

## Curriculum Vitae

### Scott C. Mest

National Research Council Post-Doctoral Research Associate  
Planetary Geodynamics Laboratory / Code 698  
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#### Research Areas

Planetary geology, geomorphology, remote sensing

#### Education

- 1999-2004      **University of Pittsburgh**, Pittsburgh, PA  
Doctorate in Planetary Geology; October 2004  
Dissertation: *Evolution of the Martian Highlands: Implications from Drainage Basin Characteristics and Valley Network Morphometry*. 294 pp.  
(Faculty Advisor: David Crown),
- 1995-1998      **University of Pittsburgh**, Pittsburgh, PA  
Master of Science in Planetary Geology, August 1998  
Thesis: *Geologic History of the Reull Vallis Region, Mars*, 269 pp.  
(Faculty Advisor: David Crown)
- 1990-1995      **West Chester University of Pennsylvania**, West Chester, PA  
Bachelor of Science in Geology, May 1995

#### Professional Experience

- Oct. 2004-      National Research Council Post-doctoral Research Scientist; NASA Goddard Space Flight Center, Planetary Geodynamics Laboratory, Code 698.
- 2003            Mars Data Analysis Program review panel
- October 2001    Co-Organizer and Instructor: Pennsylvania Junior Academy of Science Workshop - Our Solar System.
- November 2000    Co-Organizer and Instructor: Pennsylvania Junior Academy of Science Workshop - The Surfaces of the Terrestrial Planets.
- October 2000    Instructor: Pennsylvania Junior Academy of Science Workshop – Our Solar System.
- August 2000    Assistant Instructor: EventScope Workshop and teacher training.
- November 1997    Assistant Instructor: Carnegie Science Academy Workshop – Geology from Space.
- November 1997    Instructor: Pennsylvania Junior Academy of Science Workshop – The Surface of Mars.
- September 1997    Instructor: Pennsylvania Junior Academy of Science Workshop – Life in the Universe.
- September 1996    Instructor: Pennsylvania Junior Academy of Science; Workshop – The Surface of Mars.
- 1996-1997      Teaching Assistant, Department of Geology and Planetary Science, University of Pittsburgh
- 1997-2001      Teaching Fellow, Department of Geology and Planetary Science, University of Pittsburgh
- 1996-2001      Graduate Research Assistant, Department of Geology and Planetary Science, University of Pittsburgh

#### Invited Lectures

- June 1997      Center for Earth and Planetary Studies and Education Department of the National Air and Space Museum, Smithsonian Institution; Workshop - Exploring the Planets Institute, Planetary Mapping Techniques.

**Awards**

- July 2001- NASA Graduate Student Researcher Program Fellowship through Geodynamics Branch, Laboratory for Terrestrial Physics, Goddard Space Flight Center, Greenbelt, MD. Technical Advisor is Dr. Herbert V. Frey.
- May-Aug. 2002 Andrew Mellon Predoctoral Fellowship: *Drainage basins in the highlands of Mars*.
- Fall 2002 NASA Pennsylvania Space Grant Consortium Fellowship
- Fall 1997 NASA Pennsylvania Space Grant Consortium Fellowship
- Summer 1997 Jet Propulsion Laboratory Summer School for Planetary Science entitled “In Situ Exploration and Sample Return”, California Institute of Technology, Pasadena, CA.
- Summer 1997 Smithsonian Graduate Student Fellowship at the Center for Earth and Planetary Studies, National Air and Space Museum, Smithsonian Institution, Washington, D.C.
- 1997 Stephen E. Dwornik Planetary Geoscience Student Award (Geological Society of America, Planetary Geology Division) – Honorable Mention for *Geologic Mapping of the Reull Vallis Region, Mars*, Lunar and Planetary Science Conference XXVIII.
- 1997 Graduate and Professional Student Association Travel Grant (University of Pittsburgh) to attend Lunar and Planetary Science Conference XXVIII.

**Academic Organizations**

- 1995-1997 Co-representative for the Department of Geology and Planetary Science to the Faculty of Arts and Sciences, University of Pittsburgh
- 1993-2004 Member Sigma Gamma Epsilon – Earth Science Honor Society

**Professional Organizations**

- 1996-present Member – Geological Society of America
- 1999-present Member – American Geophysical Union

**Technical Skills**

Familiar with: ISIS, PICS, Illustrator, Arc/Info, ArcView, ERMapper, ERDAS Imagine, ENVI.

## **Publications List**

### **Refereed Publications**

- Mest, S.C.**, D.A. Crown, and W. Harbert, 2005, *Watershed modeling in the Terra Tyrrhena region of Mars*, JGR, in review.
- Mest, S.C.**, and D.A. Crown, 2005, *Millochau crater, Mars: Infilling and erosion of an ancient highland impact crater*, Icarus, **175**, 335-359.
- Mest, S.C.**, and D.A. Crown, 2001, *Geology of the Reull Vallis region, Mars*, Icarus, **153**, 89-110.

### **Refereed Geologic Maps**

- Crown, D.A., and **S.C. Mest**, 2005, *Geologic map of MTM -30247, -40247, and -45247 Quadrangles, Reull Vallis region of Mars*, U.S. Geological Survey, in preparation.
- Crown, D.A., and **S.C. Mest**, 2005, *Geologic map of MTM -35237, -40237, and -45237 Quadrangles*, U.S. Geological Survey, in preparation.
- Mest, S.C.**, and D.A. Crown, 2005, *Geologic Map of MTM -20272 and -25272 Quadrangles, Terra Tyrrhena Region of Mars*, U.S. Geological Survey, accepted for publication.
- Mest, S.C.**, and D.A. Crown, 2003, *Geologic Map of MTM -45252 and -45257 Quadrangles, Reull Vallis Region of Mars*, U.S. Geological Survey Geologic Investigations Series Map I-2763.
- Mest, S.C.**, and D.A. Crown, 2002, *Geologic Map of MTM -40252 and -40257 Quadrangles, Reull Vallis Region of Mars*, U.S. Geological Survey Geologic Investigations Series Map I-2730.

### **Abstracts**

#### **2005**

- Crown, D.A., L.F. Bleamaster, **S.C. Mest**, and L.T. Teneva, 2005, Styles and timing of volatile-driven activity in the eastern Hellas region of Mars. Lunar and Planetary Science Conference, XXXVI, Abstract **2097**, Lunar and Planetary Institute, Houston (CD-ROM).
- Mest, S.C.**, 2005, Characteristics of impact craters and interior deposits: Analysis of the spatial and temporal distribution of volatiles in the highlands of Mars, Workshop on the Role of Volatiles and Atmospheres on Martian Impact Craters, APL, Columbia, MD, Abstract **3014**.
- Mest, S.C.**, and D.A. Crown, 2005, Impact crater deposits in the Martian highlands. Lunar and Planetary Science Conference, XXXVI, Abstract **1785**, Lunar and Planetary Institute, Houston (CD-ROM).

#### **2004**

- Mest, S.C.**, and D.A. Crown, 2004, Morphologic and morphometric analyses of fluvial systems in the southern highlands of Mars (abstract), in Workshop on Mars Valley Networks, Abstract **Mest-MVN2004**, Smithsonian Institution, Washington, DC (CD-ROM).
- Crown, D.A., L.F. Bleamaster III and **S.C. Mest**, 2004, *Geologic evolution of Dao Vallis, Mars*, Lunar and Planetary Science Conference, XXXV, Abstract **1185**, Lunar and Planetary Institute, Houston (CD-ROM).
- Mest, S.C.**, and D.A. Crown, 2004, *Morphologic and morphometric analyses of fluvial systems in the southern highlands of Mars*, Lunar and Planetary Science Conference, XXXV, Abstract **1844**, Lunar and Planetary Institute, Houston (CD-ROM).

## 2003

- Crown, D.A., and **S.C. Mest**, 2003, *Geologic mapping of the martian highlands: Eastern Promethei Terra/southeast Hesperia Planum*, in Abstracts of the Annual Planetary Geologic Mappers Meeting, June 19-20, 2003, Providence, RI.
- Crown, D.A., L.F. Bleamaster III and **S.C. Mest**, 2003, *Geologic evolution of Dao Vallis, Mars*, in EOS Trans. AGU, 84(46), Fall Meet. Suppl., Abstract **P11B-1035**.
- Crown, D.A., S.B.Z. McElfresh, T.L. Pierce and **S.C. Mest**, 2003, *Geomorphology of debris aprons in the eastern Hellas region of Mars*, Lunar and Planetary Science Conference XXXIV, Abstract **1126**, Lunar and Planetary Institute, Houston (CD-ROM).
- Mest, S.C.**, and D.A. Crown, 2003, *Geologic map of MTM -20272 and -25272 quadrangles, Terra Tyrrhena region of Mars*, in Abstracts of the Annual Planetary Geologic Mappers Meeting, June 19-20, 2003, Providence, RI.
- Mest, S.C.**, and D.A. Crown, 2003, *Geology of crater Millochau, Terra Tyrrhena region of Mars*, Lunar and Planetary Science Conference XXXIV, Abstract **1942**, Lunar and Planetary Institute, Houston (CD-ROM).

## 2002

- Crown, D.A., and **S.C. Mest**, 2002, *Geologic mapping of the Martian highlands: Terra Tyrrhena and Promethei Terra*, in Abstracts of the Annual Planetary Geologic Mappers Meeting, June 20-21, 2002, Tempe, Arizona, USGS Open-File Report 02-412.
- Crown, D.A., T.L. Pierce, S.B.Z. McElfresh and **S.C. Mest**, 2002, *Debris aprons in the eastern Hellas region of Mars: Implications for styles and rates of highland degradation*, Lunar and Planetary Science Conference XXXIII, Abstract **1642**, Lunar and Planetary Institute, Houston (CD-ROM).
- Mest, S.C.**, and D.A. Crown, 2002, *Ancient fluvial activity in the Martian highlands*, Geol. Soc. Am. Abstracts with Programs, 34(6), Abstract **40831**.
- Mest, S.C.**, and D.A. Crown, 2002, *Geology of MTM Quadrangles -20272 and -25272, Terra Tyrrhena region of Mars*, Lunar and Planetary Science Conference XXXIII, Abstract **1730**, Lunar and Planetary Institute, Houston (CD-ROM).
- Mest, S.C.**, D.A. Crown and W. Harbert, 2002, *Fluvial degradation of the highlands: The Terra Tyrrhena region of Mars*, Lunar and Planetary Science Conference XXXIII, Abstract **1892**, Lunar and Planetary Institute, Houston (CD-ROM).

## 2001

- Crown, D.A., and **S.C. Mest**, 2001, *Circum-Hellas outflow channels: New views from Mars Global Surveyor*, Lunar and Planetary Science Conference XXXII, Abstract **1344**, Lunar and Planetary Institute, Houston (CD-ROM).
- Crown, D.A., and **S.C. Mest**, 2001, *Geologic mapping of the circum-Hellas highlands of Mars*, in Abstracts of the Annual Planetary Geologic Mappers Meeting, June 18-19, 2001 Albuquerque, New Mexico, USGS Open-File Report 02-78.
- Mest, S.C.**, and D.A. Crown, 2001, *Fluvial degradation of the circum-Hellas highlands of Mars*, abstract submitted to the Workshop on the Martian Highlands and Mojave Desert Analogs, October 20-27, 2001, Las Vegas, NV and Barstow, CA, Abstract **4014**.

**Mest, S.C.**, D.A. Crown and W. Harbert, 2001, *Highland drainage basins and valley networks in the eastern Hellas region of Mars*, Lunar and Planetary Science Conference XXXII, Abstract **1457**, Lunar and Planetary Institute, Houston (CD-ROM).

**Mest, S.C.**, W. Harbert and D.A. Crown, 2001, *Application of Geographical Information System Arc/Info grid-based surface hydrologic modeling to the eastern Hellas region, Mars*, in EOS Trans. AGU, 82, Spring Meet. Suppl., Abstract **P31A-05**.

## **2000**

Crown, D.A., and **S.C. Mest**, 2000, *Geologic mapping of MTM Quadrangles -45252 and -47252, Reull Vallis region of Mars*, Lunar and Planetary Science Conference, XXXI, Abstract **#1969**, Lunar and Planetary Institute, Houston, (CD-ROM).

Crown, D.A., and **S.C. Mest**, 2000, *Geologic mapping of the Reull Vallis region of Mars*, in Abstracts of the Annual Planetary Geologic Mappers Meeting, June 22-24, 2000, Flagstaff, Arizona, USGS Open-File Report 01-018.

Crown, D.A., **S.C. Mest** and T.L. Pierce, 2000, *Highland degradation in the eastern Hellas region of Mars*, in EOS Trans. AGU, 81, Spring Meet. Suppl., Abstract **F783**.

**Mest, S.C.**, and D.A. Crown, 2000, *Geologic mapping of MTM quadrangles -40252 and -40257, Reull Vallis region, Mars*, Lunar and Planetary Science Conference XXXI, Abstract **1462**, Lunar and Planetary Institute, Houston (CD-ROM).

## **1998**

**Mest, S.C.**, D.A. Crown, R.A. Craddock and J.R. Zimbelman, 1998, *Topographic Characteristics of outflow channels in the Martian southern highlands*, Lunar and Planetary Science Conference, XXIX, Abstract **1334**, Lunar and Planetary Institute, Houston (CD-ROM).

## **1997**

Crown, D.A., and **S.C. Mest**, 1997, *Dao, Harmakhis, and Reull Valles: The role of outflow channels in the degradation of the circum-Hellas highlands of Mars*, Lunar Planet. Sci. Conf., XXVIII, 269-270.

Crown, D.A., **S.C. Mest** and K.H. Stewart, 1997, *Degradation of the Martian cratered highlands: The role of circum-Hellas outflow channels and constraints on the timing of volatile-driven activity*, Conference on Early Mars: Geologic and Hydrologic Evolution, Physical and Chemical Environments, and the Implications for Life, LPI Contribution No. 916, p. 22-23, Lunar and Planetary Institute, Houston.

**Mest, S.C.**, and D.A. Crown, 1997, *Geologic mapping of the Reull Vallis region, Mars*, Lunar Planet. Sci. Conf., XXVIII, 945-946.

## **1996**

**Mest, S.C.**, and D.A. Crown, 1996, *Geologic mapping of the Reull Vallis region, Mars*, Geol. Soc. Amer., Abstracts with Programs, A-128.

**Mest, S.C.**, and D.A. Crown, 1996, *Relationships between wrinkle ridges and craters in Hesperia Planum: Constraints on the timing of ridge formation*, Lunar and Planet. Sci. Conf., XXVII, 869-870.