Earth Sciences)  
*Responsibilities: Laboratory simulations, measurements, and field data collection for channeled flows.*

15. D. Smith (PI), L. Kong (Co-I), J. Reynolds (Co-I), T.K.P. Gregg (Co-I): 1/1/97 - 12/31/00  
 "Understanding volcanic processes at the submarine Puna Ridge, Kilauea, Hawaii"  
 \$10,000 to UB through subcontract (NSF Marine Geology & Geophysics/Woods Hole Oceanographic Institution)  
*Responsibilities: Constraining effect of increasing water pressure and dike length effect lava flow emplacement styles.*
16. J. Sinton (PI), R. Batiza (Co-I), K. Rubin (Co-I), and T.K.P. Gregg (Co-I): 10/1/97-9/30/00  
 "Volcanological investigations of a superfast-spreading mid-ocean ridge"  
 \$56,000 to UB through subcontract (NSF Marine Geology and Geophysics/University of Hawaii)  
*Responsibilities: Cruise participant; quantitative interpretation of submarine volcanic morphologies and comparison with subaerial volcanic processes*
17. T.K.P. Gregg (Co-I) and S. Sakimoto (Co-I): 7/15/97-6/30/99  
 "Collaborative research: Quantifying the fluid dynamic processes controlling channelized lava flow emplacement through numerical, experimental and field analyses"  
 \$54,000 (NSF Earth Sciences)  
*Responsibilities: Laboratory simulations, field data collection and analyses of channeled lavas*
18. T.K.P. Gregg (Co-I) and D. Fornari (Co-I): 9/1/95 - 2/28/98  
 "Quantitative relations between submarine volcanic eruption rates and lava flow morphologies at mid-ocean ridges: Analysis of field data and laboratory simulations (RIDGE post-doctoral fellowship)"  
 \$70,000 (NSF Marine Geology and Geophysics)  
*Responsibilities: Quantitative analyses of submarine lava flow*

#### **INVITED TALKS: PROFESSIONAL**

March, 2018, Lunar and Planetary Institute's 50<sup>th</sup> Birthday and Science Symposium, Lunar and Planetary Institute, Houston, TX, March 16 (Exploration of Volcanism in the Solar System)

January, 2017, AGU Chapman Conference on Submarine Volcanism, Hobart, Australia, Jan. 30 – Feb. 4, 2017 (Modeling Approaches: Where we are, where we want to be, and how to get there).

February, 2015, Syracuse University Earth Sciences Dept., K. Douglas Nelson Lecture Series (Volcanism in the Solar System: Exotic lavas in strange places)

April, 2014, SUNY Geneseo Annual Rock Salt Lecture (Deep, Dark and Damp: Exploring Mid-Ocean Ridges with the HOV Alvin)

March, 2014, Disaster: New York, Science Teachers Association of New York State, Inc., SUNY Cortland (When and Asteroid Strikes New York)

December, 2013, Origins @ UB conference (The Origins of Planetary Surfaces)  
December, 2013, American Geophysical Union Fall Meeting (Subaerial, submarine and extraterrestrial lava flow morphologies)  
April, 2013, Dept. of Earth and Ocean Sciences, University of South Carolina, Columbia, SC (New Views of Mars)  
March 17, 2013, Moving FORWARD in Space workshop speaker, Lunar and Planetary Science Conference, Houston, TX (incorporating planetary science in undergraduate labs)  
June 2 - 4, 2012, Moving FORWARD in Space workshop leader, Temple University, Philadelphia, PA (<https://sites.google.com/a/temple.edu/forward-in-space/>)  
April, 2010, Buffalo State College, Buffalo, NY (Extreme Volcanism in the Solar System)  
May 10, 2010, Jet Propulsion Laboratory, Pasadena, CA (Plains materials on the terrestrial planets)  
October, 2009, Fall Meeting of the Geological Society of America, Portland, OR (Planetary volcanism in “every-day” geoscience curriculum: Examples and lessons learned)  
April, 2009, Department of Earth Sciences, SUNY-Oneonta, Oneonta, NY (Revising Undergraduate Labs)  
October, 2008, Department of Geology, Kent State University, Kent, OH (The New Mars)  
August, 2008, IAVCEI General Assembly, Reykjavik, Iceland (“Volcanic Plains” on the Terrestrial Planets: Constraints and Alternatives)  
February, 2008, Department of Geology, Beloit College, Beloit, WI (Mars Exploration: New Ideas about an Old Planet)  
April, 2007, Department of Earth Sciences, Syracuse University, Syracuse, NY, Science Symposium (The New Mars)  
February, 2007, Department of Astronomy and Physics, University of Rochester, Rochester, NY (The New Mars: How our understanding of the Red Planet changes with new data)  
February, 2007, Department of Geology, Beloit College, Beloit, WI (The New Mars)  
January, 2007, University at Buffalo Geology Department (The New Mars: How our understanding of the Red Planet changes with new data)  
October, 2005, Geological Society of America Fall Meeting, Salt Lake City, Utah, Oct. 13 – 19 (Incorporating extraterrestrial geology in every classroom)  
October, 2005, Department of Geology, University of Illinois at Urbana-Champaign, (Loki Patera, Io, and Earth’s mid-ocean ridges)  
April, 2004, Department of Earth and Space Sciences, University of Pittsburgh, Pittsburgh, Pennsylvania (Exploring Volcanoes at Mid-Ocean Ridges)  
April, 2004, Lunar and Planetary Institute, Houston, Texas (Loki Patera, Io: A Round Mid-Ocean Ridge)  
April, 2003, Department of Space Studies, University of North Dakota, Grand Forks, North Dakota (High-pressure volcanism: Venus and Earth’s Mid-Ocean Ridges)

April, 2003, Geology Department, University of North Dakota, Grand Forks, North Dakota (Volcanism in the Solar System)

December, 2002, On the Cutting Edge Workshop on the use of Global Data Sets in the Classroom, San Francisco, California (Planetary data sets and geoscience education)

December, 2002, Fall American Geophysical Union Meeting, San Francisco, California (Lava emplacement at Sabancaya volcano, Peru)

February, 2002, College of Arts and Science Lecture Series, SUNY-Buffalo, Buffalo, New York (Volcanic eruptions in the Pacific Ocean)

December, 2001, Fall American Geophysical Union Meeting, San Francisco, California (New Views of Mars)

May, 2001, Oregon State University, Department of Geology, Corvallis, Oregon (Volcanism in the Solar System)

September, 2000, Department of Physics, University at Buffalo, Buffalo, New York (Everything we knew about Mars is wrong)

March, 1998, Dept. of Geology, Mt. Holyoke College, Amherst, Massachusetts (Development of folds on lava flow surfaces)

January, 1998, Woods Hole Oceanographic Institution, Dept. of Geology and Geophysics, Woods Hole, Massachusetts (Lava flow emplacement at mid-ocean ridges)

