

AMY J. WILLIAMS

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Education

Ph.D. in Geology

University of California, Davis - September 2014
Advisor: Dr. Dawn Y. Sumner

M.Sc. in Earth and Planetary Sciences

University of New Mexico - August 2009
Advisor: Dr. Laura J. Crossey

B.S. in Earth & Environmental Science

Furman University - June 2007
Advisor: Dr. C. Brannon Andersen

Professional Experience

Associate Professor

Department of Geological Sciences, University of Florida, 2024-present.

Assistant Director

Astraeus Space Institute at the University of Florida, 2024-present.

Assistant Professor

Department of Geological Sciences, University of Florida, 2018-2024.

Assistant Professor

Department of Physics, Astronomy, and Geosciences, Towson University, 2015-2018.

Participating Scientist, NASA Mars Science Laboratory *Curiosity* rover mission

University of Florida, 2022-present

Participating Scientist, NASA Mars 2020 *Perseverance* rover mission

University of Florida, 2020-present

- DEIA Working Group (2021- *present*)
- Biosignatures Working Group (2021- *present*)
- Long Term Planner (LTP) (2021-*present*)
- Campaign Science Lead for the Delta Front Campaign (2022)

Collaborator, Sample Analysis at Mars (SAM) Instrument team, NASA Mars Science Laboratory rover mission

NASA Goddard Space Flight Center, 2015 - 2022.

Currently serve on the NASA Mars Science Laboratory (*Curiosity*) rover mission as a science team member and member of the SAM instrument team. Conduct organic geochemistry experiments to determine the preservation of organic biosignatures in Mars analogous substrates and environments investigated by the *Curiosity* rover. Group lead on the TMAH thermochemolysis wet chemistry experiment onboard the SAM instrument.

Mars sedimentology and stratigraphy

NASA Curiosity rover science team member, 2009 - present.

Used the rover Curiosity, remote sensing images, and terrestrial analog sites to constrain sedimentary processes on Mars and to interpret the geological history of Gale Crater. Collaborator on the Curiosity mission with the following specific responsibilities:

- Glen Torridon (Clay Unit) Campaign Planning Group (2017-2020)
- Vera Rubin (Hematite) Ridge Campaign Planning Group (2017-2018)
- Rock Classification Working Group, member (2014)
- Gale Mapping Working Group, member (2012)
- Landing Site Working Group, member (2010-2011)

Postdoctoral Research Associate

NASA Goddard Space Flight Center, 2014 - 2015.

Served on the NASA Mars Science Laboratory (Curiosity) rover mission as a science team member and member of the SAM instrument team. Conducted organic geochemistry experiments to determine the preservation of chemical biosignatures in iron-dominated environments as an analog for martian environments investigated by the Curiosity rover.

Proposals, Grants, & Fellowships

Total Individual Funding Obtained (2011-present) \$3,076,400

Florida Space Institute Space Research Initiative

“Organic Matter Character of Lunar Regolith used as Media for Plant Growth”

PI-AJ Williams – 2024-2025, Total budget \$61,784

NASA Interdisciplinary Consortia for Astrobiology Research

“ABOVE & BELOW: AstroBiological inVEstigation of Biosignatures Emblematic of Life on Ocean Worlds”

Co-I – AJ Williams – 2023-2028 UF Total budget \$6,390,993; Co-I budget \$631,639

NASA Habitable Worlds Program

“Habitability Estimates for Heterotrophic Metabolisms in Wet-to-Dry Transient Environments on Noachian Mars (HabMars)”

Co-I – AJ Williams – 2023-2026, UF budget \$244,280

NASA Mars Science Laboratory Rover Participating Scientist Program

“Delineating the Sources of Martian Organic Molecules”.

PI – AJ Williams – 2022-2025, Total budget \$333,511.

Florida Space Institute Space Research Initiative

“*Ad Astra per Lutum*: Leveraging Planetary Analogs to Develop New Technologies in Martian Organic Molecule Detection”

PI-AJ Williams – 2021-2022, Total budget \$98,467.

