# Ali M. Bramson

Purdue University	BramsonA@purdue.edu
Dept. of Earth, Atmospheric, and Planetary Sciences (EAPS) 550 Stadium Mall Dr. West Lafavette, IN 47007	+1 (765) 494-0279
550 Stadium Man Dr. West Larayette, IN 47507	www.caps.purduc.cdu/oramson
FDUCATION	
University of Arizona Tucson A7	2012_2018
Ph D Planetary Sciences minor in Geosciences (Aug. 2018)	2012 2010
M.S. Planetary Sciences (Dec. 2015)	
University of Wisconsin-Madison, Madison, WI	2007–2011
B.S. Physics and Astronomy-Physics, and certificate in Computer Scie Graduated with distinction (honor's thesis): named on UW's Deau	ence (Dec. 2011) n's List 6 semesters
PROFESSIONAL/RESEARCH POSITIONS HELD	A 2020
Assistant Professor	Aug. 2020–present
Purdue University, Department of Earth, Atmospheric and Planetary Science	ces (EAPS)
Postdoctoral Research Associate	Sept. 2018–Aug. 2020
University of Arizona, Lunar and Planetary Laboratory (LPL)	1 0
Advisor: Prof. Lynn Carter	
Graduate Research Associate	Aug. 2012–Aug. 2018
University of Arizona, Lunar and Planetary Laboratory (LPL)	
Advisor: Prof. Shane Byrne	
Dissertation: "Radar Analysis and Theoretical Modeling of the Presence an	d Preservation of Ice on Mars"
Undergraduate Research Assistant	Dec. 2008–May 2012
University of Wisconsin-Madison, Astronomy Department	
Advisor: Prof. Eric M. Wilcots	
Senior Thesis: "Using networking algorithms to assess the environments of	galaxy groups"
REU Student	June 2010–Aug. 2010
SETI Institute	
Advisor: Dr. Cynthia Phillips	
Project: Searching for ongoing geologic activity on Jupiter's satellites	
REU Student	May 2009–Aug. 2009
Arecibo Observatory/Cornell University	
Advisors: Dr. Michael Nolan and Dr. Ellen Howell	
Project: Modeling of 25143 Itokawa to improve radar-based shape estimation	on methods
Undergraduate Research Assistant	June 2007–May 2009
University of Wisconsin-Madison, Nanoscale Science and Engineering Cer	nter (NSEC)
Advisors: Dr. Kevin M. Metz and Prof. Joel A. Pedersen	
Project: Environmental transformations of metal nanoparticles and solution	-based growth of nanoparticles

# HONORS and AWARDS

As Faculty:

- Ronald Greeley Early Career Award in Planetary Science, American Geophysical Union (2024)
- NASA Group Achievement Award for the I-MIM MDT, NASA HQ (2024)
- Faculty and Staff Diversity Award, Purdue College of Science (2024)
- Faculty Mentor Impact Award, Horizon Student Support Services, Purdue University (2023)
- Outstanding Contributions to Undergraduate Teaching by an Assistant Professor award, Purdue College of Science (2023)
- Ralph E. Powe Junior Faculty Enhancement Award, Oak Ridge Associated Universities (2022)
- EAPS Teaching Honor Roll (Fall 2020; Fall 2021; Spring 2022; Fall 2022; Fall 2023, Spring 2024, Fall 2024)

# As Postdoc:

• Named a 2019 "Forward Under 40" awardee by the Wisconsin Alumni Association (2019)

# As Graduate Student:

- Gerard P. Kuiper Memorial Award (2018)
- Student Travel Grant from NASA's MEPAG (Mars Exploration Program Analysis Group) to attend the Mars Workshop on Amazonian and Present-Day Climate (2018)
- University of Arizona (UA) Graduate and Professional Student Council Travel Grant (2018)
- LPI (Lunar and Planetary Institute) Career Development Award (2017)
- Wisconsin Alumni Association Presidents' Circle of Excellence (2017)
- LPL Shirley D. Curson Travel Award in Planetary Science (2015)
- UA Graduate and Professional Student Council Travel Grant (2015)
- Student Travel Grant from NASA's MEPAG to attend the 8th Intl. Conference on Mars (2014)
- Roy P. Drachman Galileo Scholarship for the College of Science Outstanding Graduate Student Teaching Award (2014)
- Lunar and Planetary Laboratory Teaching Award (2014)
- UA Galileo Circle Scholarship (2014 & 2017)
- Outstanding Student Paper Award at the American Geophysical Union (AGU) Fall Meeting (2013)