January, 1998, University of Rhode Island, Graduate School of Oceanography, Newport, Rhode Island (Formation of submarine lava pillars)

November, 1997, University of Massachusetts, Dept. of Geology, Amherst, Massachusetts (Volcanism in the Solar System)

February, 1997, Boston College (Volcanoes in the Solar System)

January, 1997, IAVCEI General Assembly, Puerto Vallarta, Mexico (Remote sensing of submarine lava flows)

September, 1996, Dept. of Geology, University of Delaware, (Volcanism on Earth, Mars and Venus)

February, 1996, Dept. of Geology, Bridgewater State College, Bridgewater, Massachusetts (Volcanism on the terrestrial planets)

October, 1995, Dept. of Geological Sciences, Brown University, Providence, Rhode Island (Exploration of submarine volcanoes)

July, 1995, IUGG, Boulder, Colorado (Submarine lava flow morphologies and effusion rates)

November, 1994, University of Florida, Dept. of Geology, Gainesville, Florida (Volcanism in the Solar System)

#### **PUBLIC OUTREACH**

April, 2018, Flash Forward podcast interview about the end of the world (see <https://www.flashforwardpod.com/2018/04/10/fire-from-the-deep/>)

October, 2017, “Supervolcano” planetarium show at Williamsville North High School Planetarium, Williamsville NY

December, 2016, Buffalo Niagara Nature Club, Fort Erie, Ontario (Asteroid impacts on Earth)

September, 2016, Western New York STEM Forum, University at Buffalo, Buffalo NY (Submarine volcanism)

October, 2015, Royal Astronomical Society of Canada (Niagara Centre), Niagara Falls, Canada (Volcanism in the Solar System)

February, 2015, Niagara Falls Nature Club, Niagara Falls, Canada (Submarine volcanism)

January, 2015, The Park School, Snyder, NY (Geology of the Galapagos Islands and the Galapagos Spreading Center)

February, 2014, Niagara Falls Nature Club, Niagara Falls, Canada (Volcanoes)

October, 2012, Casey Middle School, Williamsville, NY (Exploring the Moon)

February, 2012, Buffalo Astronomical Association, Buffalo, NY (Mars: New Paradigms for an Old Planet)

January, 2012, Casey Middle School, Williamsville, NY (Volcanoes and Culture)

May, 2009, Buffalo Geologic Society Monthly Meeting, Buffalo, NY (Exploring undersea volcanoes with a deep-submergence vehicle)

April, 2009, SUNY-Oneonta, Department of Earth Sciences, Oneonta, NY (Mars Exploration)

April, 2009, Maple East Elementary School, Second Grade, Williamsville, NY (Exploring Submarine Volcanoes)

November, 2008, Buffalo Geologic Society Monthly Meeting, Buffalo, NY (The Geology of Mars and Earth)

May, 2008, University at Buffalo Phi Beta Kappa Initiation Ceremony, Buffalo, NY (Diving in the Dark: Exploring Submarine Volcanoes)

May, 2008, Maple East Elementary School, First Grade, Williamsville, NY (Every Rock Tells a Story)

November, 2008, Buffalo Geologic Society Monthly Meeting, Buffalo, NY (The Geology of Mars and Earth)

April, 2008, Maple East Elementary School, Williamsville, NY (What does a Geologist Do?)

April, 2007, Maple East Elementary School, Williamsville, NY (Geology as a Career)

March, 2007, Maple East Elementary School, Williamsville, NY (Geology of the Solar System)

January, 2007, Hamburg Natural History Society, Hamburg, NY, Public Lecture (Diving in the Dark: Exploring mid-ocean ridges using a submarine)

December, 2006, Western New York Science and Technology Forum, University at Buffalo, Buffalo, NY (The New Mars)

April, 2006, American Association of University Women's « Tech Savvy » outreach to inspire girls about science at D'Youville College (Why volcanoes erupt)

March, 2006, Maple East Elementary School, Williamsville, NY (Identifying Rocks and Minerals)

March, 2006, University of Toronto's Astronomy and Space Exploration Society (Martian Dating)

April, 2005, Maple East Elementary School, Williamsville, NY (What does a geologist do?)

October, 2005, Western New York Science and Technology Forum, Buffalo, NY (The Science Behind the Tsunami)

2005: Taught geology to 1<sup>st</sup> graders at Maple East Elementary School, Williamsville, NY.

December, 2004, Western New York Science and Career Symposium (The New Faces of Mars)

2004: Taught planetary geology to kindergarteners at Maple East Elementary School, Williamsville, NY.

March, 2003, “Career Day” speaker at Spencerport High School, Spencerport, New York (What does a volcanologist do?)

April, 2003, Cutting Edge Lecture Series, SUNY-Buffalo, Buffalo, New York (Space Odyssey 2002: Volcanoes in the Solar System)

May, 2003, Field Trip Leader for Northeastern Section Meeting of the National Association of Geoscience Teachers (Glacial geology of western New York)

June, 2002, Hills Elementary School, Hills, Iowa (Volcanoes in the Ocean)

November, 2002, Rochester Academy of Science Annual Meeting, SUNY-Brockport, New York (Exploration of submarine volcanoes)

September, 2000, Clarence Elementary School, Clarence, New York (Studying volcanoes on land and sea)

1999-2000: Lectured to individual classes and groups of classes at Clarence Elementary School, Clarence, New York, on submarine exploration, terrestrial volcanism and volcanoes in the solar system.

1998 – 1999: Worked with gifted elementary school students (via email) at Hills Elementary School, Hills, Iowa, on submarine geology and biology.

#### **TEACHING EXPERIENCE AT THE UNIVERSITY AT BUFFALO**

GLY 101 Natural Hazards (lecture)

GLY 101 – 102 Global Environmental Science (laboratory)

GLY 103-104-105 Introductory geology for majors, plus laboratory

GLY 106 Geological Mapping Techniques

GLY 137 Dinosaurs

GLY 206 Geological Communications (new course Spring 2017, offered as a “Communications Literacy 2” course to fulfill the new general education requirements)

GLY 325 Geophysics

GLY 407/507 Geological Field Training

GLY 419/519 Extraterrestrial Volcanism (new course first taught Spring 2002)

GLY 424/524 Magmatic Plumbing (new course first taught Spring 2001)

GLY 431/531 Volcanology (team-taught with Dr. M.F. Sheridan or Dr. E. Calder)

GLY 443/543 Marine Geology (team-taught with Dr. R. Jacobi)

GLY 454/554 Topics in Planetary Geosciences (new course first taught Fall 2004)

GLY 577 Topics in Advanced Volcanology (new course first taught Fall 2009)

GLY 597 Volcanology Seminar

UE 142 Undergraduate Research Academy Seminar

UE 143 Advanced Undergraduate Research Academy Seminar



## PROFESSIONAL ACTIVITIES

### *Elected Offices Held*

Chair, Commission on Volcano Ice Interactions, International Association of Volcanology and Chemistry of Earth's Interior (IAVCEI), 2013-14.