Florida Space Grant Consortium - Florida Space Research Program

“Biosignatures in Iron Oxidizing Microbes {BIOMe} - A Study on Metabolic Processes Preserved as Biosignatures from Iron-Metabolizing Organisms”.

PI-AJ Williams – 2021-2022, Total budget \$24,979.

NASA Mars 2020 Rover Participating Scientist Program

“Seeking Organic and Textural Signs of Ancient Life in Jezero Crater with the Mars 2020 Rover Payload”.

PI – AJ Williams – 2021-2024, Total budget \$304,311.

Jet Propulsion Laboratory Research and Technology Development Fund

“SCHAN: Analysis of biomolecules from resilient microorganisms using supercritical CO₂ and subcritical H₂O”.

External collaborator – AJ Williams, 2021-2024, UF budget \$36,695.

NSF IUSE: GEOPaths Program

“GP-GO: GeoScientists Promoting Accessible Collaborative Education (GEOSPACE)”.

Co-PI – AJ Williams – 2020-2022, Total budget \$391,538.

Florida Space Institute Space Research Initiative

“TMSH Thermochemolysis: The Next Generation in Extraterrestrial Organic Molecule Detection”.

PI – AJ Williams – 2019-2020, Total budget \$68,702

NASA Exobiology Program

“Discovering biosignatures in manganese deposits on Mars with rover payload Instruments”.

Co-I – AJ Williams – 2018-2019, Total budget \$200,000.

Towson University Faculty Development and Research Committee (FDRC) Award

“Molecular Structure of a Metabolic Biosignature”.

PI – AJ Williams – 2017-2018, Total Budget \$5,592

Fisher College of Science and Mathematics General Endowment Funds

“Developing interdisciplinary authentic research experiences in urban environments with geoscience and environmental science courses”.

PI – AJ Williams 2017-2018, Total budget \$20,000

Fisher College of Science and Mathematics Research Equipment Funds

For purchase of a Cressington 108 Auto Sputter Coater.

PI- AJ Williams 2017, Total budget \$8,500

Fisher College of Science and Mathematics General Endowment Funds

“Building a collaborative culture and developing resources for interdisciplinary environmental and earth science research in urban environments”.

PI- AJ Williams 2016-2017, Total budget \$25,857

National Science Foundation Major Research Instrumentation Award

“MRI: Acquisition of a Field Emission Scanning Electron Microscope with STEM and EDS Capabilities for Interdisciplinary Research and Education at Towson University”.

Co-I AJ Williams 2016-2019, Total budget \$530,545

NASA Earth and Space Sciences Fellowship

“Geobiology of Acid-Saline Systems: Implications for Early Martian Habitats” 2011-2014,
Total budget \$90,000

Durrell Funds Award

UC Davis Earth & Planetary Sciences, 2010-2013

**Sevilleta Long Term Ecological Research program Graduate Student Fellowship
(Twice)**

2008-2009, Total budget \$6,000

New Mexico Geological Society Grants-in-Aid Award, 2008-2009

**Graduate and Professional Student Association Student Research Allocations
Committee Award, and Office of Graduate Studies Research, Project and Travel
Grant Award**

University of New Mexico, both in 2009

New Mexico Water Resources Research Institute Graduate Student Fellowship

2008, Total budget \$5,000

**Advisee
Awards &
Funding**

2024		
JJ Ruse	UF University Scholars Award	\$1,750
Ben Siew	UF University Scholars Award	\$1,750
Emersyn Slaughter	UF Emerging Scholars Program	\$1,000
2023		
Denise Buckner	Florida Space Grant Consortium Dissertation and Thesis Improvement Fellowship	\$5,000
Lydia Kivrak	Florida Space Grant Consortium Dissertation and Thesis Improvement Fellowship	\$4,351
Phylindia Gant	Florida Space Grant Consortium Travel Grant	\$1,760
2022		
Alexa Goldberg	UF University Scholars Award	\$2,250
Haley Boles	Florida Space Grant Consortium Travel Grant	\$1,695
2021		
Phylindia Gant	Board of Education Summer Fellowship Program	\$1,000
Eli Prescott	UF University Scholars Award	\$2,250
Janelle Roach	UF University Scholars Online Award	\$2,250
2020		
Lauren Judge	Florida Space Grant Consortium Masters Fellowship	\$8,992
Chance Sturup	UF College of Liberal Arts and Sciences Scholars Award	\$3,000
2017		
JoAnna Marlow	TU Fisher College Undergraduate Research Grant	\$117
Chris Cook	TU Fisher College Undergraduate Research Grant	\$500
2016		
Jeremy Becraft	TU Fisher College Undergraduate Research Grant	\$360
Ryan Grams	TU Office of Undergraduate Research Award	\$180
Shane Evans	TU Office of Undergraduate Research Award	\$180