# As Undergraduate Student:

- 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)
- Phi Beta Kappa Honor Society (joined 2011)
- Wisconsin Space Grant Consortium Undergraduate Research Grant (2011)
- David H. Durra Scholarship for undergraduates pursuing degrees in the physical sciences (2011)
- Wisconsin Space Grant Consortium Undergraduate Scholarship (2010–2011)
- SETI Institute's 2010 Research Experiences for Undergraduates (REU) in Astrobiology
- Bernice Durand Undergraduate Scholarship for undergraduate women or minorities majoring in Physics or Astronomy (2009)
- Arecibo Observatory's 2009 Research Experiences for Undergraduates (REU)
- William F. Vilas Scholarship to freshman who demonstrate strong academic performance (2007)
- Verona Area Community Theater Fine Arts Scholarship (2007)

# FELLOWSHIPS

- NASA Earth and Space Science Fellowship (NESSF) (awarded 2016)
- National Science Foundation (NSF) Graduate Research Fellowship (2013–2016)
- Lieut. Colonel Kenneth Rondo Carson and Virginia Bryan Carson Graduate Fellowship (2012–2013)
- Arizona Space Grant Consortium Assistantship (2012–2013); combined with Carson
- NSF Undergraduate Research and Mentoring (URM) Fellow at UW-Madison (2008–2011)

# **GRANTS FUNDED**

As the PI:

- <u>Sources and Replenishment of Lunar Hydration on Diurnal Timescales</u>, funded by NASA's Lunar Data Analysis Program (LDAP)
- <u>Predicting Radar Observations of Mixed Ice/Dust Layers Through GPR Forward Modeling and Lab</u> <u>Experiments</u>, funded by NASA's Future Investigators in NASA Earth and Space Science and Technology (FINESST) program (Future Investigator: Riley McGlasson)
- An Analog Study of Dust-Covered Ice on Mars, funded by Oak Ridge Associated Universities
- <u>The Mass Balance of Polar Ice on Mars from the Migration of Spiral Troughs</u>, funded by NASA's Mars Data Analysis Program (MDAP)

# As a Co-I:

- <u>Building Endurance-P: A Purdue Lunar Science Working Group for the Endurance Mission Concept</u>, PI: James Keane, funded by JPL SURP
- <u>Enhancing Accessibility to Caves through Virtual Reality in Collaboration with the Classroom</u>, PI: Cauê Borlina, funded by Purdue Office of Experiential Education
- <u>Archeological Survey of the Ouiatenon Preserve</u>, PI: J. Colby Bartlett, funded by the Indiana Department of Natural Resources, Wabash River Heritage Corridor Fund (WRHCF)
- <u>The Climate Record of Polar Outliers on Mars</u>, PI: Michael Sori, funded by NASA's Mars Data Analysis Program (MDAP)
- <u>NASA Lunar Reconnaissance Orbiter Extended Mission 5</u>, Mini-RF instrument, PI: Wes Patterson
- <u>Microstructural evolution of solar system ices through sintering</u>, PI: Jamie Molaro, funded by NASA's Solar System Workings (SSW) Program
- <u>Mars Orbiter for Resources, Ices, and Environments (MORIE)</u>, PI: Wendy M. Calvin, funded by NASA's Planetary Mission Concepts Studies (PMCS) Program
- <u>Global Extension to Subsurface Water Ice Mapping (SWIM)</u>, PIs: Nathaniel E. Putzig and Gareth A. Morgan, funded by JPL to support NASA's Mars Exploration Program
- <u>Subsurface Water Ice Mapping (SWIM) in the Northern Hemisphere of Mars</u>, PIs: Nathaniel E. Putzig and Gareth A. Morgan, funded by JPL to support NASA's Mars Exploration Program

As Science Team Member:

• <u>NASA Lunar Reconnaissance Orbiter Extended Mission 4</u>, Mini-RF instrument science team, PI: Wes Patterson

# SPACECRAFT MISSION ACTIVITIES

- PI, proposal submitted to NASA's Artemis IV Deployed Instruments (pending)
- PI, ARIA-Luna, proposal submitted to NASA's Artemis III Deployed Instruments (not selected)
- Deputy PI, CryptEx, lunar mission proposal submitted to NASA's PRISM3 AO (not selected)