Vice-Chair, Commission on Volcano Ice Interactions, International Association of Volcanology and Chemistry of Earth's Interior (IAVCEI), 2012-13.

Secretary, Commission on Volcano Ice Interactions, International Association of Volcanology and Chemistry of Earth's Interior (IAVCEI), 2011-12.

Chair, Planetary Geology Division of the Geological Society of America, 2002 – 2003.

First Vice-Chair, Planetary Geology Division of the Geological Society of America, 2001 – 2002.

Second Vice-Chair, Planetary Geology Division of the Geological Society of America, 2000 – 2001.

Secretary/Treasurer, Planetary Geology Division of the Geological Society of America, 1998 - 2000.

### *Sessions Chaired and Organized at National and International Meetings*

Co-Chair and organizer for the 48<sup>th</sup> Lunar and Planetary Science Conference in Houston, TX, March 19 – 24, 2017. Special session “Large Igneous Provinces in the Solar System.” Co-chair R. Ernst, Carleton University, Ottawa, Ontario, Canada

Co-Chair and organizer for the Geological Society of America Annual Meeting in Denver, CO, Sept. 25 – 28, 2016. Session T166: “Large Igneous Provinces (LIPs) in the Solar System.” Co-chair R. Ernst, Carleton University, Ottawa, Ontario, Canada.

Co-chair and organizer for the General Assembly of the International Association of Volcanology and Chemistry of the Earth's Interior (IAVCEI), Reykjavik, Iceland, August 18 – 22, 2008. Session 3a: “Fire and Ice: Volcanism and Cryovolcanism in the Solar System.” Co-Chairs R. Lopes (Jet Propulsion Laboratory), D. Rothery (The Open University) and Th. Thorsteinsson (National Energy Authority, Iceland).

Co-chair for Northeast Geological Society of America session (“Session No. 34: Advances in Planetary Geology: Image Analysis, Lab Results, and Analog Studies (Posters)”), March 27 – 29, 2008, Buffalo, NY

Co-Chair and advocate of Geological Society of America Pardee Keynote Symposium (“There and Back Again: Terrestrial Analogs for Extraterrestrial Problems”) for Fall GSA meeting, Denver, CO, October 26-30, 2002.

Co-Chair and advocate of American Geophysical Union topical session (“Advances in Modeling Flow Processes: Volcanoes, Floods, Impacts, and Mass Movements”) for Fall AGU, San Francisco, CA, December 10-14, 2001.

Co-Chair and advocate of Geological Society of America Pardee Keynote Symposium (“The Search for Water in the Solar System”) for Fall GSA meeting, Boston, MA, November 4 - 8, 2001.

Co-chair and advocate of Geological Society of America theme session ("From Deep Oceans to Deep Space: Volcanism in Unique Professional Activities (Cont'Environments)") for Fall GSA meeting, Salt Lake City, UT, October 28-31, 1997.

Co-Chair of workshop for Geoscience Educators ("Advances in Planetary Geosciences") at Fall GSA Meeting, Seattle, WA. Workshop sponsored by the National Science Foundation and National Association of Geoscience Teachers.

*National Conferences Chaired and Organized*

Co-Chair and Co-Organizer, NASA Annual Meeting of Planetary Mappers, Planetary Science Institute, Tucson, AZ, June 28 – 29, 2007. Co-Chairs: L. Bleamaster (Trinity University), R.S. Saunders (NASA Headquarters), K. Tanaka (USGS Flagstaff).

Chair and organizer of an international conference ("Volcanic Flows and Falls") to honor the career of Mike Sheridan, Department of Geology, University at Buffalo, Buffalo, NY, May 11-12, 2006.

Chair and Organizer, NASA Annual Meeting of Planetary Mappers, Northwest Nazarene University, Nampa, ID, June 30 – July 2, 2006.

Chair and Organizer, NASA Annual Meeting of Planetary Mappers, Center for Earth and Planetary Science, National Air and Space Museum, Washington, DC, June 23 – 24, 2005.

Chair and Organizer, NASA Annual Meeting of Planetary Mappers, USGS Astrogeology Branch, Flagstaff, AZ, June 17 – 19, 2004.

Chair and Organizer, NASA Annual Meeting of Planetary Mappers, Brown University, Providence, RI, June 19 – 20, 2003.

Chair and Organizer, NASA Annual Meeting of Planetary Mappers, Mars Flight Facility, Arizona State University, Tempe, AZ, June 21 – 22, 2002.

East Coast Volcanology Gathering, National Air and Space Museum, Washington, DC, October 25-26, 2001.

East Coast Volcanology Gathering, National Air and Space Museum, Washington, DC, November 19-20, 1999.

Co-organizer and host, NASA Planetary Geology and Geophysics Mapping Program Meeting, University at Buffalo, June 24-26, 1999.

East Coast Volcanology Gathering, National Air and Space Museum, Washington, DC, November 18-19, 1998.

East Coast Volcanology Gathering, National Air and Space Museum, Washington, DC, November 17-19, 1997.

East Coast Volcanology Gathering, National Air and Space Museum, Washington, DC, November 13 - 14, 1996.

*Appointed and Volunteered Activities (outside of UB)*

**2018**

Campus Representative, Geological Society of America, 2002 to present.

Judge, Stephen E. Dwornik "Best Student Paper Award," 49<sup>th</sup> Lunar and Planetary Science Conference, March 19-23, Houston, TX, 2018.

Member, 49<sup>th</sup> Lunar and Planetary Science Conference Program Committee.

**2017**

Judge, Stephen E. Dwornik “Best Student Paper Award,” 48<sup>th</sup> Lunar and Planetary Science Conference, March 19-24, Houston, TX, 2017.

Member, 48<sup>th</sup> Lunar and Planetary Science Conference Program Committee.

**2016**

Judge, Stephen E. Dwornik “Best Student Paper Award,” 47<sup>th</sup> Lunar and Planetary Science Conference, March 13 – 18, Houston, TX, 2016.

**2015**

Member, NASA Planetary Geology and Geophysics Planetary Cartography Working Group Geologic Mapping Standards Panel, 2008 – 2015.

**2014**

Member, NASA Planetary Mission Senior Review Panel, Mars Sub-Panel (Clive Neal, U. Notre Dame, Chair) May 2014.

Group Chief, Solar System Volcanism, NASA Review Panel for Solar System Working Group, October 2014.

**2008**

Chair, NASA Planetary Geology and Geophysics Planetary Cartography Working Group Geologic Mapping Standards Panel, 2002 – 2008.

**2007**

Member, NASA Planetary Geology & Geophysics Management Oversight Working Group, 2004 – 2007.

**2006**

Member, 38<sup>th</sup> Lunar and Planetary Science Conference Program Committee, Houston, TX, January 16 – 18, 2006.