Derek Seibel	TU Fisher College Undergraduate Research Grant	\$500
2015		
Tim Bredder	TU Fisher College Undergraduate Research Grant	\$126
	TU Office of Undergraduate Research Award	\$250

Awards & Honors

Scialog: Signatures of Life in the Universe Fellow, 2023

UF Provost's Excellence Award for Assistant Professors, 2021-2022

UF College of Liberal Arts and Sciences Faculty Adviser/Mentor of the Year Award Nomination, 2021-2022

UF Research Promotion Initiative Award, 2021

Maryland Academy of Sciences Outstanding Young Scientist Award Nomination, 2017

Best Oral Presentation Award

Interdisciplinary Graduate and Professional Student Symposium Dean's Prize, Division of Mathematical and Physical Sciences, UC Davis, 2012

Astrobiology Science Conference Travel Award, 2012

Graduate Student Association Travel Award, UC Davis, 2011

Lunar & Planetary Institute Career Development Award, 2011

First International Conference on Mars Sedimentology and Stratigraphy Travel Award, 2010

Wanek Graduate Scholarship Award, UNM, 2009

Graduate and Professional Student Association Scholar Award, UNM, 2009

New Mexico Geological Society Best Student Poster Award, 2009

Earth & Planetary Sciences Outstanding TA Award, UNM, 2009

Susan Deese-Roberts Teaching Assistant of the Year Award Nomination, UNM, 2009

American Geophysical Union, Hydrology Section Outstanding Student Paper Award, 2009

Earth & Planetary Sciences Geology Alumni Scholarship Award, UNM, 2008

Earth & Environmental Sciences Research Award, Furman University, 2007

Journal Articles

* = graduate student advisee

Submitted/ In Review

- 62) Fornaro, T. et al. Evidence for polycyclic aromatic hydrocarbons detected in sulfates by Perseverance's deep UV Raman spectrometer at Jezero crater, Mars, *submitted to Nature Astronomy*.
- 61) **Williams, A.J.**, J. Eigenbrode, M. Millan, R. Williams, O. McIntosh, S. Teinturier, J. Roach*, C. Malespin, A. McAdam, P. Mahaffy, A. Bryk, A. Buch, D. Boulesteix, L. Chou, J. Dworkin, V. Fox, H. Franz, C. Freissinet, D. Glavin, C. House, S. Johnson, J.M.T. Lewis, A. Mojarro, R. Navarro-Gonzalez, C. Pozarycki, A. Steele, R. Summons, C. Szopa, M. Thorpe, A. Vasavada. Diverse Organic Molecules on Mars Revealed by the SAM TMAH Experiment, *in review with Nature*.
- 60) Dehouck, E., O. Forni, C. Quantin-Nataf, P. Beck, N. Mangold, O. Beyssac, C. Royer, E. Clavé, J. Johnson, L. Mandon, F. Poulet, A. Udry, G. Lopez-Reyes, G. Caravaca, S. Maurice, R. Wiens, K. Stack, R. Anderson, T. Bosak, A. Broz, K. Castro, S. Clegg, A. Cousin, G. Dromart, K. Farley, T. Fouchet, J. Frydenvang, T. Gabriel, P. Gasda, E. Gibbons, B. Horgan, J. Hurowitz, H. Kalucha, J. Lasue, S. Le Mouélic, J. Manuel Madariaga, P.-Y. Meslin, M. Nachon, J. Nuñez, P. Pilleri, C. Pilorget, J. Rice, P. Russell, S. Schroeder, D. Shuster, K. Siebach, J. Simon, B. Weiss, **A.J. Williams**. Diverse geochemical environments recorded in the Jezero western fan, Mars, *submitted to Nature Communications*.
- 59) **Williams, A.J.**, Thorpe, M., McAdam, A., Johnson, S.S. 2023. Clays and Martian Astrobiology, *In Clay on Mars, Ed. Cuadros, J., in review*.
- 58) Freissinet, C., D.P. Glavin, P.D. Archer Jr., S. Teinturier, A. Buch, C. Szopa, J.M.T. Lewis, **A.J. Williams**, R. Navarro-Gonzalez, J.P. Dworkin, H.B. Franz, M. Millan, J.L. Eigenbrode, R.E. Summons, C.H. House, R.H. Williams, A. Steele, O. McIntosh, F. Gómez, B. Prats, C.A. Malespin, P.R. Mahaffy, 2023. Long-chain alkanes preserved in a martian mudstone, *in review with PNAS*.