- Co-I, Lunar IMPROV, mission concept proposal submitted to NASA's PRISM3 AO (not selected)
- Assistant Co-Chair, Measurement Definition Team for the International Mars Ice Mapper (I-MIM), a collaborative concept in development by NASA, the Italian Space Agency (ASI), the Canadian Space Agency (CSA), and the Japan Aerospace Exploration Agency (JAXA)
- Co-I, NASA's Lunar Reconnaissance Orbiter (LRO) Miniature Radio Frequency (Mini-RF) radar instrument for Extended Science Mission (ESM) 5; Funded science team member for ESM 4
- Co-I, Farside GLASS, mission concept proposal submitted to NASA's PRISM1 AO (not selected)
- Invited member of the Caltech W. M. Keck Institute for Space Studies (KISS) "Next-Generation Planetary Geodesy" workshop
- Co-I, MORIE (Mars Orbiter for Resources, Ices, and Environments), a NASA planetary mission concept study (PMCS) for input to the 2023 Planetary Science Decadal Survey (selected)
- Co-I, COMPASS (Climate Orbiter for Mars Polar Atmospheric and Subsurface Science), mission concept proposed to the 2019 NASA Discovery Program AO (not selected)
- Selected participant of NASA's "PI Launchpad: Getting Your Mission Idea Off the Ground"
- Selected participant of the 2016 Planetary Science Summer School at NASA's Jet Propulsion Laboratory
  - o Role: Project/Proposal Manager
  - Mission Concept: New Frontiers-class Uranus orbiter mission
- Attended the Navigation and Ancillary Information Facility (NAIF)'s SPICE training workshop
- Produced 11 HiRISE Digital Terrain Models of Mars archived on the Planetary Data System
- Science team participant for NASA's Mars Reconnaissance Orbiter's (MRO) Shallow Radar (SHARAD) and High Resolution Imaging Science Experiment (HiRISE) instruments

# FIELD EXPERIENCE

- Ground Penetrating Radar data collection at 100, 200, 450, and 750 MHz at Hekla, Iceland
- Ground Penetrating Radar data collection at 80 and 160 MHz at the Kentland Crater impact structure
- Ice coring and Ground Penetrating Radar 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

# COMMUNITY COMMITTEES and REVIEWING ACTIVITIES

- Member of the Geosciences Panel for the National Academies of Sciences, Engineering, and Medicine study: "A Science Strategy for the Human Exploration of Mars" (2024–2025)
- Member of the AAS DPS Federal Relations Subcommittee (2019–present)

- Peer Reviewer for Nature, Nature Astronomy, Geophysical Research Letters, Science Advances, Icarus, Advances in Space Research, Radio Science, Journal of Geophysical Research: Planets, Geoscience and Remote Sensing Letters, and Planetary Science Journal
- Reviewer for the Ice and Climate Evolution Science Analysis group (ICE-SAG) report conducted by NASA's Mars Exploration Program Analysis Group (MEPAG) (2019)
- Reviewer for the Geological Society of America (GSA) Planetary Geology Division's Dwornik Award
- Served/Serves on various NASA Review Panels

# **CONFERENCE and WORKSHOP SERVICE**

- Co-chair, Eleventh Community Workshop on Achievability and Sustainability of Human Exploration of Mars (AMXI) (2025)
- Member of the organizing committee for the 2<sup>nd</sup> Advancing IDEA in Planetary Science (2024)
- Member of the science organizing committee for 56<sup>th</sup> Division of Planetary Sciences (DPS) (2024)
- Member of the science organizing committee for the 10<sup>th</sup> International Conference on Mars (2024)
- Member of the conference and science organizing committees for the 8<sup>th</sup> International Conference on Mars Polar Science and Exploration (2024)
- Invited participant, Tenth Community Workshop on Achievability and Sustainability of Human Exploration of Mars (AMX) (2023)
- Co-convener of the "Surface Processes on Rocky and Icy Bodies across the Solar System" session at the 2022 AGU Fall Meeting (hosted within the Earth and Planetary Surface Processes Section; cross-listed with Planetary Sciences) (2022)
- Co-convener of the "Planetary Permafrost" session at the 2021 Regional Conference on Permafrost (RCOP) and 19th International Conference on Cold Regions Engineering (ICCRE) (2021)
- Invited Member and Short Course Speaker for the Caltech W. M. Keck Institute for Space Studies (KISS) "Next-Generation Planetary Geodesy" workshops (2021)
- Member of the Science Organizing Committee for the Seventh International Conference on Mars Polar Science and Exploration (2019)
- Session Chair for a variety of conferences, including: LPSC, DPS, Mars Polar Science and Exploration, Amazonian Climate, etc. (2016–present)