Workshop convener and leader, National Association of Geoscience Teachers/National Science Foundation “Cutting Edge” workshop on Discoveries on Mars, Arizona State University, Tempe, Arizona, April 27 – 30, 2006.

Member, 37<sup>th</sup> Lunar and Planetary Science Conference Program Committee, January 17 – 19, Houston, TX, 2006.

Judge, Stephen E. Dwornik “Best Student Paper Award,” 37<sup>th</sup> Lunar and Planetary Science Conference, March 13 – 18, Houston, TX, 2006.

**2004**

Workshop leader, National Association of Geoscience Teachers/National Science Foundation “Cutting Edge” workshop on Course Design, summer 2004.

**2003**

Member, Joint Technical Program Committee of the Fall Meeting for the Geological Society of America, 2001-2003.

Judge, Stephen E. Dwornik Planetary Geosciences Student Paper Award Judging Panel (Geological Society of America, Planetary Geology Division), 1997 – 2003.

**2002**

Member, NASA Mars Data Analyses Program, proposal review panel, November 14-17, 2002.

Member, NASA Planetary Geology and Geophysics Planetary Cartography Working Group Geologic Mapping Standards Panel, 1996 - 2002.

**1999**

Member, 31st Lunar and Planetary Science Conference Program Committee, January 19-21, Houston, TX, 1999.

**1997**

Member, 29th Lunar and Planetary Science Conference Program Committee, January 21-23, 1997.

*Career Development*

1 May, 2015: Attended workshop “Writing in the Disciplines: Developing Communicative Literacy 2,” University at Buffalo.

April 21, 2014: AGI/AGU sponsored webinar on “The Future of Field Camps”

May 2, 2013: Leica microscopy user group meeting, Buffalo State College, Buffalo, NY.

March 27, 2013: webinar sponsored by SERC and the Cutting Edge (NSF and NAGT) on “Concept sketches in undergraduate intro courses.”

May 12, 2012: Leica microscopy user group meeting, Buffalo, NY.

May 17 – 21, 2010: Attended “National Center for Case Study Teaching in Science,” <http://sciencecases.lib.buffalo.edu/cs/training/workshops/>.

June 2 – 4, 2009: Attended “Strengthening your geoscience program: A practical workshop with ideas and examples,” sponsored by NSF and NAGT ([http://serc.carleton.edu/departments/program\\_revision/index.html](http://serc.carleton.edu/departments/program_revision/index.html)).

August, 2009: Attended UB Teaching & Learning Center workshop on Clickers.

February, 2009: Attended UB Teaching & Learning Center workshop on Technology in the Classroom.

July, 2007: Attended Council on Undergraduate Research (CUR) Institute on Mentorship, Collaboration, and Undergraduate Research in the Social Sciences and Humanities at Carthage College, Kenosha, WI.

December, 2002 to 2007: Member of The Cutting Edge Workshop Series Advisory Panel, a 5-year program sponsored by the National Association of Geoscience Teachers and the National Science Foundation, designed to improve geoscience education at the college/university level.

July, 1999, Attended “Early Career Faculty in the Geosciences” workshop, sponsored by the National Association of Geoscience Teachers and the National Science Foundation, Bozeman, Montana.

**FELLOWSHIPS AND AWARDS**

Distinguished Service Award, Planetary Geology Division of the Geological Society of America, September 2016.

Fellow, Geological Society of America, elected May 2012.

Distinguished Lecturer, National Association of Geoscience Teachers (NAGT), 2006 – 2009.

RIDGE post-doctoral fellowship, 1995-1997.

First Place, Stephen E. Dwornik Planetary Geoscience Best Student Paper award, for research presented at the 25th Lunar and Planetary Science Conference, Houston, Texas. 1994.

Honorable mention, Stephen E. Dwornik Planetary Geoscience Best Student Paper, for research presented at the 23rd Lunar and Planetary Science Conference, Houston, Texas, 1992.

"Most Outstanding Geology Student" at Brown University, 1990.

#### **UNIVERSITY SERVICE**

Member, Undergraduate Writing Council, 2015 – present, Alex Reid (English), Chair.

Member, Undergraduate Research Exploration Academy Advisory Board, 2009 – present.

Member, Center for Undergraduate Research and Creative Activities (CURCA) Grant Award Committee, 2008 – present.

Member, Nancy Welch Awards Committee, 2008 – present.

Member, Special Majors Committee (Mike Kustreba, chair), 2001 – present.

Participant, WISE Women in STEM discussion panel, August 2016.

Participant, Annual Women in STEM discussion panel, April 2016.

Member, Dean's Summer Task Group, 2009 – 2014.

Member, Special Majors Committee, University at Buffalo, 1999- present.

Participant, Women in Academia Panel, convened by Undergraduate Research Exploration Academy, May 2, 2010.

Judge, Sigma Xi Poster Competition, April 7, 2009.

Member, Presidential and Dean's Fellowship Committee, 2008 – 2009 academic year.

Academic Director, Undergraduate Research Exploration Academy, 2008 – 2009 academic year.

Master Scholar, Undergraduate Research Exploration Academy, January 2007 – May, 2008.

College of Arts and Sciences representative to Faculty Senate, University at Buffalo, 1999 – 2004.

Member, Assistant Vice President of Research search committee, University at Buffalo, 2000 – 2002.

#### **DEPARTMENT SERVICE**

Acting Director of Graduate Studies, 2014-2015.

Chair, Faculty Search Committee, Spring 2014.

Chair, Awards Committee, 2013-present.

Member, Space Committee, 2012-2013.

Member, Undergraduate Curriculum Redesign Committee, 2010 – 2012.

Ex officio member, Executive Committee, 2008 – 2009 academic year.

Chair, Graduate Studies Committee (a.k.a. "Director of Graduate Studies"), 2005 – 2009.

Chair, Course Evaluation Committee, Department of Geology, 2000 - present.

Member, faculty search committees, Department of Geology: served on 5 committees since 1998.

## **STUDENTS ADVISED**

### *Undergraduate Summer Interns*

Sophie Goliber, 2017: "Geologic investigations of Lonar crater, India" (NASA Planetary Geology and Geophysics Undergraduate Research Program, co-advised with Dr. Shawn Wright, Planetary Science Institute)

Hilary Gittings, 2001: "Geologic mapping of MTM quadrangle -20257: The Tyrrhena Patera Region of Mars" (NASA Planetary Geology and Geophysics Undergraduate Research Program)

Aisha Morris, 1999: "On the origin of unique ridges in Hesperia Planum, Mars" (NASA Planetary Geology and Geophysics Undergraduate Research Program)

Jennifer Mercer, 1997: "Quantifying volcanic morphology: Submarine and subaerial comparisons" (Woods Hole Oceanographic Institution Undergraduate Summer Intern)

### *Undergraduate Independent Study at University at Buffalo*

Adam Carey, 2002 – 2003: "Lava flow morphologies at the Southern East Pacific Rise"

Karen Makey, 2003 – 2005: "Geologic mapping of fluvial features in Western Hesperia Planum, Mars"

Kristen Paris, 2005 - 2006: "Astrobiology at Gusev crater, Mars"

Elise Rumpf, 2005 – 2006: "Impact crater geology on Venus"

Neil Terry, 2007 – 2008: "Mawrth Vallis, Mars"

Matthew Wendt, 2012: Planetary geoscience

Sophie Goliber, 2016-2017: "A geologic map of a portion of Hesperia Planum, Mars"

### *Master's Students*

Sare, Hadarou, M.S. 2019 (expected): "Dust devil tracks in Malea Planum, Mars: Variations in time and space."