2024

- 57) Broz, A., B. Horgan, H. Kalucha, J.R. Johnson, C. Royer, E. Dehouck, L. Mandon, E.L. Cardarelli, B. Garczynski, J.H. Haber, E. Ives, N. Mangold, T. Bosak, J.I. Simon, P. Gasda, K. Stack Morgan, E. Clave, B.S. Kathir, M. Zawaski, R. Barnes, S. Siljeström, N. Randazzo, J.M. Madariaga, K. Benison, K. Farley, L. Kah, W. Rapin, L. Kivrak*, **A.J. Williams**, E. Hausrath, J. I. Núñez, F. Gómez, A. Steele, T. Fouchet, J.F. Bell, R.C. Wiens, 2024. Diagenetic history and biosignature preservation potential of fine-grained rocks at Hogwallow Flats, Jezero Crater, Mars, *Journal of Geophysical Research: Planets*, 129, e2024JE008520. DOI: 10.1029/2024JE008520. [Link to Article](#)
- 56) Boulesteix, D.*, A. Buch, G. Masson, L.L. Kivrak*, J.R. Havig, T.L. Hamilton, B.L. Teece, Y. He, C. Freissinet, Y. Huang, E. Santos, C. Szopa, **A.J. Williams**, 2024. Environmental Analogs from Yellowstone hot springs on Geochemical and Microbial Diversity with Implications for the Search for Life on Mars, *Planetary and Space Science*, 10.1016/j.pss.2024.105953. [Link to Article](#)
- 55) Hausrath, E., R. Sullivan, Y. Goreva, M.P. Zorzano, A. Vaughan, A. Cousin, S. Siljeström, S. Sharma, A. Shumway, T. Kizovski, S. VanBommel, M. Tice, A. Knight, G. Martinez, A. Vicente-Retortillo, L. Mandon, C.T. Adcock, J.M. Madariaga, I. Población, J.R. Johnson, J. Lasue, O. Gasnault, N. Randazzo, E. L. Cardarelli, R. Kronyak, A. Bechtold, G. Paar, A. Udry, O. Forni, C.C. Bedford, N.A. Carman, J.F. Bell III, K. Benison, T. Bosak, A. Brown, A. Broz, F. Calef, B. C. Clark, E. Cloutis, A.D. Czaja, T.