# INSTITUTIONAL/DEPARTMENTAL SERVICE

)	Purdue	EAPS Department Service	
	0	Diversity, Equity, and Inclusion Committee	2021-present
		Chair	2023-present
	0	Seminar Committee	2022-2023
	0	Graduate Committee	2020-2021
	0	Honors Committee	2020-2021
)	Purdue	University Service	
	0	Purdue Sloan Center for Systemic Change: Faculty Champion	2024-present
	0	Faculty Senate	2024-present
		<ul> <li>+ Faculty Affairs Committee</li> </ul>	2024-present
	0	Search committee for College of Science cluster hire in Origins of Life	2022-2023
	0	Horizons Student Support Services: Faculty Mentor	2020-present
)	Purdue	Mars Desert Research Station Crews: Research Proposal Reviewer	2024-present
)	Wiscon	nsin Alumni Association Tucson Chapter: President	2014-2018

•	UA Graduate and Professional Student Council: Travel Grant Reviewer	2015
•	UA LPL Graduate Student Leadership Activities	
	• Representative to the faculty	2016-2018
	<ul> <li>Prospective graduate student visit coordinator</li> </ul>	2014, 2015
	<ul> <li>Grad student website webmaster</li> </ul>	2014-2017
	<ul> <li>Lunar and Planetary Laboratory Conference (LPLC) session chair</li> </ul>	2014, 2016, 2017
	<ul> <li>LPL Bratfest coordinator</li> </ul>	2012-2017
•	Society of Physics Students, UW-Madison chapter	
	• President	2010-2011
	• Vice President	2009–2010
	<ul> <li>Events Coordinator</li> </ul>	2008-2009
	• Member	2007-2012
•	The Ogg Association at UW-Madison: Educational Programs Coordinator	2007-2008

# **GROUP MANAGEMENT and INTERPERSONAL RELATED ACTIVITIES and TRAININGS**

- Equity in Graduate Education, series of three workshops (6 hrs) hosted by the Equity in Graduate Education Resource Center (equitygraded.org)
- Neurodiversity in the College Classroom: Improving Educator and Peer Support, workshop sponsored by Purdue's Disability Resource Center Faculty Advisory Committee
- Green Zone Training, hosted by Purdue's Veteran's Success Center
- Inclusive Mentoring workshop, hosted by Purdue's Butler Center for Leadership Excellence
- Trans-Inclusion Training, hosted by Purdue's LGBTQ Center
- Verbal De-escalation Training, hosted by the Purdue Police Department
- Participant in the Midwest Equity in Geosciences Alliance (MEGA) URGE (Unlearning Racism in Geoscience) pod and a faculty advisor for the Purdue EAPS grad student/postdoc pod
- Participant of the Purdue EAPS department Environmental Racism reading club
- Bystander intervention training to stop anti-Asian/American and xenophobic harassment, hosted by AAJC (Asian Americans Advancing Justice) and Hollaback!
- Intergroup Dialogue Facilitation, Office of Inclusion and Multicultural Engagement, U. of Arizona
- Safe Zone Trainings, hosted by Purdue University; U. of Arizona; UW-Madison
- Workshops by the Gay, Lesbian, and Straight Education Network (GLSEN) of South-Central Wisconsin

# **TEACHING AND CURRICULUM DEVELOPMENT**

EAPS 47700: Earth and Planetary GIS (Purdue)	Spring 2024–2025
• Instructor (upper-level undergraduate skills course)	
EAPS 35300: Earth Surface Processes (Purdue)	Fall 2020–2024
• Instructor (undergraduate majors course with lab)	
• Co-instructed with Darryl Granger, 2020–2023	
EAPS 60200: New Grad Student Seminar (Purdue)	Fall 2020–2023
• Instructor (graduate student seminar course)	
Co-instructed with Brandon Johnson, David Minton, Xiaotao Yang	
EAPS 10000: Planet Earth (Purdue)	Spring 2022
• Instructor (general education undergraduate science course)	
Entering Research, 2 <sup>nd</sup> Edition (Publisher: Macmillan; Editors: J. Branchaw, A. Bu	tz, and A. Smith)

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<ul> <li>https://store.macmillanlearning.com/us/product/Entering-Research/p/131926</li> </ul>	53682	
• <u>Intps://store.machinianearining.com/us/product/Entering-Research/p/1519205082</u>		
Center for the Improvement of Mentorea Experiences in Research (CIMER)		
<ul> <li>Master Consultant: Trained to help individuals and institutions develop their</li> </ul>	r own implementation	
plan of theoretically-grounded, evidence-based, and culturally-responsive re	search 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 re	esearchers at the UA	
• Coordinated and mentored other graduate student facilitators on learner-cent	tered 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 introdu	ctory physics classes	

Author of active learning materials contributed to this curriculum to support undergraduate