Schiff, Nicholas, M.S. 2019 (expected): "The geology of Albus Mons' summit region, Mars."

Smith, Tyler, M.S. 2019 (expected): "Inflated lava flows at Rock Corral Butte, Eastern Snake River Plain."

Patrick Suter, M.S. 2019 (expected): "Geology of the western margin of Oceanus Procellarum, the Moon."

Ian Dunning, M.S. 2018 (expected): "The former extent of the Medusae Fossae Formation, Mars."

Paul Moretti, M.S., 2017: "Ejecta features in Martian flat central-pit impact craters as indicators of subsurface water, a component in central-pit impact crater formation."

Christian Venturino, M.S., 2016: "Wrinkle ridges in Syrtis Major, Mars."

Iana Shmelkina, M.S., 2016: "Quantitative comparisons of Titan's drainage networks with those on Earth and Venus."

Elisabetta Panza, M.S., 2016: "Erosional patterns of Tyrrhenus Mons, Mars." (INVOGE exchange student; in Italy 2014-2015.)

David Narkovic, M.S., 2014: "Origin of depressions on Titan."

Carolyn Roberts, M.S., 2014: "Lunar sinuous rilles in the Marius Hills and Aristarchus Plateau regions of the Moon."

Dianna Miller, M.S., 2012: "Shield plains and shield fields on Venus: Comparisons and Contrasts."

Andrew J. Rankin, M.S., 2012: "Geologic hazards at Sabancaya Volcano, Southern Peru."

Mickael Smolen, M.S., 2012: "Understanding pit crater formation on Mars through analog experiments." (International INVOGE student; joint advising with Dr. Van de Wryes, Clement, France)

Kenneth W. Christle, M.S., 2011: "Formation of subaerial lava pillars during the 1782-1784 eruption at Laki, Iceland."

Trevelyn Lough, M.S. 2011: "Geologic mapping of the Aristarchus plateau region on the Moon."

Daniel Krysak, M.S. 2011: "Geologic mapping of Apollinaris Patera, Mars."

Emily Laity, M.S., 2009: "Distribution of lava pillars along the Juan de Fuca Ridge and the East Pacific Rise."

Kelly Shockey, M.S., 2009: "The spatial distribution of shield volcanoes within fields on Earth, Venus and the Moon."

Joel Allen, M.S., 2007: "Pedestal craters and the erosion of the Medusa Fossae Formation, Mars"

Brett Burkett, M.S., 2007: "Amphitheatre formation at Hualca Hualca volcano, Peru"

Melissa Farley, M.S., 2007: "Evolution of Western Hesperia Planum, Mars"

Tessa Krueger-Jones, M.S., 2007: "Quantitative analyses of hydrologic activity in the Hesperia Planum region of Mars"

Jennifer Lougen, M.S., 2007: "Loki Patera, Io: Laboratory simulations of the lava lake hypothesis"

Karen Makey, M.A., 2007: "Lava flow morphologies on Earth and Mars"

Jennifer Somerville, M.A., 2007: "Geologic mapping of Amphitrites and Peneus Paterae, Mars"

Sarah Black, M.S., 2006: "Geologic relations of Ionian paterae"

Brian Meyer, M.A., 2003: "Lava flow field emplacement at Tyrrhena Patera, Mars"

Leslie Lipkaman, M.S., 2003: "Fractal margins of lava flows on Earth, Mars and Venus"

Cheryl Goudy, M.S., 2002: "Wrinkle ridge formation on Hesperia Planum, Mars"

Nick Warner, M.S., 2002: "Textured lava flows on Earth, Mars and Venus"

Donelle Adams, M.A., 2000: "Cooling the young sheet flow on the Juan de Fuca Ridge"

#### *Ph.D. Students*

William (Brent) Garry, 2006: "Formation and evolution of lava channels: Laboratory simulations and field analyses"

Abigail Semple, 2008: “Emplacement of large-volume evolved lava flows”

*External Ph.D. Committees*

J. Christopher Stant, Ph.D., 2019 (expected), Syracuse University, Dr. Jeffrey Karson, primary advisor.

J. Timothy McClinton, Ph.D. 2014, University of South Carolina, Columbia, S.C., Dr. Scott White, primary advisor.

J. Hungerford, Ph.D., 2013, University of Pittsburgh, Dr. Michael Ramsey, primary advisor.

**PROFESSIONAL AFFILIATIONS**

Member, Sigma Xi, since 1990.

Member, Geological Society of America (GSA), since 1991.

Member, American Geophysical Union (AGU), since 1992.

Member, Association for Women in Geosciences (AWG), since 1995.

Member, International Association of Volcanology and Chemistry of Earth's Interior (IAVCEI), since 1996.

Member, National Association of Geoscience Teachers (NAGT), since 2002.

**SEA EXPERIENCE**

Participant/diver/Co-Investigator in *HOV Alvin-R/V Atlantis* volcanology cruise (“GRUVEE Cruise”) to the Galapagos Spreading Center, March-April, 2010.

Participant/diver in *DSV Alvin-R/V Atlantis* volcanology cruise to the southern East Pacific Rise, 17°30' – 18°30' S (“STOWA Cruise”), January-March, 1999.

Participant/diver in *DSV Alvin-R/V Atlantis II* gravity cruise to the northern East Pacific Rise, 9°50'N, November, 1995.

Participant/diver in *DSV Alvin-R/V Atlantis II* AdVenture VI cruise to East Pacific Rise near 10°N, August, 1994.

Participant/diver in *DSV Alvin-R/V Atlantis II* AdVenture V cruise to East Pacific Rise near 10°N, April, 1994.

Participant in *R/V Discoverer* cruise to the Juan de Fuca Ridge, August, 1994.

**PUBLICATIONS**

**Refereed Journal Articles (by year)**

*An asterix (\*) indicates a student author.*

**2018**

C.E. Roberts\* and T.K.P. Gregg, Rima Marius, the Moon: Formation of lunar sinuous rilles by constructional and erosional processes, *Icarus*, doi: 10.1016/j.icarus.2018.02.033

**2017**

Gregg, T.K.P., Patterns and processes: Subaerial lava flow morphologies: A review, *J. Volcanol. Geotherm. Res.*, doi: 10.1016/j.jvolgeores.2017.04.022.