- Fornaro, T. Fouchet, M. Golombek, F. Gomez, C.D.K. Herd, K. Herkenhoff, R.S. Jakubek, L. Jandura, J. Martinez-Frias, L.E. Mayhew, P.-Y. Meslin, C.E. Newman, J.I. Núñez, F. Poulet, C. Royer, P. Russell, M. A. Sephton, S.K. Sharma, D. Shuster, J. I. Simon, I. Tirona, R.C. Wiens, B. P. Weiss, **A.J. Williams**, K. Williford, Z.U. Wolf, and the Regolith Working Group, 2024. Collection and in situ analyses of regolith samples by the Mars 2020 rover: Implications for their formation and alteration history, *Journal of Geophysical Research – Planets*, *accepted*.
- 54) Abrahamsson, V., Henderson, B., Friedman, A., Gross, J., Prothmann, J., Davila, A., **Williams, A.J.**, Lin, Y., Kanik, I., Zhong, F. Supercritical CO₂ and Subcritical H₂O Analysis (SCHAN) Instrument: Automated Lipid Analysis for in-situ Planetary Life Detection, *Analytical Chemistry*, *accepted*.
- 53) Bosak, T., D.L. Shuster, E. L. Scheller, S. Siljeström, M. J. Zawaski, L. Mandon, J. I. Simon, B. P. Weiss, K. M. Stack, E. N. Mansbach, A. H. Treiman, K. C. Benison, A. J. Brown, A. D. Czaja, K. A. Farley, E. M. Hausrath, K. Hickman-Lewis, C. D. K. Herd, J. R. Johnson, L. E. Mayhew, M. E. Minitti, K. H. Williford, B. V. Wogsland, M.-P. Zorzano, A. C. Allwood, H. E. F. Amundsen, J. F. Bell III, K. Benzerara, S. Bernard, O. Beyssac, D. K. Buckner*, M. Cable, F. Calef III, G. Caravaca, D. C. Catling, E. Clavé, E. Cloutis, B. A. Cohen, A. Cousin, E. Dehouck, A. Fåiren, D. T. Flannery, T. Fornaro, O. Forni, T. Fouchet, E. Gibbons, F. Gomez Gomez, S. Gupta, K. P. Hand, J. A. Hurowitz, H. Kalucha, D. A. K. Pedersen, G. Lopes Reyes, J. N. Maki, S. Maurice, J. I. Nuñez, N. Randazzo, J. W. Rice Jr., C. Royer, M. A. Sephton, S. Sharma, A. Steele, C. D. Tate, K. Uckert, A. Udry, R. C. Wiens, **A.J. Williams**. Astrobiological potential of rocks acquired by the Perseverance rover at a sedimentary fan front in Jezero crater, Mars, *AGU Advances*, 5, e2024AV001241. 10.1029/2024AV001241. [Link to Article](#)
- 52) Caravaca, G., G. Dromart, N. Mangold, S. Gupta, L.C. Kah, C. Tate, R.M.E. Williams, S. Le Mouélic, O. Gasnault, J. Bell III, O. Beyssac, J. I. Nuñez, N. Randazzo, J. Rice Jr., L.S. Crumpler, **A.J. Williams**, P. Russell, K.M. Stack, K.A. Farley, S. Maurice, R.C. Wiens, 2023. Depositional Facies and Sequence Stratigraphy of Kodiak butte, western Delta of Jezero crater, Mars, *Journal of Geophysical Research – Planets*, 129, e2023JE008205, DOI 10.1029/2023JE008205. [Link to Article](#)
- 51) McIntosh, O, C. Freissinet, A. Buch, J. Lewis, M. Millan, **A.J. Williams**, T. Fornaro, J. Eigenbrode, J. Brucato, C. Szopa, 2024. Analysis of aromatic carboxylic acid and calcium salt couples with gas chromatography-mass spectrometry: implications and comparison with *in situ* measurements at Mars' surface, *Icarus*, 413, DOI 10.1016/j.icarus.2024.116015. [Link to Article](#)
- 50) Stack, K.M., L. Ives, S. Gupta, M. Lamb, M. Tebolt, G. Caravaca, J. Grotzinger, P. Russell, D. Shuster, **A.J. Williams**, H. Amundsen, S. Alwamark, A. Annex, R. Barnes, J. Bell III, O. Beyssac, T. Bosak, L. Crumpler, E. Dehouck, S. Gwizd, K. Hickmann-Lewis, B. Horgan, J. Hurowitz, H. Kalucha, O. Kanine, C. Lesh, J. Maki, N. Mangold, N. Randazzo, C. Seeger, R. Williams, A. Brown, E. Cardarelli, H. Dypvik, D. Flannery, J. Frydenvang, S.-E. Hamran, J. Nunez, D. Paige, J. Simon, M. Tice, C. Tate, R. Wiens, 2024. Sedimentology and Stratigraphy of the Shenandoah Formation, Western Fan, Jezero Crater, Mars, *Journal of Geophysical Research – Planets*, 129, e2023JE008187. [Link to Article](#)
- 49) Benison, K.C., K. Gill, S. Sharma, S. Siljeström, M. Zawaski, T. Bosak, A. Broz, B. Clark, E. Cloutis, A. Czaja, D. Flannery, T. Fornaro, F. Gómez, K. Hand, C. Herd, J. Hurowitz, J. Johnson, J. Madariaga, M. Madsen, J. Martinez-Frías, M. Nachon, J. Núñez, D. Pedersen, N. Randazzo, D. Shuster, J. Simon, A. Steele, C. Tate, A. Treiman, K. Uckert, **A.J. Williams**, A. Yanchilina, 2024. Depositional and diagenetic sulfates of Hogwallow Flats and Yori Pass, Jezero crater: Evaluating preservation