• Participated in weekly training seminars on teaching strategies

# STUDENT AND POSTDOC MENTORSHIP

and graduate research trainees,

PhD Students Supervised	
• Samuel Harris (Purdue EAPS)	Fall 2024–present
Santa Lucía Pérez Cortés (Purdue EAPS)	Fall 2022–present
• Kris Laferriere (Purdue EAPS)	Fall 2020–present
• Riley McGlasson (Purdue EAPS)	Fall 2020–Fall 2024
MS Students Supervised	
• <i>Dong Jae Lee</i> (Purdue EAPS GDSP Program)	Fall 2023–Spring 2024
Postdocs Supervised	
• Kristel Izquierdo (Purdue EAPS)	Spring 2021–Spring 2024
Undergraduate Independent Study Students Supervised	
• Donnie Hutchison (Purdue EAPS)	Summer 2024–present
• Amanda Holmes (Purdue EAPS)	Spring 2024–present
• Jacob Ehman (Purdue AAE, with EAPS minor)	Spring 2024–Fall 2024
Adrienne Lehman (Purdue Physics)	Spring 2024
Kyleshaquill Fred Velez (UPR Mayagüez Geology)	Fall 2023–Fall 2024
Christina Sowinski (Purdue EAPS)	Fall 2022-present

• Alexander Gleason (Purdue Physics)	Fall 2022–Spring 2024
• Sara Cuevas Quiñones (Purdue Physics & EAPS)	Fall 2021–Spring 2024
Honors College scholarly project and REAL Scholars Program mentor	1 0
• Ashwin Nomi (Purdue AAE)	Fall 2021–Spring 2022
• Holden Gehringer (Purdue EAPS)	Summer 2020–Fall 2021
• Nachiket Watane (Purdue AAE)	Spring 2021
• Helen Herring (Purdue AAE & EAPS)	Spring 2021
• Briar Oualizza (Purdue EAPS)	Spring 2021
• Emma Rogers (Purdue EAPS)	Spring 2021
<ul> <li>Phylindia Gant (Purdue EAPS)</li> </ul>	Fall 2020
<ul> <li>Claire W Cook (II Arizona)</li> </ul>	2017-2019
Advisor for Senior Honors Thesis and NASA Arizona Space Grant Conso	rtium Internshin
The fiber for Senior Honors Thesis and Terior Thirdena Space Chart Conso	
Graduate Committees	
• Addison Curtis (Purdue EAPS, MS)	2024-present
• Giovanni Bacon (Purdue EAPS, PhD)	2023–present
• Xavier Morgan-Lange (Purdue Mechanical Engineering, PhD)	2023–present
• Ian Pamerleau (Purdue EAPS, PhD)	2022–present
• Stephanie Menten (Purdue EAPS, PhD)	2021–present
• Hannah Gibson (Purdue EAPS, MS)	2019–2021
External Examination Committees	
• Shannon Hibbard (Western University, Ontario, Canada)	2021
INVITED TALKS	
INVITED TALKS     Department Seminar	May 2024
<ul> <li>INVITED TALKS</li> <li>Department Seminar Stanford University Geophysics Department, Stanford, CA</li> </ul>	May 2024
<ul> <li>INVITED TALKS</li> <li>Department Seminar Stanford University Geophysics Department, Stanford, CA</li> <li>DPS Plenary Roundtable Discussion – Invited Panelist</li> </ul>	May 2024 October 2023
<ul> <li>INVITED TALKS</li> <li>Department Seminar Stanford University Geophysics Department, Stanford, CA</li> <li>DPS Plenary Roundtable Discussion – Invited Panelist 55<sup>th</sup> Division of Planetary Sciences, San Antonio, TX</li> </ul>	May 2024 October 2023
<ul> <li>INVITED TALKS</li> <li>Department Seminar Stanford University Geophysics Department, Stanford, CA</li> <li>DPS Plenary Roundtable Discussion – Invited Panelist 55<sup>th</sup> Division of Planetary Sciences, San Antonio, TX</li> <li>Space Science Seminar Series</li> </ul>	May 2024 October 2023 May 2023
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•	Planetary Science Decadal Survey Panel on Mars	Nov. 2020
	The National Academy of Science, Space Studies Board	
•	Physical Geography Research Seminar Series	Oct. 2020
	University of Sheffield, Sheffield, United Kingdom	
•	LPI Virtual Seminar	July 2020
	Lunar and Planetary Institute, Houston, TX	
•	Department Colloquium, Department of Physics	Apr. 2020
	University of Arizona, Tucson, AZ	
•	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	Mar. 2019
	University of Idaho, Moscow, ID	
•	EAS Seminar, Department of Earth and Atmospheric Sciences	Mar. 2019
	Georgia Institute of Technology, Atlanta, GA	
•	Departmental Seminar, Department of Physics	Mar. 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	Mar. 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

<u>Underlined</u> = trainee with Bramson as an advisor ( $\mathbf{G}$  = grad student;  $\mathbf{U}$  = undergrad student;  $\mathbf{P}$  = postdoc) \* = shared first-authorship

- [42] <u>McGlasson, R.A.<sup>G</sup></u> and A.M. Bramson (In Revision with Icarus) Experimental Analysis of the Radar Response of Analog Martian Dusty Ice Layers.
- [41] <u>Pérez Cortés, S.L.<sup>G</sup></u>, A.M. Bramson, <u>C.M. Sowinski<sup>U</sup></u>, M. Day (In Revision with JGR-Planets) Scour pits in the Medusae Forsae Formation and Olympus Mons Region on Mars.

- [40] <u>Laferriere, K.L.<sup>G</sup></u>, A.M. Bramson, <u>A. Gleason<sup>U</sup></u> (Accepted to JGR-Planets) Quantities of ballistically hopping water molecules on the Moon: consistent with exospheric hydration observations.
- [39] <u>Fred-Velez, K.<sup>U</sup></u>, <u>S.L. Pérez Cortés<sup>G</sup></u>, A.M. Bramson, T.R. Hudgins (2025) <u>Mapping of Potential Mass</u> <u>Wasting on Enceladus</u>. *Icarus*, 430, 116471, doi:10.1016/j.icarus.2025.116471.
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- [36] Bramson, A.M., A.C. Pascuzzo, P. Becerra, J.F. Mustard (2025), <u>Development and evolution of icy layer</u> <u>outcrops on Mars' north polar ice cap: A sublimation-based framework</u>. *Journal of Geophysical Research: Planets*, 130, e2024JE008360, doi:10.1029/2024JE008360.
- [35] <u>McGlasson, R.A.<sup>G</sup></u>, M.M. Sori, A.M. Bramson, D.E. Lalich (2024), <u>Radar sounding reveals common</u> <u>evolutionary history between the north polar layered deposits and outlier ice deposits on Mars</u>. *Geophysical Research Letters*, 51, 16, doi:10.1029/2024GL109057.
- [34] Laferriere, K.L.<sup>G</sup>, A.M. Bramson, I.B. Smith (2024), <u>Mars' North Polar Spiral Trough Migration Paths</u> as revealed through 3D Radar Mapping. Journal of Geophysical Research: Planets, 129, 8, doi:10.1029/2023JE007996.
- [33] Menten, S.M., M.M. Sori, A.M. Bramson, T.A. Nordheim, R.J. Cartwright (2024), <u>Volatile transport on</u> <u>Ariel and implications for the origin and distribution of carbon dioxide on Uranian moons</u>. *Journal of Geophysical Research: Planets*, 129, 7, doi:10.1029/2024JE008376.
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## **BOOK CHAPTERS**

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### REPORTS

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### WHITE PAPERS

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# **CONFERENCE ABSTRACTS/PRESENTATIONS**

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- [24] Sori, M.M., 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, 48<sup>th</sup> LPSC, The Woodlands, TX.
- [23] Elder, C.M., 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.

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- [20] Bramson, A.M., S. Byrne (March 2016), Implications of Martian excess ground ice stability. LPI Contribution No. 1903, p.2314, 47<sup>th</sup> LPSC, The Woodlands, TX.
- [19] Sori, M.M., 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, 47<sup>th</sup> LPSC, The Woodlands, TX.

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- [17] Bramson, A.M., 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, 46<sup>th</sup> LPSC, The Woodlands, TX.

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- [15] Martellato, E., 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, 46<sup>th</sup> DPS Conference, Tucson, AZ.
- [14] Nolan, M., A.M. Bramson, C. Magri (July 2014), Radar scattering functions using Itokawa as ground truth. p.408, *Asteroids, Comets, Meteors (ACM)* 2014, Helsinki, Finland.
- [13] Bramson, A.M., 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, 8<sup>th</sup> International Conference on Mars, Pasadena, CA.
- [12] Bramson, A.M., 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 45<sup>th</sup> LPSC, The Woodlands, TX.

- [11] Bramson, A.M., 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.
- [10] Bramson, A.M., 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, 44<sup>th</sup> LPSC, The Woodlands, TX.

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[9] Bramson A.M., 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.

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- [8] **Bramson, A.M.** 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.
- [7] Bramson, A.M., 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.
- [6] **Bramson, A.M.** 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.

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[5] Bramson, A.M., 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.

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- [4] Bramson, A.M., 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.
- [3] **Bramson, A.M.**, 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.
- [2] Bramson, A.M., K.M. Metz, and J.A. Pedersen, (January 2009), Stability of metal nanoparticles under simulated environmental conditions, 2nd Annual Undergraduate Conference for Women in Physics, Urbana, IL.

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[1] Bramson, A.M., 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.

# OUTREACH

<ul> <li>Gave public talk to a country club in Madison, WI</li> <li><i>Kiwanis Club of Lafayette</i></li> <li>Gave public talk on geology in the Solar System to local Kiwanis' members</li> <li>In the Shadow: A Greatest Spectacle</li> <li>Panelist at the Indianapolis Motor Speedway total solar eclipse event</li> <li>How We Think: Solar Eclipse</li> </ul>
Kiwanis Club of LafayetteMay 2024• Gave public talk on geology in the Solar System to local Kiwanis' membersApril 2024In the Shadow: A Greatest SpectacleApril 2024• Panelist at the Indianapolis Motor Speedway total solar eclipse eventApril 2024How We Think: Solar EclipseApril 2024
<ul> <li>Gave public talk on geology in the Solar System to local Kiwanis' members</li> <li>In the Shadow: A Greatest Spectacle</li> <li>Panelist at the Indianapolis Motor Speedway total solar eclipse event</li> <li>How We Think: Solar Eclipse</li> <li>April 2024</li> </ul>
In the Shadow: A Greatest SpectacleApril 2024• Panelist at the Indianapolis Motor Speedway total solar eclipse eventApril 2024How We Think: Solar EclipseApril 2024
Panelist at the Indianapolis Motor Speedway total solar eclipse event     How We Think: Solar Eclipse     April 2024
How We Think: Solar Eclipse April 2024
<ul> <li>Panelist for event hosted by the Purdue Honors College's Leading Women Towards Space Careers</li> </ul>
Bringing Mars to the Classroom Jan. 2024
• Presented with NASA HQ to an international forum of teachers brought together by the U.S.
Department of State and Take Action Global
Climate Action Day Nov. 2023
<ul> <li>Spoke alongside people from NASA HQ at this event hosted by the Climate Action Project</li> </ul>
Boston Museum of Science July 2023
<ul> <li>Book club Q&amp;A about a career in space science with 4<sup>th</sup>-8<sup>th</sup> grade students</li> </ul>
Together to Mars for the Benefit of the Earth; NASA HQ+Heritage International School Moldova May 2022
<ul> <li>Spoke to dozens of Ukranian children over Zoom about Mars exploration</li> </ul>
Astronomy on Tap: Cradle of Astronauts 2021
• Faculty advisor for this local community outreach series, started and ran by EAPS grad students
• AoT Featured Speaker, Nov. 2021
National 4-H STEM Summit PanelSept. 2021
<ul> <li>Invited panelist as a professional in the space exploration industry for the 2021 National</li> </ul>
4-H STEM Summit panel on careers related to space
Indiana Family Star Party July 202
• Invited speaker for Indiana's largest annual gathering of amateur astronomers and families
The Diaries of Space Explorers Feb. 2021
• Interviewed for this podcast series aimed at bridging the gap between people from the
space sector and the general public
Puraue EAPS Mars Rover Perseverance Landing Watch Party       Feb. 2021         Feb. 2021       Feb. 2021
• Livestream panelist Maklatan Elawantan Vintual STEAM Canoon Day
Mablelon Elementary Virtual STEAM Career Day Nov. 2020
• Presented about planetary science and academic careers for 150 elementary school students
Superneroes of science Sepi. 2020
• Interviewed for this youtube/podcast series for initiale and high school students/teachers
Dosion Museum of Science July 2020
• Book club Q&A about a career in space science with so students, aged 10–15 years out Bringing the Universe to America's Classrooms K 12 instructional resources by PRS/NASA 2018 2010
Content advisor https://www.phslearningmedia.org/universe/
• Content advisor, https://www.postearningmedia.org/universe/
Gave public talk for 115 people in Tucson Arizona
Roise State's First Friday Public Astronomy Event March 2010
Gave public talk for over 150 people in Boise Idaho
"From Madison to Mars" nublic talk at the Verona Area Community Theater Oct 2018
Gave public talk for 90 people in my hometown of Verona Wisconsin
Wisconsin Science Festival
• Panelist for the "Mars Invades Madison" event about life on Mars