Gregg, T.K.P., D.A. Crown and M.A. Farley\*, MTMs -15252 and -20252: Geologic map of western Hesperia Planum, Mars, USGS Misc. Inv. Series, 1:1,000,000,000, in revision.

## 2015

Gregg, T.K.P., 2015, Planetary tectonics and volcanism: The inner Solar System, in *Treatise on Geophysics*, 2<sup>nd</sup> Edition, G.E. Schubert, ed., Elsevier, pp. 307-325.

## 2013

Gregg, T.K.P. and K. Christle\*, Subaerial lava pillars in the Skaelingar region of Iceland: A unique form of non-explosive lava-water interaction, *J. Volcanol. Geotherm. Res.* 264:36-48.

## 2012

Colman, A., J.M. Sinton, S.M. White, J. Timothy McClinton, J.A. Bowles, K.H. Rubin, M.D. Behn, B. Cushman, D.E. Eason, T.K.P. Gregg, K. Gronvold, S. Hidalgo and J. Howell, Effects of variable magma supply on mid-ocean ridge eruptions: Constraints from mapped lava flow fields along the Galapagos Spreading Center, *Geochem. Geophys. Geosys.* 13(8), Q08014, doi: 10.1029/2012GC004163.

## 2008

Gregg, T.K.P. and R.M. Lopes, Lava lakes on Io: New perspectives from modeling, *Icarus* 194(1):166-172.

Valentine, G.A. and T.K.P. Gregg, Continental basaltic volcanoes: Processes and problems, *J. Volcanol. Geotherm. Res.* 177(4):857-873.

## 2007

Garry, W.B.\*, J.R. Zimbelman and T.K.P. Gregg, Morphology and emplacement of a long channeled lava flow near Ascræus Mons volcano, Mars. *J. Geophys. Res.* 112, E08007, doi:10.1029/2006JE002803.

Gregg, T.K.P., J.P. Briner and K.N. Paris\*, Ice-rich terrain in Gusev Crater, Mars? *Icarus* 192(2):348-360.

Williams, D.A., R. Greeley, W. Zuschneid, S.C. Werner, G. Neukum, D.A. Crown, T.K.P. Gregg, K. Gwinner and J. Raitala, 2007, Hadriaca Patera: Insights into its volcanic history from Mars Express High Resolution Stereo Camera, *J. Geophys. Res.* 112(E10), doi: 10.1029/2007JE002924.

## 2006

Garry, W.B.\*, T.K.P. Gregg, S.A. Soule and D.J. Fornari, Formation of submarine lava channel textures: insights from laboratory simulations, *J. Geophys. Res.* 111(B03104), doi:10.1029/2005/JB003796.

Gregg, T.K.P. and M.A. Farley\*, Mafic pyroclastic flows at Tyrrhena Patera, Mars: Constraints from observations and models, *J. Volcanol. Geotherm. Res.* 155:81-91.

## 2005

Goudy, C.L., R.A. Schultz and T.K.P. Gregg, Coulomb stress changes in Hesperia Planum, Mars, reveal regional thrust fault reactivation, *J. Geophys. Res.* 110 (E10):E10005.

## 2004

Gregg, T.K.P. and L.P. Keszthelyi, The emplacement of pahoehoe toes: Field observations and comparisons to laboratory simulations, *Bull. Volcanol.* 66:381-391.

## 2003

Gregg, T.K.P. and D.K. Smith, Volcanic investigations of the Puna Ridge, Hawai'i: Relations of lava flow morphologies and underlying slopes, *J. Volcanol. Geotherm. Res.* 126:63-77.

Warner, N.H.\* and T.K.P. Gregg, Evolved Lavas on Mars? Observations from Southwest Arsia Mons and Sabancaya Volcano, Peru, *J. Geophys. Res.*, 10.129/2002JE001969.

## 2002

Parfitt, E.A., T.K.P. Gregg and D.K. Smith, A comparison between subaerial and submarine eruptions at Kilauea Volcano, Hawaii: Implications for the thermal viability of lateral feeder dikes, *J. Volcanol. Geotherm. Res.* 113:213-242.

Sinton, J., E. Bergmanis, K. Rubin, R. Batiza, T.K.P. Gregg, K. Gronvold, K.C. Macdonald and S.M. White, Volcanic eruptions on mid-ocean ridges: New evidence from the superfast spreading East Pacific Rise, 17°-19°S, *J. Geophys. Res.* 197:10.1029/2000JB000090.

## 2001

Sakimoto, S.E.H. and T.K.P. Gregg, Channeled flow: Analytic solutions, laboratory experiments, and applications to lava flows, *J. Geophys. Res.* 106, 8629-8644.

## 2000

Gregg, T.K.P. and J.H. Fink, A laboratory investigation into the effects of slope on lava flow morphology, *J. Volcanol. Geotherm. Res.* 96:145-159.

Gregg, T.K.P., D.J. Fornari, M.R. Perfit, W.I. Ridley and M.D. Kurz, Using submarine lava pillars to record mid-ocean ridge eruption dynamics, *Earth Planet. Sci. Lett.* 178:195-214.

## 1999

Chadwick, W.W., Jr., T.K.P. Gregg, and R.W. Embley, Submarine lineated sheet flows: A unique lava morphology formed on subsiding lava ponds, *Bull. Volcanol.* 61:194 - 206.

## 1998

Fornari, D.J., R.M. Haymon, M.R. Perfit, T.K.P. Gregg and M.H. Edwards, 1998, Axial summit trough of the East Pacific Rise 9°N to 10°N: Geological characteristics and evolution of the axial zone on fast-spreading mid-ocean ridges, *J. Geophys. Res.*, 103:9827-9855.

Fornari, D.J., T. Shank, K.L. Von Damm, T.K.P. Gregg, R.M. Haymon, M. Lilley, G. Levai, A. Bray, S. Baron, M.R. Perfit and R. Lutz, 1998, A dike intrusion or crustal fracturing event inferred from time-series temperature measurements at high-temperature hydrothermal vents on the East Pacific Rise crest 9° 49' -51'N, *Earth Planet. Sci. Lett.*

Gregg, T.K.P., J.H. Fink, and R.W. Griffiths, 1998, Formation of multiple fold generations on lava flow surfaces: Influence of strain rate, cooling rate, and lava composition, *J. Volcanol. Geotherm. Res.*, 80:281-292.

Gregg, T.K.P., D.A. Crown and R. Greeley, 1998, Geologic map of MTM Quadrangle - 20252 Tyrrhena Patera Region of Mars, *U.S. Geol. Survey, I-2556*, scale 1:500,000.

Gregg, T.K.P. and D.J. Fornari, 1998, Limiting the lengths of submarine lava flows through numerical modeling, *J. Geophys. Res.*, 103:27,517-27,531.