potential of environmental indicators and possible biosignatures from past martian surface waters and groundwaters, *Journal of Geophysical Research – Planets*, 129, e2023JE008155. [Link to Article](#)

- 48) Siljeström, S., A. Czaja, Andrea Corpolongo, E.L. Berger, A.Y. Li, E. Cardarelli, W. Abbey, S. Asher, L. Beegle, K. Benison, R. Bhartia, B. Bleefeld, A. Burton, S. Bykov, B. Clark, L. DeFlores, B. Ehlmann, T. Fornaro, A. Fox, F. Gómez, K. Hand, N. Haney, K. Hickman-Lewis, W. Hug, S. Imbeah, R. Jakubek, L. Kah, L. Kivrak*, C. Lee, J. Martínez-Frías, F. McCubbin, M. Minitti, K. Moore, R. Morris, J. Núñez, J. Osterhout, Y. Phua, N. Randazzo, J. Razzell Hollis, C. Rodriguez, R. Roppel, E. Scheller, M. Sephton, S. Sharma, K. Steadman, A. Steele, M. Tice, K. Uckert, S. VanBommel, **A.J. Williams**, K. Williford, K. Winchell, M. Wu, A. Yanchilina, M. Zorzano, 2024. Evidence of Sulfate-Rich Fluid Alteration in Jezero Crater Floor, Mars, *Journal of Geophysical Research: Planets*, 129, e2023JE007989. [Link to Article](#)