Summer Science Saturday at LPL	July 2017
• Discussed craters and NASA's HiRISE camera with the public	
Core Knowledge Charter School	Dec. 2016
• Spoke with 44 third-graders about life as a planetary scientist	
Deep Astronomy, Live	Nov. 2016
• Panelist for the "Footsteps to Mars" live web broadcast about water on	n Mars
Glacier Edge Elementary School	Oct. 2016
• Spoke with 174 fourth and fifth-graders about life as a planetary scient	tist
Tucson Festival of Books	March 2013, 2015, 2016
• Ran activities on comparative planetology, meteorite hunting, exoplan characterization, and science art for the public	et discovery and
The Art of Planetary Science	Dec. 2013, Oct. 2015, Feb. 2017
• Volunteered with and submitted "data art" to this exhibition to bring to and artists in Tucson	ogether scientists
Space Drafts Public Talk Series, Borderlands Brewery	Feb. 2015
• Gave public lecture on "Crazy Craters!!! Windows into Martian Ice"	
Astronomy Ambassador for the American Astronomical Society	Nov. 2014
• <u>http://aas.org/outreach/aas-astronomy-ambassadors-program</u>	
Arizona Science and Astronomy Expo	Nov. 2012
• Explained an impact cratering demo for the public	
Sugar Creek Elementary School	Nov. 2011
• Read books about the Moon and the Mars rovers and explained variou	s astronomical
phenomena to three second-grade classes.	
EAGLE Middle School Science Mentor Program (Fitchburg, WI)	Spring 2011
• Mentored an 8 <sup>th</sup> grade student	
Universe in the Park	Summer 2010, 2011
• Gave 30-minute astronomy presentations at WI state parks, proceeded	by telescope viewings
"SETI Gurls"	Summer 2010
• Co-created this video about the SETI REU program that has over 11,0 and was featured on NPR's Science Friday, the Huffington Post and A	00 views on YouTube, stronomy Magazine.
SETIcon	Aug. 2010
• Ran planetarium shows and helped with a Build-Your-Own Galileosco	ope workshop
Wonders of Physics	Feb. 2008 & 2009
• Volunteered at this program for the public and supervised/explained to	ppics in the physics museum

# PRESS COVERAGE

- Q&A: Insights of a Mars Scientist, The Exponent, July 7, 2024
- *"What lies beneath: Mars' subsurface ice could be a key to sustaining future habitats on other planets,"* Purdue News feature, June 8, 2024
- Interviewed on The Janice Dean Podcast, Fox News Radio, April 7, 2024
- Live tv interview with Fox59 Indianapolis, March 8, 2024
- Interviewed by Fox19 Cincinnati for feature about IMS Solar Eclipse event, March 6, 2024
- AP video about the IM-1 lunar landing featured on over 200 broadcasts across the country, becoming the top-3 highest producing AP video by Purdue
- Live tv interview with Fox Weather about the solar eclipse, Feb. 8, 2024
- Live radio interview with Morning Wave in Busan, the flagship show on BeFM, a public radio station in South Korea, Jan. 10, 2024

- Interviewed on live radio for 630 CHED radio in Edmonton and QR radio in Calgary, Jan. 5, 2024
- Interviewed by National Public Radio (NPR), Texas Standard, Jan. 4, 2024
- Live radio interview with KCBS San Francisco, Jan. 1, 2024
- Featured on the evening news about space missions coming in 2024, WISHTV, Dec. 29, 2023
  - Also on the news for WCVB (ABC Boston), WBAL (NBC Baltimore), WISN (ABC Milwaukee), WESH (ABC Orlando), KCRA (NBC Sacramento), KOAT (ABC Albuquerque), WLWT (NBC Cincinnati), WLKY (CBS Louisville), and dozens of others
- *"From the Moon's south pole to an ice-covered ocean world, several exciting space missions are slated for launch in 2024", article authored for The Conversation, Dec. 26, 2023* 
  - Syndicated to CBS News, Discover Magazine, Inverse, and dozens of other media outlets
- "Purdue professor weighs in on Artemis I launch", WTHR 13 Indianapolis, Nov. 16, 2022
- "Deciphering the Cryptic Mystery of Buried Ancient Lava Flows", AAS Nova, September 28, 2022
- "A new explanation for the reddish north pole of Pluto's moon Charon", Phys.org, September 7, 2022
- Quoted in "SpaceX's Starship is ready for its first trip into space", Freethink, January 8, 2022
- Interviewed by MIT Technology Review about SpaceX's Starship, December 7, 2021
- Live guest on morning shows, WMBD/WYZZ News Peoria & WSLM Radio Louisville, March 4, 2021
- Interviewed by news writer for WBAA public radio about ice on Mars
- Featured in Purdue News about the results of the Subsurface Water Ice Mapping (SWIM) Project
- Interviewed by Futurism about the Mars Krispy Kreme donut in honor of the Perseverance rover landing, February 18, 2021
- Interviewed by National Geographic, Science News, and others about the possibility of liquid water under the south pole of Mars, September 28, 2020.
- 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