## 1996

Gregg, T.K.P. and W.W. Chadwick, Jr., 1996, Inflated submarine lava flows: A model for the formation of lava pillars, *Geology* 24:981-984.

Gregg, T.K.P., D.J. Fornari, M.R. Perfit, R.M. Haymon and J.H. Fink, 1996, Rapid emplacement of a mid-ocean ridge lava flow on the East Pacific Rise at 9° 46'-51'N, *Earth Planet. Sci. Lett.*, 144:E1-E7.

Gregg, T.K.P. and J.H. Fink, 1996, Quantification of extraterrestrial lava flow effusion rates through laboratory simulations, *J. Geophys. Res.*, 101, 16,891-16,900.

Gregg, T.K.P. and S.N. Williams, 1996, Explosive mafic volcanoes on Mars and Earth: Deep magma sources and rapid rise rate, *Icarus* 122:397-405.

#### **1995**

Gregg, T.K.P. and J.H. Fink, 1995, Quantification of submarine lava-flow morphology through analog experiments, *Geology* 23:73-76.

#### **1994**

Gregg, T.K.P. and R. Greeley, 1994, "Formation of Venusian canali: Considerations of lava types and their thermal behaviors": A reply, *J. Geophys. Res.* 99:17,165-17,167.

#### **1993**

Gregg, T.K.P. and R. Greeley, 1993, Formation of venusian canali: Considerations of lava types and their thermal behaviors, *J. Geophys. Res.* 98:10,873-10,882.

### **Books Edited**

*Environmental Effects on Volcanic Eruptions: From Deep Oceans to Deep Space*, J.R. Zimbelman and T.K.P. Gregg, eds., Kluwer Academic/Plenum Publishing, New York, pp.260, 2000.

*Volcanic Worlds: Exploring the Solar System's Volcanoes*, R.M.C. Lopes and T.K.P. Gregg, eds., Praxis Press, New York, pp. 236, 2004.

*Modeling Volcanic Processes: The Physics and Mathematics of Volcanism*, S.A. Fagents, T.K.P. Gregg and R.M.C. Lopes, eds., Cambridge University Press, pp. 421, 2013.

### **Book Chapters**

*All chapters are peer-reviewed by at least 2 other researchers in the field.*

#### **2013**

Gregg, T.K.P., Deep sea eruptions, in *Modeling Volcanic Processes: The Physics and Mathematics of Volcanism*, S.A. Fagents, T.K.P. Gregg and R.M.C. Lopes, eds., Cambridge University Press, pp. 258 – 274.

Lopes, R.M.C., S.A. Fagents, K. Mitchell and T.K.P. Gregg, Planetary volcanism, in *Modeling Volcanic Processes: The Physics and Mathematics of Volcanism*, S.A. Fagents, T.K.P. Gregg and R.M.C. Lopes, eds., Cambridge University Press, pp. 384 – 413.

#### **2007**

Gregg, T.K.P., 2007, Lava-sediment interactions on Earth and Mars: Evidence and consequences, in M. Chapman, ed., *The Geology of Mars: Evidence from Earth-Based Analogs*, Cambridge University Press, Cambridge, UK, pp. 211-231.

#### **2004**

Gregg, T.K.P., Volcanism on the Sea Floor, in *Volcanic Worlds: Volcanism in the Solar System*, R. Lopes and T.K.P. Gregg, eds., Praxis Press, New York.

#### **2003**

Farr, T.G., S. Arcone, R.E. Arvidson, V. Baker, N.G. Barlow, D. Beaty, M.S. Bell, D.D. Blankenship, N. Bridges, G. Briggs, M. Bulmer, F. Carsey, S.M. Clifford, R.A. Craddock, P.W. Dickerson, N. Duxbury, G.L. Galford, J. Gravin, J. Grant, J.R. Green, T.K.P. Gregg, E. Guinness, V.L. Hansen, M.H. Hecht, J. Holt, A. Howard, L.P. Keszthelyi, P. Lee, P.D. Lanagan, R.C.F. Lentz, D.W. Leverington, G.R. Olhoeft, G.G. Ori, P. Paillou, J.F. Reilly II, J.W. Rice, Jr., C.A. Robinson, M. Sheridan, K. Snook, B.J. Thomson, K. Watson, K. Williams and K. Yoshikawa, Terrestrial analogs to Mars, in *The Future of Solar System Exploration, 2003-20013: Community Contributions to the NRC Solar System Exploration Decadal Survey*, Sykes, M.V., ed., Astronomical Society of the Pacific, San Francisco, CA, pp. 35-76.

## 2000

Grosfils, E.B., J. Aubele, L. Crumpler, T.K.P. Gregg and S. Sakimoto, 2000, Volcanism on Earth's seafloor and Venus, in *Environmental Effects on Volcanic Eruptions: From Deep Oceans to Deep Space*, J.R. Zimbelman and T.K.P. Gregg, eds., Kluwer Academic/Plenum Publishing, New York, pp. 113-142.

Gregg, T.K.P. and J.R. Zimbelman, 2000, Volcanic vestiges: Pulling it together, in Zimbelman, J.R. and T.K.P. Gregg, 2000, *Environmental Effects on Volcanic Eruptions: From Deep Oceans to Deep Space*, Kluwer Academic/Plenum Publishing, New York, 260 pp.

Zimbelman, J.R. and T.K.P. Gregg, 2000, Volcanic diversity throughout the solar system, in *Environmental Effects on Volcanic Eruptions: From Deep Oceans to Deep Space*, J.R. Zimbelman and T.K.P. Gregg, eds., Kluwer Academic/Plenum Publishing, New York, pp. 1 – 8.

Zimbelman, J.R., S.A. Fagents, T.K.P. Gregg, C.R. Manley and S.K. Rowland, 2000, Subaerial terrestrial volcanism: Eruptions in our own backyard, in *Environmental Effects on Volcanic Eruptions: From Deep Oceans to Deep Space*, J.R. Zimbelman and T.K.P. Gregg, eds., Kluwer Academic/Plenum Publishing, New York, pp. 9 – 38.

## United States Geological Survey Open-File Reports

Gregg, Tracy K. P., K.L. Tanaka and D.A. Senske (editors), 2002, Abstracts of the Annual meeting of planetary geologic mappers, Open-File Report - U. S. Geological Survey, OF 02-0412, p. 55, 2002. Meeting: Annual meeting of planetary geologic mappers, Tempe, AZ, United States, June 21-22, 2002.

Gregg, T.K.P., K.L. Tanaka and R.S. Saunders (eds.), 2003, Abstracts of the annual meeting of Planetary Geologic Mappers, U.S. Geological Survey, OF 2004-1100. Meeting: Annual meeting of planetary geologic mappers, Providence, RI, United States, June 19-22, 2003.

Gregg, T.K.P., K.L. Tanaka and R.S. Saunders (eds.), 2004, Abstracts of the annual meeting of Planetary Geologic Mappers, U.S. Geological Survey, OF 2004-1289. Meeting: Annual meeting of planetary geologic mappers, Flagstaff, AZ, United States, June 23-24, 2004.

Gregg, T.K.P., K.L. Tanaka and R.S. Saunders, eds, 2005, Abstracts of the Annual Meeting of Planetary Geologic Mappers, Washington, DC, 2005, US Geol. Surv. Open-File Report 2005-1271, <http://pubs.usgs.gov/of/2005/1271/>.

Gregg, T.K.P., K.L. Tanaka and R.S. Saunders, eds., 2006, *Abstracts of the Annual Meeting of Planetary Geologic Mappers, Nampa, Idaho, 2006*, USGS Open-File Report 2006-1263, U.S. Geol. Survey.

Bleamaster, L.F., T.K.P. Gregg, K.L. Tanaka and R.S. Saunders, eds., 2007, Abstracts of the Annual Meeting of Planetary Geologic Mappers, Tucson, AZ, *U.S. Geol. Surv. Open-File Report 2007-1233* (<http://pubs.usgs.gov/of/2007/1233/ofr2007-1233.pdf>).

### **Extended Abstracts (by year)**

*These abstracts are at least 2 pages long and are peer-reviewed prior to acceptance.*

#### **2018**

Goliber, S.A.\* and T.K.P. Gregg, A plethora of planetary processes in southern Hesperia Planum, Mars: Water, ice and mass wasting, *Lun. Planet. Sci. Conf. 49*, Abstract #2444.

Dunning, I.T.\* , T.K.P. Gregg and J.R. Zimbelman, How big was it? The former extent of the Medusae Fossae Formation, Mars, *Lun. Planet. Sci. Conf. 49*, Abstract #2418.

#### **2017**

Goliber, S.A.\* , S.P. Wright and T.K.P. Gregg, Synthesis of 3-D, GPS, field data, and high-resolution imagery of Lonar Crater, India, *Lun. Planet. Sci. Conf. 48<sup>th</sup>*, Abstract #2715.

Gregg, T.K.P., Volcanic vents in Hesperia Planum, Mars: Sources for an extraterrestrial large igneous province, *Lun. Planet. Sci. Conf. 48<sup>th</sup>*, Abstract #1659.

Moretti, P.J.\* and T.K.P. Gregg, Variations in target porosity affect ejecta morphology of a martian central-pit impact crater, *Lun. Planet. Sci. Conf. 48<sup>th</sup>*, Abstract #2341.

#### **2016**

Gregg, T.K.P., 2016, Oh give me a home with a resurgent dome: Loki Patera, Io, *Lun. Planet. Sci. Conf. 47<sup>th</sup>*, Abstract #2517.

Green, J.E.\* , T.K.P. Gregg and S.E.H. Sakimoto, 2016, Distribution of small (<25 km) volcanoes in Martian northern plains, *Lun. Planet. Sci. Conf. 47<sup>th</sup>*, Abstract #2399.

Moretti, P.\* and T.K.P. Gregg, 2016, Do ejecta features support volatiles as a basis for central pit craters on mars? *Lun. Planet. Sci. Conf. 47<sup>th</sup>*, Abstract #2788.

Shmelkna, I.\* and T.K.P. Gregg, 2016, Morphometric analysis of valley networks and channels on Venus, *Lun. Planet. Sci. Conf. 47<sup>th</sup>*, Abstract #2814.

Venturino, C.S.\* and T.K.P. Gregg, 2016, Relative ages of wrinkle ridges in Syrtis Major, Mars, *Lun. Planet. Sci. Conf. 47<sup>th</sup>*, Abstract #2437.

Venturino, C.S.\* , D.J.P. Martin, F.E. McDonald, S. Paisarnsombat, E.S. Steenstra, S. O'Hara, A. Calzada-Diaz, S. Bottoms, M.K. Leader, K.K. Klaus, T.K.P. Gregg and D.A. Kring, 2016, Lunar pyroclastic soil mechanics and trafficability in the Schrodinger basin, *Lun. Planet. Sci. Conf. 47<sup>th</sup>*, Abstract #1676.

#### **2015**

Gregg, T.K.P., Large (>1 km) rayed craters in Hesperia Planum, Mars: What's the ejecta trying to say? *Lun. Planet. Sci. Conf. 46<sup>th</sup>*, Abstract #2442.

#### **2014**

Gregg, T.K.P., E. Panza\* and B. Buford\*, 2014, Can you miss what you don't see? Erosion patterns of lavas and ignimbrites on Earth and Mars, *Lun. Planet. Sci. Conf. 45<sup>th</sup>*, Abstract #2326.

## 2012

Miller, D.\* and T.K.P. Gregg, Geologic characteristics and stratigraphic relationships of shield fields versus shield plains on Venus, *Lun. Planet. Sci. Conf. 43<sup>rd</sup>*, Abstract #2311.

Roberts, C.\* and T.K.P. Gregg, Quantitative comparisons of lunar sinuous rilles in the Marius Hills and Aristarchus Plateau regions: Insights into formation and evolution, *Lun. Planet. Sci. Conf. 43<sup>rd</sup>*, Abstract #1685.

## 2011

Gregg, T.K.P. and D.J. Krysak\*, 2011, Apollinaris Mons, Mars: A new name and a new past, *Lun. Planet. Sci. Conf. 42<sup>nd</sup>*, Abstract #1922.

Lough, T.A.\* and T.K.P. Gregg, 2011, Assessment of geologic mapping techniques at Aristarchus plateau, the Moon, *Lun. Planet. Sci. Conf. 42<sup>nd</sup>*, Abstract #2013.

Miller, D.M.\* and T.K.P. Gregg, 2011, Characteristics and geologic relationships of shield fields versus shield plains on Venus, *Lun. Planet. Sci. Conf. 42<sup>nd</sup>*, Abstract #1550.

## 2010

Gregg, T.K.P. and D.A. Crown, 2010, Geologic mapping in the Hesperia Planum region of Mars, in L. Bleamaster III, K.L. Tanaka and M.S. Kelley, eds., *Abstracts of the annual meeting of planetary mappers, Flagstaff, AZ, June 2010*, NASA/CP-2010217041, pp. 30-31.

Lough, T.A.\* and T.K.P. Gregg, 2010, Geologic mapping of the Aristarchus plateau region on the Moon, *Lun. Planet. Sci. Conf. 41<sup>st</sup>*, Abstract #2370.

Lough, T.A.\*, T.K.P. Gregg and R. Aileen Yingst, 2010, Geologic mapping of the Aristarchus plateau region of the Moon, in L. Bleamaster III, K.L. Tanaka and M.S. Kelley, eds., *Abstracts of the annual meeting of planetary mappers, Flagstaff, AZ, June 2010*, NASA/CP-2010217041, pp. 16 – 17.

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