2023

- 47) Buckner, D.K.*, Anderson, M.J., Wisnosky, S., Alvarado, W., Nuevo, M., **Williams, A.J.**, Ricco, A.J., Debic, S., Friend, L., Hoac, T., Jahnke, L., Radosevich, L., Williams, R., Wilhelm, M.B., 2023. Quantifying Global Origin-Diagnostic Features and Patterns in Biotic and Abiotic Acyclic Lipids for Life Detection, *Astrobiology*, 24:1, 1-35. [Link to Article](#)
- 46) Mojarro, A., Buch, A., Dworkin, J., Freissinet, C., Glavin, D., Cyril, S., Millan, M., **Williams, A.J.**, Summons, R., 2023. Murchison Meteorite Analysis using Tetramethylammonium Hydroxide (TMAH) Thermochemolysis under Simulated Sample Analysis at Mars (SAM) Pyrolysis-Gas Chromatography-Mass Spectrometry Conditions, *Journal of Geophysical Research – Planets*, 128:11, doi 10.1029/2023JE007968. [Link to Article](#)
- 45) Treiman, A.H., Nina Louise Lanza, Scott VanBommel, Jeff Berger, Roger Wiens, Thom Bristow, Jeffrey John, Melissa Rice, Reginald Hart, Amy McAdam, Patrick J. Gasda, Pierre-Yves Meslin, Albert S. Yen, **Amy J. Williams**, Ashwin R. Vasavada, David T. Vaniman, Valerie M. Tu, Michael T. Thorpe, Elizabeth D. S Swanner, Christina Seeger, Susanne P. P Schwenzer, Susanne Schröder, Elizabeth B. Rampe, William Rapin, Silas Ralston, Tanya S. Peretyazhko, Horton E. Newsom, Richard V. Morris, Douglas W. Ming, Matteo Loche, Stéphane Le Mouélic, Christopher H. House, Robert M. Hazen, John P. Grotzinger, Ralf Gellert, Olivier Gasnault, Woodward W. Fischer, Ari L. Essunfeld, Robert T. Downs, Gordon W. Downs, Erwin Dehouck, Laura J. Crosse, Agnes Cousin, Jade M Comellas, Joanna V. Clark, Benton C. Clark III, Steve Chipera, Gwénaél Caravaca, John C. Bridges, David F. Blake, Ryan B. B Anderson, 2023. Manganese-Iron Phosphate Nodules at the Grogen site, Gale Crater, Mars, *Minerals*, 13:1122. [Link to Article](#)
- 44) Sharma, S., R. Roppel, A. Murphy, L. Beegle, R. Bhartia, A. Steele, J. Hollis, S. Siljeström, F. McCubbin, S. Asher, W. Abbey, A. Allwood, E. Berger, B. Bleefeld, A. Burton, S. Bykov, E. Cardarelli, P. Conrad, A. Corpolongo, A. Czaja, L. DeFlores, K. Edgett, K. Farley, T. Fornaro, A. Fox, M. Fries, D. Harker, K. Hickman-Lewis, J. Huggett, S. Imbeah, R. Jakubek, L. Kah, C. Lee, Y. Liu, A. Magee, M. Minitti, K. Moore, A. Pascuzzo, C. Rodriguez, E. Scheller, S. Shkolyar, K. Stack, M. Tuite, K. Uckert, A. Werynski, R. Wiens, **A.J. Williams**, K. Winchell, M. Wu, A. Yanchilina, K. Steadman, 2023. Mapping organic-mineral associations in Jezero crater: Implications for Martian Organic Geochemistry, *Nature*, DOI:10.1038/s41586-023-06143-z. [Link to Article](#)
- 43) He, Y., Buch, A., Szopa, C., **Williams, A.J.**, Freissinet, C., Guzman, M., Boulesteix, D., Millan, M., Coscia, D., Bonnet, J.-Y., Cabane, M., 2023. The application of TMAH thermochemolysis on the

detection of nucleotides: applications for the SAM and MOMA space experiments, *Journal of Analytical and Applied Pyrolysis*, 170, 105933. [Link to Article](#).

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- 5) Mangold, N., Thompson, L., Forni, O., Fabre, C., Le Deit, L., Wiens, R., **Williams, A.J.**, Williams, R., Anderson, R., Blaney, D., Calef, F., Cousin, A., Clegg, S., Dromart, G., Dietrich, W., Edgett, K., Fisk, M.R., Gasnault, O., Gellert, R., Grotzinger, J., Kah, L., Le Mouélic, S., McLennan, S., Maurice, S., Meslin, P.-Y., Newsom, H.E., Palucis, M., Rapin, W., Sautter, V., Siebach, K., Stack, K., Sumner, D., Yingst, R.A. 2016. Composition of conglomerates analyzed by the Curiosity rover: Implications for Gale crater crust and sediment sources, *Journal of Geophysical Research, Planets*, v121:3, 353-387, doi:10.1002/2015JE004977. [Link to Article](#)

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- 4) **Williams, A.J.**, Sumner, D.Y., Alpers, C.N., Karunatillake, S., Hofmann, B.A., 2015. Preserved filamentous microbial biosignatures in the Brick Flat gossan, Iron Mountain, CA, *Astrobiology*, v.15 (8), p.637-668. [Link to Article](#)
- 3) Anderson, R., Bridges, J.C., **Williams, A.J.**, Edgar, L., Ollila, A., Williams, J., Nachon, M., Mangold, N., Schieber, J., Gupta, S., Dromart, G.; Wiens, R., Le Mouélic, S., Forni, O., Lanza, N., Mezzacappa, A., Sautter, V., Fisk, M., Blaney, D., Clark, B., Clegg, S., Gasnault, O., Lasue, J., Léveillé, R., Lewin, E., Lewis, K., Maurice, S., Newsom, H., Schwenzer, S., Vaniman, D., 2015. ChemCam Results from the Shaler Outcrop in Gale Crater, Mars, *Icarus*, v. 249, p. 2-21, doi: 10.1016/j.icarus.2014.07.025. [Link to Article](#)

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- 2) **Williams, A.J.**, Crossey, L.J., Karlstrom, K.E., Newell, D., Person, M., Woosley, E., 2013. Hydrogeochemistry of the Middle Rio Grande aquifer system - fluid mixing and salinization of the Rio Grande due to fault inputs, *Chemical Geology*, v. 351, p. 281-298, doi: 10.1016/j.chemgeo.2013.05.029. [Link to Article](#)

2009

- 1) **Williams, A.J.**, Andersen, C.B., and Lewis, G.P., 2009. Evaluating the Effects of Sample Processing Treatments on Alkalinity Measurements, *Journal of Hydrology*, v. 377, p. 455-464, doi: 10.1016/j.jhydrol.2009.09.007. [Link to Article](#)

Books and Reports

- 1) National Academies of Sciences, Engineering, and Medicine (including **Williams, A.J.**). 2022. *Origins, Worlds, and Life: A Decadal Strategy for Planetary Science and Astrobiology 2023-2032*. Washington, DC: The National Academies Press. <https://doi.org/10.17226/26522>. [Link to Report](#)

Mars Curiosity Rover Science Team Journal Articles

- 15) Farley, K.A., Malespin, C., Mahaffy, P., Grotzinger, J.P., Vasconcelos, P.M., Milliken, R.E., Malin, M., Edgett, K.S., Pavlov, A.A., Hurowitz, J.A., Grant, J.A., Miller, H.B., Arvidson, R., Beegle, L., Calef, F., Conrad, P.G., Dietrich, W.E., Eigenbrode, J., Gellert, R., Gupta, S., Hamilton, V., Hassler, D.M., Lewis,

K.W., McLennan, S.M., Ming, D., Navarro-González, R., Schwenzer, S.P., Steele, A., Stolper, E.M., Sumner, D.Y., Vaniman, D., Vasavada, A., Williford, K., Wimmer-Schweingruber, R.F., the MSL Science Team (including **Williams, A.J.**), 2014. *In Situ* Radiometric and Exposure Age Dating of the Martian Surface. *Science* (80). 343. [Link to Article](#)

14) McLennan, S.M., Anderson, R.B., Bell, J.F., Bridges, J.C., Calef, F., Campbell, J.L., Clark, B.C., Clegg, S., Conrad, P., Cousin, A., Des Marais, D.J., Dromart, G., Dyar, M.D., Edgar, L.A., Ehlmann, B.L., Fabre, C., Forni, O., Gasnault, O., Gellert, R., Gordon, S., Grant, J.A., Grotzinger, J.P., Gupta, S., Herkenhoff, K.E., Hurowitz, J.A., King, P.L., Le Mouelic, S., Leshin, L.A., Leveille, R., Lewis, K.W., Mangold, N., Maurice, S., Ming, D.W., Morris, R. V., Nachon, M., Newsom, H.E., Ollila, A.M., Perrett, G.M., Rice, M.S., Schmidt, M.E., Schwenzer, S.P., Stack, K., Stolper, E.M., Sumner, D.Y., Treiman, A.H., VanBommel, S., Vaniman, D.T., Vasavada, A., Wiens, R.C., Yingst, R.A., the MSL Science Team (including **Williams, A.J.**), 2014. Elemental Geochemistry of Sedimentary Rocks at Yellowknife Bay, Gale Crater, Mars. *Science* (80). 343, 1244734–1244734. doi:10.1126/science.1244734. [Link to Article](#)

13) Ming, D.W., Archer, P.D., Glavin, D.P., Eigenbrode, J.L., Franz, H.B., Sutter, B., Brunner, A.E., Stern, J.C., Freissinet, C., McAdam, A.C., Mahaffy, P.R., Cabane, M., Coll, P., Campbell, J.L., Atreya, S.K., Niles, P.B., Bell, J.F., Bish, D.L., Brinckerhoff, W.B., Buch, A., Conrad, P.G., Des Marais, D.J., Ehlmann, B.L., