

**Dr. Ali M. Bramson**

Lunar and Planetary Laboratory  
1629 E. University Blvd.  
Tucson, AZ 85721

bramson@lpl.arizona.edu  
608.438.4994  
www.lpl.arizona.edu/~bramson

**EDUCATION**

---

*University of Arizona, Tucson, AZ, 2012–2018*

Ph.D. Planetary Sciences, minor in Geosciences (Aug. 2018)

M.S. Planetary Sciences (Dec. 2015)

*University of Wisconsin-Madison, Madison, WI, 2007–2011*

B.S. Physics and Astronomy-Physics, certificate (minor) in Computer Science (Dec. 2011)

Graduated with distinction (honor's thesis); named on UW's Dean's List 6 semesters

**RESEARCH POSITIONS HELD**

---

*Assistant Professor:* Department of Earth, Atmospheric and Planetary Sciences, Purdue University,  
Starting Aug. 2020

*Postdoctoral Research Associate:* Lunar & Planetary Laboratory, University of Arizona, Sep. 2018–present

Advisor: Prof. Lynn Carter

- Targeting and data analysis of bistatic radar data with the Mini-RF instrument onboard the Lunar Reconnaissance Orbiter

*Graduate Research Associate:* Lunar & Planetary Laboratory, University of Arizona, Aug. 2012–Aug. 2018

Advisor: Prof. Shane Byrne

- Dissertation Title: “Radar Analysis and Theoretical Modeling of the Presence and Preservation of Ice on Mars”

*Undergraduate Research Assistant:* Astronomy Department, University of Wisconsin, Dec. 2008–May 2012

Advisor: Prof. Eric M. Wilcots

- Senior Thesis Title: “Using networking algorithms to assess the environments of galaxy groups”

*REU Student:* SETI Institute, June 2010–Aug. 2010

Advisor: Dr. Cynthia Phillips

- Searching for ongoing geologic activity on Jupiter's satellites

*REU Student:* Arecibo Observatory/Cornell University, May 2009–Aug. 2009

Advisors: Dr. Michael Nolan and Dr. Ellen Howell

- Modeling of 25143 Itokawa to improve radar-based shape estimation methods

*Undergraduate Research Assistant:* Nanoscale Science and Engineering Center (NSEC), University of Wisconsin, June 2007–May 2009

Advisors: Dr. Kevin M. Metz and Prof. Joel A. Pedersen

- Environmental transformations of metal nanoparticles and solution-based growth of nanoparticles

**HONORS AND AWARDS** (Total amount awarded: \$409,183)*Postdoctoral:*

- Named a 2019 “Forward Under 40” awardee by the Wisconsin Alumni Association

*Graduate (\$352,583):*

- Gerard P. Kuiper Memorial Award (2018) - \$1,000
- Student Travel Grant from NASA’s MEPAG (Mars Exploration Program Analysis Group) to attend the Mars Workshop on Amazonian and Present-Day Climate (2018) - \$1,200
- University of Arizona (UA) Graduate and Professional Student Council Travel Grant (2018) - \$741
- LPI (Lunar and Planetary Institute) Career Development Award (2017) - \$1,000
- Wisconsin Alumni Association Presidents’ Circle of Excellence (2017)
- NASA Earth and Space Science Fellowship (NESSF) (awarded 2016) - \$30,000/year for up to 3 years
- LPL Shirley D. Curson Travel Award in Planetary Science (2015) - \$1,500
- UA Graduate and Professional Student Council Travel Grant (2015) - \$739
- Student Travel Grant from NASA’s MEPAG to attend the 8th Intl. Conference on Mars (2014) - \$1,000
- Roy P. Drachman Galileo Scholarship for the College of Science Outstanding Graduate Student Teaching Award (2014) - \$1,000
- UA College of Science Teaching Award for the Lunar and Planetary Laboratory (2014)
- UA Galileo Circle Scholarship (2014, 2017) - \$2,000
- Outstanding Student Paper Award at the American Geophysical Union (AGU) Fall Meeting (2013)
- National Science Foundation (NSF) Graduate Research Fellowship (2013–2016) - \$194,859
- Lieut. Colonel Kenneth Rondo Carson and Virginia Bryan Carson Graduate Fellowship (2012–2013)
- Arizona Space Grant Consortium Assistantship (2012–2013); combined with Carson - \$57,544

*Undergraduate (\$56,600):*

- UW-Madison Astronomy Dept. Lowell Doherty Award for Excellence in Astronomy recognizing a graduating senior's exceptional performance in astronomical research and in the classroom (2012) - \$500
- Phi Beta Kappa Honor Society (joined 2011)
- NSF Undergraduate Research and Mentoring (URM) Fellow at UW-Madison (2008–2011) - \$36,000
- Wisconsin Space Grant Consortium Undergraduate Research Grant (2011) - \$3,500
- David H. Durra Scholarship for undergraduates pursuing degrees in the physical sciences (2011) - \$2,000
- Wisconsin Space Grant Consortium Undergraduate Scholarship (2010–2011) - \$1,500
- SETI Institute’s 2010 Research Experiences for Undergraduates (REU) in Astrobiology - \$5,600
- Bernice Durand Undergraduate Scholarship for undergraduate women or minorities majoring in Physics or Astronomy (2009) - \$1,900
- Arecibo Observatory’s 2009 Research Experiences for Undergraduates (REU) - \$4,500
- William F. Vilas Scholarship to freshman who demonstrate strong academic performance (2007) - \$400
- Verona Area Community Theater Fine Arts Scholarship (2007) - \$700

**RESEARCH GRANTS FUNDED** (Total amount funded: \$640,307)

## As Co-I:

- *Microstructural evolution of solar system ices through sintering*, funded by NASA’s Solar System Workings Program (Total budget = \$410,307)
  - PI: Jamie Molaro

- *Subsurface Water Ice Mapping (SWIM) in the Northern Hemisphere of Mars*, funded by JPL to support NASA's Mars Exploration Program (Total budget = \$230,000)
  - PIs: Nathaniel E. Putzig and Gareth A. Morgan
- *Global Extension to Subsurface Water Ice Mapping (SWIM)*, funded by JPL to support NASA's Mars Exploration Program
  - PIs: Nathaniel E. Putzig and Gareth A. Morgan
- *Mars Orbiter for Resources, Ices, and Environments (MORIE)*, funded by NASA's Planetary Mission Concepts Studies Program
  - PI: Wendy M. Calvin

## SKILLS

---

### *Spacecraft:*

- Analysis of data from the *High Resolution Imaging Science Experiment (HiRISE)*, *Context Camera (CTX)* and *Shallow Radar (SHARAD)* instruments onboard the Mars Reconnaissance Orbiter; the *Mini-RF* radar instrument onboard the Lunar Reconnaissance Orbiter; the *Solid State Imager (SSI)* onboard Galileo; the *Long-Range Reconnaissance Imager (LORRI)* onboard New Horizons; and shape models of asteroid 25143 Itokawa from *Arecibo Observatory* and JAXA's *Hayabusa* spacecraft
- Co-I on COMPASS (Climate Orbiter for Mars Polar Atmospheric and Subsurface Science), a mission concept proposed to the 2019 NASA Discovery Program AO
- Participant of NASA's *PI Launchpad: Getting Your Mission Idea Off The Ground*
- Participant of the 2016 Planetary Science Summer School at NASA's Jet Propulsion Laboratory
  - Role: Project/Proposal Manager
  - Mission Concept: New Frontiers-class Uranus orbiter mission
- Produced 11 HiRISE Digital Terrain Models archived on the Planetary Data System (PDS)
- Attended science team meetings for the HiRISE, CaSSIS, SHARAD, MARSIS, Dawn, and Mini-RF missions/instruments
- Attended and presented at Project Science Group meetings for the Mars Reconnaissance Orbiter
- Attended the Navigation and Ancillary Information Facility (NAIF)'s SPICE training workshop

### *Remote Sensing:*

- Esri's geospatial ArcGIS software
- SeisWare seismic software
- USGS's image processing software Integrated Software for Imagers and Spectrometers (ISIS)
- Socet Set digital mapping software
- HiRISE Digital Terrain Model (DTM) creation
- SHAPE asteroid shape modeling software

### *Computer:*

- Microsoft, Mac, and Linux OS
- Languages: Java, Matlab, Maple, MIPS R2000 Assembly Language, BASIC, Visual Basic, C, C++, and IDL

### *Field Work:*

- Ice coring and Ground Penetrating Radar (GPR) at 200, 350, and 900 MHz of the Langjökull glacier, Iceland with Dr. Lynn Carter and colleagues
- Differential GPS of lava flow margins, surface roughness and stereophotogrammetric ground control points at:
  - Craters of the Moon, Idaho with NASA's 2016 FINESSE (Field Investigations to Enable Solar System Science and Exploration) field campaign

- Iceland's Holuhraun 2014–2015 lava flow and the Laki lava flow with Dr. Christopher Hamilton's 2015 field workshop on active lava-water interactions
- Participated in 12 semesters of Planetary Geology Field Studies to study the local geology and planetary analogs in: Tucson; Flagstaff; the Mojave Desert; Northern New Mexico and the K/T Boundary; Hawaii; Southern New Mexico; Southeastern Utah and Canyonlands; the Salton Sea; the Chiricahua Mountains and San Bernardino Valley; Southwestern Utah, and Bryce and Zion Canyons; Page, AZ; Death Valley; Canyon de Chelly
- Participated in field trips to explore Mars analogs at the HiRISE team meetings to Utah, Idaho, Iceland, and Flagstaff

*Lab:*

- Aqueous synthesis of metal nanoparticles
- Scanning electron microscopy
- Dynamic light scattering
- UV-Visible spectroscopy

*Group Management and Interpersonal Training:*

- Intergroup Dialogue Facilitation – Office of Inclusion and Multicultural Engagement, U. of Arizona
- General Education Safe Zone Training – Office of LGBTQ Affairs, U. of Arizona
- LGBT Safe Zone Training – UW-Madison
- Gay, Lesbian and Straight Education Network (GLSEN) of South-Central Wisconsin

**PROFESSIONAL ACTIVITIES AND DEPARTMENTAL INVOLVEMENT**

- 
- Served on NASA Review Panels ongoing
  - Reviewer for *Nature*, *Geophysical Research Letters*, *Icarus*, *Advances in Space Research*, and *Geoscience and Remote Sensing Letters* ongoing
  - Member of the Science Organizing Committee for the Seventh International Conference on Mars Polar Science and Exploration 2019
  - Member of the Federal Relations Subcommittee for the Division of Planetary Sciences of the American Astronomical Society 2019–present
  - Session Chair for a variety of conferences, including: 2016–present
    - *LPSC*, *Mars Polar Science and Exploration*, *Amazonian Climate*, etc.
  - Reviewer for the GSA Planetary Geology Division's Dwornik Award 2019
  - *Wisconsin Alumni Association Tucson Chapter*: President 2014–2018
  - *UA Graduate and Professional Student Council*: Travel Grant Reviewer 2015
  - *UA Lunar and Planetary Laboratory Graduate Student Activities*:
    - Representative to the faculty 2016–2018
    - Prospective graduate student visit weekend coordinator 2014, 2015
    - Grad student website webmaster 2014–2017
    - Lunar and Planetary Laboratory Conference (LPLC) session chair 2014, 2016, 2017
    - LPL Bratfest coordinator 2012–2017
  - *Society of Physics Students, UW-Madison chapter*
    - President 2010–2011
    - Vice President 2009–2010
    - Events Coordinator 2008–2009
    - Member 2007–2012
  - *The Ogg Association at UW-Madison*: Educational Programs Coordinator 2007–2008

**OUTREACH**


---

<i>Bringing the Universe to America's Classrooms, K–12 instructional resources by PBS/NASA</i>	2018–present
<ul style="list-style-type: none"> <li>Content advisor, <a href="https://www.pbslearningmedia.org/universe/">https://www.pbslearningmedia.org/universe/</a></li> </ul>	
<i>Steward Public Evening Lecture Series</i>	March 2019
<ul style="list-style-type: none"> <li>Gave public talk for 115 people in Tucson, Arizona</li> </ul>	
<i>Boise State's First Friday Public Astronomy Event</i>	March 2019
<ul style="list-style-type: none"> <li>Gave public talk for over 150 people in Boise, Idaho</li> </ul>	
<i>"From Madison to Mars", public talk at the Verona Area Community Theater</i>	Oct. 2018
<ul style="list-style-type: none"> <li>Gave public talk for 90 people in my hometown of Verona, Wisconsin</li> </ul>	
<i>Wisconsin Science Festival</i>	Nov. 2017
<ul style="list-style-type: none"> <li>Panelist for the "Mars Invades Madison" event about life on Mars</li> </ul>	
<i>Summer Science Saturday at LPL</i>	July 2017
<ul style="list-style-type: none"> <li>Discussed craters and NASA's HiRISE camera with the public</li> </ul>	
<i>Core Knowledge Charter School</i>	Dec. 2016
<ul style="list-style-type: none"> <li>Spoke with 44 third-graders about life as a planetary scientist</li> </ul>	
<i>Deep Astronomy, Live</i>	Nov. 2016
<ul style="list-style-type: none"> <li>Panelist for the "Footsteps to Mars" live web broadcast about water on Mars</li> </ul>	
<i>Glacier Edge Elementary School</i>	Oct. 2016
<ul style="list-style-type: none"> <li>Spoke with 174 fourth and fifth-graders about life as a planetary scientist</li> </ul>	
<i>Tucson Festival of Books</i>	March 2013, 2015, 2016
<ul style="list-style-type: none"> <li>Ran activities on comparative planetology, meteorite hunting, exoplanet discovery and characterization, and science art for the public</li> </ul>	
<i>The Art of Planetary Science</i>	Dec. 2013, Oct. 2015, Feb. 2017
<ul style="list-style-type: none"> <li>Volunteered with and submitted "data art" to this exhibition to bring together scientists and artists in Tucson</li> </ul>	
<i>Space Drafts Public Talk Series, Borderlands Brewery</i>	Feb. 2015
<ul style="list-style-type: none"> <li>Gave public lecture on "Crazy Craters!!! Windows into Martian Ice"</li> </ul>	
<i>Astronomy Ambassador for the American Astronomical Society</i>	Nov. 2014
<ul style="list-style-type: none"> <li><a href="http://aas.org/outreach/aas-astronomy-ambassadors-program">http://aas.org/outreach/aas-astronomy-ambassadors-program</a></li> </ul>	
<i>Arizona Science and Astronomy Expo</i>	Nov. 2012
<ul style="list-style-type: none"> <li>Explained an impact cratering demo for the public</li> </ul>	
<i>Sugar Creek Elementary School</i>	Nov. 2011
<ul style="list-style-type: none"> <li>Read books about the Moon and the Mars rovers and explained various astronomical phenomena to three second-grade classes.</li> </ul>	
<i>EAGLE Middle School Science Mentor Program (Fitchburg, WI)</i>	Spring 2011
<ul style="list-style-type: none"> <li>Mentored an 8<sup>th</sup> grade student</li> </ul>	
<i>Universe in the Park</i>	Summer 2010, 2011
<ul style="list-style-type: none"> <li>Gave 30-minute astronomy presentations at WI state parks, preceded by telescope viewings</li> </ul>	
<i>"SETI Gurls"</i>	Summer 2010
<ul style="list-style-type: none"> <li>Co-created this video about the SETI REU program that has over 11,000 views on YouTube, and was featured on NPR's Science Friday, the Huffington Post and Astronomy Magazine.</li> </ul>	
<i>SETIcon</i>	Aug. 2010
<ul style="list-style-type: none"> <li>Ran planetarium shows and helped with a Build-Your-Own Galileoscope workshop</li> </ul>	
<i>Wonders of Physics</i>	Feb. 2008 & 2009
<ul style="list-style-type: none"> <li>Volunteered at this program for the public and supervised/explained topics in the physics museum</li> </ul>	

## TEACHING AND CURRICULUM DEVELOPMENT

---

### *Entering Research, 2<sup>nd</sup> Edition*

- Author of active learning materials contributed to this curriculum to support undergraduate and graduate research trainees. Publisher: Macmillan; Editors: J. Branchaw, A. Butz, and A. Smith.
- <https://store.macmillanlearning.com/us/product/Entering-Research/p/1319263682>

### *Center for the Improvement of Mentored Experiences in Research (CIMER)*

- Master Consultant: Trained to help individuals and institutions develop their own implementation plan of theoretically-grounded, evidence-based, and culturally-responsive research mentee curricula

*LASC/SCI 397 B & C: Entering Research I & II* (University of Arizona) 2013–2018

- Instructor of Record; founded this 2-semester workshop for undergraduate researchers at the UA
- Coordinated and mentored other graduate student facilitators on learner-centered teaching practices and experiential learning involved with teaching this course

*Geology 460:224: Geology of Moons and Planets* (Rutgers University) Spring 2018

- Guest Lecturer (undergraduate non-majors survey course)

*Astro 340: Planetary Astrophysics* (UW-Madison) Fall 2011 and Fall 2017

- Guest lecturer (undergraduate astronomy majors course)
- Helped develop new final class project

*PTYS 554: Evolution of Planetary Surfaces* (University of Arizona) Fall 2015

- Guest Lecturer (graduate level course)

*Biology 260 & 261: Entering Research I & II* (UW-Madison) Fall 2010–Spring 2011

- Co-facilitated this class for undergraduates beginning independent research projects

*Astro 104: Our Exploration of the Solar System* (UW-Madison) Fall 2010

- Guest lecturer and reviewer of students' final projects on designing a solar system mission (undergraduate general education course)

*Physics Learning Center* (UW-Madison) 2009–2010

- Peer Mentor Tutor (PMT): led 2+ small group sessions per week for introductory physics classes
- Participated in weekly training seminars on teaching strategies

## STUDENTS MENTORED

---

### *Undergraduate*

- Claire W. Cook (Univ. of Arizona) 2017–2019  
Senior Honors Thesis “*Radar Constraints on the Thickness of Subsurface Ice Near Hellas Planitia, Mars*” and NASA Arizona Space Grant Consortium Intern

## PRESS

---

- Interviewed for Episode 64 of the WeMartians Podcast, a radio show about the exploration of Mars
- Interviewed for UA News series commemorating LPL’s role in the Apollo missions, including articles “*Exploring a Desert Portal to Other Worlds*” and “*Mapping the Moon and Worlds Beyond*”
- Meet 2019 “Forward Under 40” recipient Ali Bramson ’11 for the Wisconsin Alumni Association
- Interviewed by NPR’s member station BSPR for a segment about finding ice on Mars on the “*Idaho Matters*” podcast
- 2019 GRL paper, *Water on Mars, with a grain of salt: local heat anomalies are required for basal melting of ice at the south pole today*, syndicated by:

- Space.com, Newsweek, Arizona Daily Star, EurekAlert, Science News, and others
- Profiled in *The Washburn Observer* for “What can you do with a UW degree in astronomy?”
- Featured in *The Verona Press* for the public lecture I gave in my hometown after my PhD defense
- 2018 Nature Astronomy paper, *Cryovolcanic rates on Ceres revealed by topography*, syndicated by:
  - National Geographic, Science News, Gizmodo, Astronomy Magazine, Phys.org, and others
- *Eos Research Spotlight* on 2018 JGR paper on Hrad Vallis lava-ice interactions
- 2018 Science paper, *Exposed subsurface ice sheets in the Martian mid-latitudes*, syndicated by:
  - Time, National Geographic, Washington Post, Gizmodo, Wired, Astronomy.com, and others
- Interviewed for Science’s press article about the exposed subsurface ice sheets on Mars paper
- NASA Press Release about the exposed subsurface ice sheets on Mars paper
- 2017 GRL paper on *The Vanishing Cryovolcanoes of Ceres* syndicated by:
  - Space.com, Astronomy.com, UA News, and others
- Arizona Sonora News interview for the article, “*The Space Race of the past launched astronomy’s future in Tucson*”
- Profiled for a “*Women in Science*” article in the Daily Wildcat, the UA’s student newspaper
- 2015 GRL paper, *Widespread Excess Ice in Arcadia Planitia*, syndicated by:
  - CBS News, Space.com, UA News, and others
- NASA’s JPL Martian Diaries Blog Post about Subsurface Ice and Terraced Craters
- Planetary Society Blog Post about Terraced Craters
- UW Alumni Magazine's Class of 2011 Feature
- Profiled in The Washburn Observer (UW-Madison Astronomy Department Newsletter)
- “SETI Gurls” mentioned on NPR's Science Friday and in the Huffington Post

## INVITED TALKS

---

- Invited Talk for the Seventh International Conference on Mars Polar Science and Exploration Jan. 2020  
Ushuaia, Tierra del Fuego, Argentina
- Department Colloquium, Civil Space Group Oct. 2019  
Johns Hopkins University Applied Physics Laboratory, Laurel, MD
- Geology Seminar Series, Department of Geological Sciences March 2019  
University of Idaho, Moscow, ID
- EAS Seminar, Department of Earth and Atmospheric Sciences March 2019  
Georgia Institute of Technology, Atlanta, GA
- Departmental Seminar, Department of Physics March 2019  
Boise State University Boise, ID
- Department Colloquium, Department of Geology and Geophysics Feb. 2019  
University of Utah, Salt Lake City, UT
- EAPS Colloquium, Department of Earth, Atmospheric, and Planetary Sciences Feb. 2019  
Purdue University, West Lafayette, IN
- Department Seminar, Department of Earth and Planetary Sciences Jan. 2019  
Rutgers University, New Brunswick, NJ
- Department Colloquium, Department of Earth, Environmental, and Planetary Sciences Jan. 2019  
Brown University, Providence, RI
- Solicited Presentation for the 42<sup>nd</sup> Assembly of the Committee on Space Research July 2018  
Pasadena, CA
- Lunch Seminar, Center for Space and Habitability Sept. 2017  
University of Bern, Bern, Switzerland

- Planetary Lunch Colloquium, Earth, Atmospheric and Planetary Sciences Department      March 2017  
Massachusetts Institute of Technology, Cambridge, MA
- Lunch Seminar, Department of Astronomy      Oct. 2015  
University of Wisconsin-Madison, Madison, WI
- Colloquium, Planetary Science Directorate      Sept. 2015  
Southwest Research Institute, Boulder, CO

## PEER-REVIEWED PUBLICATIONS

---

† = research advisee; \* = shared first-authorship

- [16] \*Morgan, G. A., \*N. E. Putzig, M. R. Perry, H. G. Sizemore, **A. M. Bramson**, E. I. Petersen, Z. M. Bain, D. M. H. Baker, M. Mastrogiuseppe, R. H. Hoover, I. B. Smith, A. Pathare, C. M. Dundas, B. A. Campbell (Submitted), Mapping H<sub>2</sub>O-Ice on Mars: Human Mission Resources and Climatic Implications.
- [15] Palmero Rodriguez, J. A., K. Tanaka, **A. M. Bramson**, G. J. Leonard, V. Baker (Submitted), Evidence of large-scale erosion of the north polar plateau of Mars during the latest phases of high planetary obliquity.
- [14] †Cook, C. W., **A. M. Bramson**, S. Byrne, J. W. Holt, M. S. Christoffersen, D. Viola, C. M. Dundas, T. A. Gouge (Under Revision), Radar Constraints on the Thickness of Subsurface Ice Near Hellas Planitia, Mars.
- [13] Martellato, E., **A. M. Bramson**, G. Cremonese, A. Lucchetti, F. Marzari, M. Massironi, C. Re, and S. Byrne (Under Revision), Martian Ice Revealed by Modeling of Simple Terraced Crater Formation.
- [12] **Bramson, A. M.**, S. Byrne, J. Bapst, I. B. Smith, and T. McClintock (2019) A Migration Model for the Polar Spiral Troughs of Mars. *Journal of Geophysical Research: Planets*, 124, 4, 1020–1043, <https://doi.org/10.1029/2018JE005806>.
- [11] \*Sori, M. M. and \***A. M. Bramson** (2019) Water on Mars, with a grain of salt: local heat anomalies are required for basal melting of ice at the south pole today. *Geophysical Research Letters*, 46, 3, 1222–1231, <https://doi.org/10.1029/2018GL080985>.
- [10] Diniega, S., I.B. Smith, and **A. M. Bramson** (2019), Updates on understanding Mars's recent and present-day climate. *Eos*, 100, <https://doi.org/10.1029/2019EO114411>.
- [9] Sori, M. M., H. G. Sizemore, S. Byrne, **A. M. Bramson**, M. T. Bland, N. T. Stein, and C. T. Russell (2018), Cryovolcanic rates on Ceres revealed by topography. *Nature Astronomy*, 2, 946–950, <https://doi.org/10.1038/s41550-018-0574-1>
- [8] Hamilton, C. W., P. J. Mouginis-Mark, M. M. Sori, S. P. Scheidt, and **A. M. Bramson** (2018), Episodes of aqueous flooding and effusive volcanism associated with Hrad Vallis, Mars. *Journal of Geophysical Research: Planets*, 123, 6, 1484–1510, <https://doi.org/10.1029/2018JE005543>.
- [7] Elder, C. M., **A. M. Bramson**, L. W. Blum, H. T. Chilton, A. Chopra, C. Chu, A. Das, A. B. Davis, A. Delgado, J. Fulton, L. Jozwiak, A. Khayat, M. E. Landis, J. L. Molaro, M. Slipski, S. Valencia, J.



- Watkins, C. L. Young, C. J. Budney, and K. L. Mitchell (2018), OCEANUS: A high science return Uranus orbiter with a low-cost instrument suite. *Acta Astronautica*, 148, 1–11, <https://doi.org/10.1016/j.actaastro.2018.04.019>.
- [6] Dundas, C. M., **A. M. Bramson**, L. Ojha, J. J. Wray, M. T. Mellon, S. Byrne, A. S. McEwen, N. E. Putzig, D. Viola, S. Sutton, E. Clark and J. W. Holt (2018), Exposed subsurface ice sheets in the Martian mid-latitudes. *Science*, 359, 6372, 199–201, <https://doi.org/10.1126/science.aao1619>.
- [5] Smith, I. B., S. Diniega, D. W. Beaty, T. Thorsteinsson, P. Becerra, **A. M. Bramson**, S. M. Clifford, C. S. Hvidberg, G. Portyakina, S. Piqueux, A. Spiga and T. N. Titus (2018), Introduction to the special issue on Mars polar science and exploration: Conference summary and five top questions. *Icarus*, 308, 2–14, <https://doi.org/10.1016/j.icarus.2017.06.027>.
- [4] **Bramson, A. M.**, S. Byrne, J. Bapst (2017), Preservation of Mid-Latitude Ice Sheets on Mars. *Journal of Geophysical Research: Planets*, 122, 11, 2250–2266, <https://doi.org/10.1002/2017JE005357>. (JGR Editor’s Highlight)
- [3] Sori, M. M., J. N. Bapst, **A. M. Bramson**, S. Byrne, and M. E. Landis (2017), A Wunda-full world? Carbon dioxide ice deposits on Umbriel and other Uranian moons. *Icarus*, 290, 1–13, <https://doi.org/10.1016/j.icarus.2017.02.029>.
- [2] Sori, M. M., S. Byrne, M. T. Bland, **A. M. Bramson**, A. I. Ermakov, C. W. Hamilton, K. A. Otto, O. Ruesch, C. T. Russell (2017), The vanishing cryovolcanoes of Ceres. *Geophysical Research Letters*, 44, 3, 1243–1250, <https://doi.org/10.1002/2016GL072319>.
- [1] **Bramson, A. M.**, S. Byrne, N. E. Putzig, S. Sutton, J. J. Plaut, T. C. Brothers, and J. W. Holt (2015), Widespread excess ice in Arcadia Planitia, Mars. *Geophysical Research Letters*, 42, 16, 6566–6574, <https://doi.org/10.1002/2015GL064844>.

## SELECTED CONFERENCE ABSTRACTS/PRESENTATIONS

† = research advisee; \* = shared first-authorship

— 2019 —

- G.A. Morgan, N.E. Putzig, H.G. Sizemore, D.M.H. Baker, **A.M. Bramson**, E.I. Petersen, Z.M. Bain, R.H. Hoover, M.R. Perry, M. Mastrogiuseppe, I.B. Smith, B.A. Campbell, A.V. Pathare, and C.M. Dundas (July 2019) The Science Value of Ice Resource Mapping: Mars Subsurface Water Ice Mapping (SWIM). LPI Contrib. No. 2089, p.6418, *9th International Conference on Mars (9th Mars)*, Pasadena, CA.
- Z.M. Bain, N.E. Putzig, S.J. Robbins, R.H. Hoover, A.M. Bramson, E.I. Petersen, and G.A. Morgan (July 2019) Analysis of Layered Ejecta Craters with Mars Reconnaissance Orbiter Shallow Radar (SHARAD) Data. LPI Contrib. No. 2089, p.6423, *9th Mars*, Pasadena, CA.
- N.E. Putzig, G.A. Morgan, H.G. Sizemore, D.M.H. Baker, **A.M. Bramson**, E.I. Petersen, Z.M. Bain, R.H. Hoover, M.R. Perry, M. Mastrogiuseppe, I.B. Smith, B.A. Campbell, A.V. Pathare, and C.M. Dundas (July 2019) Results of the Mars Subsurface Water Ice Mapping (SWIM) Project. LPI Contrib. No. 2089, p.6427, *9th Mars*, Pasadena, CA.
- A.M. Bramson**, L.M. Carter, G.W. Patterson, and M.M. Sori (March 2019) Radar Response of Lunar Cryptomaria and Pyroclastic Deposits in Mini-RF Data. LPI Contrib. No. 2132, p.2673, Oral presentation at the *50th Lunar and Planetary Science Conference (LPSC)*, The Woodlands, TX.

- †C.W. Cook, **A.M. Bramson**, M.S. Christoffersen, S. Byrne, J.W. Holt, D. Viola, C.M. Dundas, T.A. Goudge (March 2019) Radar Constraints on the Thickness of Subsurface Ice Near Hellas Planitia, Mars. LPI Contrib. No. 2132, p.2245, *50th LPSC*, The Woodlands, TX.
- \*M.M. Sori and \***A.M. Bramson** (March 2019) A Story of Water, Ice, and Fire on Mars: Conditions for generating Liquid Water under the South Polar Layered Deposits. LPI Contrib. No. 2132, p.1073, *50th LPSC*, The Woodlands, TX.
- A.M. Bramson**, E.I. Petersen, Z.M. Bain, N.E. Putzig, G.A. Morgan, M. Mastrogiuseppe, M.R. Perry, I.B. Smith, H.G. Sizemore, D.M.H. Baker, R.H. Hoover, and B.A. Campbell. (March 2019) Mars Subsurface Water Ice Mapping (SWIM): Radar Subsurface Reflectors. LPI Contrib. No. 2132, p.2069, *50th LPSC*, The Woodlands, TX.
- G.A. Morgan, N.E. Putzig, M.R. Perry, **A.M. Bramson**, E.I. Petersen, Z.M. Bain, M. Mastrogiuseppe, D.M. H. Baker, I.B. Smith, R.H. Hoover, H.G. Sizemore, and B.A. Campbell (March 2019) The Mars Subsurface Water Ice Mapping (SWIM) Project. LPI Contrib. No. 2132, p.2918, *50th LPSC*, The Woodlands, TX.
- N.E. Putzig, D.M. Hollibaugh Baker, G.A. Morgan, Z.M. Bain, **A.M. Bramson**, R.H. Hoover, M. Mastrogiuseppe, M.R. Perry, E.I. Petersen, H.G. Sizemore, I.B. Smith, and B.A. Campbell (March 2019) Mars Subsurface Water Ice Mapping (SWIM): Geomorphic Mapping. LPI Contrib. No. 2132, p.2087, *50th LPSC*, The Woodlands, TX.
- M.R. Perry, Z.M. Bain, N.E. Putzig, G.A. Morgan, **A.M. Bramson**, E.I. Petersen, M. Mastrogiuseppe, D.M.H. Baker, R.H. Hoover, H.G. Sizemore, I.B. Smith, and B.A. Campbell (March 2019) Mars Subsurface Water Ice Mapping (SWIM): Geomorphic Mapping. LPI Contrib. No. 2132, p.3083, *50th LPSC*, The Woodlands, TX.
- Z.M. Bain, G.A. Morgan, N.E. Putzig, B.A. Campbell, **A.M. Bramson**, E.I. Petersen, M. Mastrogiuseppe, M.R. Perry, D.M.H. Baker, I.B. Smith, R.H. Hoover, and H.G. Sizemore (March 2016) Mars Subsurface Water Ice Mapping (SWIM): Radar Surface Reflectivity. LPI Contrib. No. 2132, p.2726, *50th LPSC*, The Woodlands, TX.
- R.H. Hoover, H.G. Sizemore, Z. Bain, N.E. Putzig, G.A. Morgan, M.R. Perry, M. Mastrogiuseppe, D.M.H. Baker, **A.M. Bramson**, E. Petersen, I.B. Smith, and B. A. Campbell (March 2019) Mars Subsurface Water Ice Mapping (SWIM): Thermal Analysis. LPI Contrib. No. 2132, p.1679, *50th LPSC*, The Woodlands, TX.

— 2018 —

- A.M. Bramson** (July 2018), The Amazonian climate of Mars: A cold and dry summary (Invited), Abstract B4.1-0004-18, Oral presentation at the *42nd Assembly of the Committee on Space Research (COSPAR)*, Pasadena, CA.
- A.M. Bramson**, S. Byrne, J. Bapst, and I.B. Smith (June 2018), The mass balance of Mars' spiral troughs. LPI Contrib. No. 2086, p.4023, Oral presentation at the *Mars Workshop on Amazonian Climate 2018*, Lakewood, CO.
- †C.W. Cook, **A.M. Bramson**, S. Byrne, D. Viola, J.W. Holt, M.S. Christoffersen, and C.M. Dundas (June 2018), Searching for subsurface ice in Hellas Planitia using SHARAD. LPI Contrib. No. 2086, p.4041, *Mars Workshop on Amazonian Climate 2018*, Lakewood, CO.
- A.M. Bramson**, S. Byrne, J. Bapst, and I.B. Smith (March 2018), The role of sublimation in the migration of Mars' spiral polar troughs. LPI Contrib. No. 2083, p.2611, Oral presentation at the *49th Lunar and Planetary Science Conference (LPSC)*, The Woodlands, TX.
- †C.W. Cook, **A.M. Bramson**, S. Byrne, D. Viola, J.W. Holt, M.S. Christoffersen, and C.M. Dundas (March 2018), Searching for subsurface ice in Hellas Planitia using SHARAD. LPI Contribution No. 2083, p.2457, *49th LPSC*, The Woodlands, TX.
- M.M. Sori, H.G. Sizemore, S. Byrne, **A.M. Bramson**, M.T. Bland, and C.T. Russell (March 2018), Ceres' cryovolcanic history. LPI Contribution No. 2083, p.1628, *49th LPSC*, The Woodlands,

TX.

C.W. Hamilton, P.J. Mouginis Mark, M.M. Sori, S.P. Scheidt, and **A.M. Bramson** (March 2018), Evidence of lava flow inflation near Hrad Vallis, Mars. LPI Contribution No. 2083, p.2313, *49th LPSC*, The Woodlands, TX.

— 2017 —

- A.M. Bramson**, S. Byrne, and J. Bapst (September 2017), Stability of mid-latitude excess ice on Mars over 10s of millions of years. id.EPSC2017-425, Oral presentation at the *European Planetary Science Congress (EPSC)*, Riga, Latvia.
- M.M. Sori, S. Byrne, and **A.M. Bramson** (September 2017), Present-day flow rates of mid-latitude glaciers on Mars. id.EPSC2017-382, *European Planetary Science Congress (EPSC)*, Riga, Latvia.
- A.M. Bramson**, S. Byrne, and J. Bapst (September 2017), Preservation Of mid-latitude ice sheets on Mars. *Theoretical and Laboratory Investigations of Icy Regoliths Workshop*, Green Bank, WV.
- A.M. Bramson**, S. Byrne, and J. Bapst (March 2017), Survival Of mid-latitude ground ice on Mars. LPI Contribution No. 1964, p.2692, Oral presentation at the *48th LPSC*, The Woodlands, TX.
- A.M. Bramson**, C.M. Elder, L.W. Blum, H.T. Chilton, A. Chopra, C. Chu, A. Das, A. Davis, A. Delgado, J. Fulton, L. Jozwiak, A. Khayat, M.E. Landis, J.L. Molaro, M. Slipski, S.Valencia, J. Watkins, C.L. Young, C.J. Budney, and K.L. Mitchell (March 2017), OCEANUS: A Uranus orbiter concept study from the 2016 NASA/JPL Planetary Science Summer School. LPI Contribution No. 1964, p.1583, *48th LPSC*, The Woodlands, TX.
- E.I. Schaefer, C.W. Hamilton, C.D. Neish, M.M. Sori, **A.M. Bramson**, S.P. Beard, S.I. Peters, T.A. Miller, and E. L. Rader (March 2017), Seeing pāhoehoe from orbit (without squinting). LPI Contribution No. 1964, p.2343, *48th LPSC*, The Woodlands, TX.
- M.M. Sori, M.E. Landis, J. Bapst, **A.M. Bramson**, S. Byrne, V. Reddy, and M.K. Shepard (March 2017), Ice stability on Psyche and implications for the planetary core hypothesis. LPI Contribution No. 1964, p.2550, *48th LPSC*, The Woodlands, TX.
- N.R. Williams, M.P. Golombek, **A.M. Bramson**, D. Viola, S. Byrne, and A.S. McEwen (March 2017), Surface morphologies of Arcadia Planitia as an indicator of past and present near-surface ice. LPI Contribution No. 1964, p.2852, *48th LPSC*, The Woodlands, TX.
- I.B. Smith, S. Diniega, D.W. Beaty, T. Thorsteinsson, P. Becerra, **A.M. Bramson**, S.M. Clifford, C.S. Hvidberg, G. Portyankina, S. Piqueux, A. Spiga, and T.N. Titus (March 2017), The 6th International Conference on Mars Polar Science and Exploration: State of knowledge and Top Five Questions. LPI Contribution No. 1964, P.1701, *48th LPSC*, The Woodlands, TX.
- M.M. Sori, S. Byrne, M.T. Bland, **A.M. Bramson**, A.I. Ermakov, C.W. Hamilton, K.A. Otto, O. Ruesch, and C.T. Russell (March 2017), The vanishing cryovolcanoes of Ceres. LPI Contribution No. 1964, p.1116, *48th LPSC*, The Woodlands, TX.
- C.M. Elder, **A.M. Bramson**, L.W. Blum, H.T. Chilton, A. Chopra, C. Chu, C. A. Das, A. Davis, A. Delgado, J. Fulton, L. Jozwiak, A. Khayat, M.E. Landis, J.L. Molaro, M. Slipski, S. Valencia, J. Watkins, C.L. Young, C.J. Budney, K.L. Mitchell (February 2017), New Frontiers-class missions to the Ice Giants. LPI Contribution No. 1989, p.8147, *Planetary Science Vision 2050 Workshop*, Washington, DC.

— 2016 —

- E.I. Schaefer, C. Hamilton, C. Neish, S.P. Beard, **A.M. Bramson**, M. Sori, and E.L. Rader (December 2016), Decoding the Margins: What can the fractal geometry of basaltic flow margins tell us? abstract #P33D-2187, *American Geophysical Union (AGU) Fall Meeting 2016*, San Francisco, CA.
- A.M. Bramson** (November 2016), Mid-latitude excess ground ice, Shallow Radar (SHARAD; NASA's Mars Reconnaissance Orbiter) radar science team meeting, Denver, CO.
- A.M. Bramson**, S. Byrne and J.N. Bapst (September 2016), Preservation of excess ice in the Northern mid-latitudes of Mars. LPI Contribution No. 1926, p.6074, Oral presentation at the *6th Mars Polar Science Conference*, University of Iceland, Reykjavik, Iceland.

**A.M. Bramson** (July 2016), Preservation of mid-latitude excess ground ice, HiRISE camera (NASA's Mars Reconnaissance Orbiter) science team meeting, Flagstaff, AZ.

**A.M. Bramson**, S. Byrne (March 2016), Implications of Martian excess ground ice stability. LPI Contribution No. 1903, p.2314, *47th LPSC*, The Woodlands, TX.

M.M. Sori, S. Byrne, J.N. Bapst, P. Becerra, **A.M. Bramson**, M.E. Landis (March 2016), A Wunda-full world? Testing the plausibility of carbon dioxide frost on Umbriel. LPI Contribution No. 1903, p.1053, *47th LPSC*, The Woodlands, TX.

— 2015 —

**A.M. Bramson** (November 2015), Widespread excess ice in Arcadia Planitia, Mars. SHARAD (NASA's Mars Reconnaissance Orbiter) and MARSIS (ESA's Mars Express) radar science team meetings, University of Iowa, Iowa City, IA.

**A.M. Bramson** (September 2015), Terraced craters: Windows into widespread excess ice across Arcadia Planitia. Oral presentation at the HiRISE (NASA's Mars Reconnaissance Orbiter) and CaSSIS (ESA's ExoMars Trace Gas Orbiter) camera science team meetings, Lake Myvatn, Iceland.

E. Martellato, G. Cremonese, A. Lucchetti, **A.M. Bramson**, S. Byrne (September 2015), Modeling of terraced craters on Mars. LPI Contribution No. 1861, p.1078, *Bridging the Gap III*, Freiburg, Germany.

**A.M. Bramson**, S. Byrne, S. Sutton, N.E. Putzig, E. Martellato, G. Cremonese, J.J. Plaut, J.W. Holt (March 2015), A study of Martian mid-latitude ice using observations and modeling of terraced craters. LPI Contribution No. 1832, p.1565, *46th LPSC*, The Woodlands, TX.

— 2014 —

**A.M. Bramson**, S. Byrne, N.E. Putzig, S. Mattson, J.J. Plaut, J.W. Holt (November 2014), Distribution and compositional constraints on subsurface ice in Arcadia Planitia, Mars. id.203.05, Oral presentation at the *46th Division of Planetary Sciences (DPS) Conference*, Tucson, AZ.

E. Martellato, G. Cremonese, A. Lucchetti, M. Massironi, F. Marzari, **A.M. Bramson**, S. Byrne, S. Mattson (November 2014), Ground ice on Mars: Numerical modelling of a terraced crater in Arcadia Planitia. id.203.06, *46th DPS Conference*, Tucson, AZ.

M. Nolan, **A.M. Bramson**, C. Magri (July 2014), Radar scattering functions using Itokawa as ground truth. p.408, *Asteroids, Comets, Meteors (ACM) 2014*, Helsinki, Finland.

**A.M. Bramson**, S. Byrne, N.E. Putzig, S. Mattson, J.J. Plaut, J.W. Holt (July 2014), Thick, excess water ice in Arcadia Planitia. LPI Contribution No. 1791, p.1042, *8th International Conference on Mars*, Pasadena, CA.

**A.M. Bramson**, S. Byrne, N.E. Putzig, S. Mattson, J.J. Plaut, J.W. Holt (March 2014), Thick, excess water ice in Arcadia Planitia, Mars. LPI Contribution No. 1777, p.2120, Oral presentation at the *45th LPSC*, The Woodlands, TX.

**A.M. Bramson** (February 2014), Thick, excess water ice in Arcadia Planitia, Mars. NASA's MRO HiRISE camera science team meeting, Tucson, AZ.

— 2013 —

**A.M. Bramson**, S. Byrne, N.E. Putzig, J.J. Plaut, S. Mattson, J.W. Holt (December 2013), Thick subsurface water ice in Arcadia Planitia, Mars. abstract #P43D-05, Oral presentation at the *2013 American Geophysical Union (AGU) Fall Meeting*, San Francisco, CA.

**A.M. Bramson** (August 2013), Terraced craters and subsurface radar reflections in Arcadia Planitia. NASA's MRO HiRISE camera science team meeting, University of Utah, Salt Lake City, UT.

**A.M. Bramson**, S. Byrne, N.E. Putzig, S. Mattson, J.J. Plaut (March 2013), Terraced craters and subsurface ice in Arcadia Planitia, Mars. LPI Contribution No. 1719, p.2905, *44th LPSC*, The Woodlands, TX.

— 2012 —

**A.M. Bramson**, K. Hess, and E.M. Wilcots (January 2012), Applying social networking and clustering

algorithms to galaxy groups in ALFALFA. id.329.07, Oral presentation at the *219<sup>th</sup> American Astronomical Society (AAS) Conference*, Austin, TX.

— 2011 —

**A.M. Bramson** and E.M. Wilcots, (August 2011), Using networking algorithms to assess the environment of galaxy groups. Oral presentation at the *21<sup>st</sup> Annual Wisconsin Space Conference*, La Crosse, WI.

**A.M. Bramson**, C.B. Phillips and J.P. Emery, (March 2011). A search for ongoing geologic activity on Jupiter's satellites. LPI Contribution No. 1608, p.1606, *42<sup>nd</sup> LPSC*, The Woodlands, TX.

**A.M. Bramson** and E.M. Wilcots, (January 2011), Using networking algorithms to assess the environment of galaxy groups. id.149.26, Vol. 43, *217<sup>th</sup> AAS Conference*, Seattle, WA.

— 2010 —

**A.M. Bramson**, C.B. Phillips and J.P. Emery, (August 2010). A search for ongoing geologic activity on Jupiter's satellites. Oral presentation at the SETI Institute colloquium, Mountain View, CA.

— 2009 —

**A.M. Bramson**, C. Magri, E.S. Howell, M.C. Nolan, P.A. Taylor, (October 2009), The Hayabusa spacecraft model of Itokawa: Lessons learned for radar shape models, id.50.04, *41<sup>st</sup> DPS Conference*, Fajardo, Puerto Rico.

**A.M. Bramson**, J.A. Pedersen, (April 2009), Stability of nanoparticles under simulated environmental conditions, Oral presentation at the *11<sup>th</sup> Annual UW-Madison Undergraduate Research Symposium*, Madison, WI.

**A.M. Bramson**, K.M. Metz, and J.A. Pedersen, (January 2009), Stability of metal nanoparticles under simulated environmental conditions, *2<sup>nd</sup> Annual Undergraduate Conference for Women in Physics*, Urbana, IL.

— 2008 —

**A.M. Bramson**, K.M. Metz and J.A. Pedersen, (April 2008), Stability of palladium nanoparticles under simulated environmental conditions, CHED #1131, *235<sup>th</sup> American Chemical Society (ACS) Conference*, New Orleans, LA.

— 2007 —

**A.M. Bramson**, K.M. Metz and J.A. Pedersen, (August 2007), Solution based growth of shaped gold nanoparticles, UW-Madison NSEC REU Poster Session, Madison, WI.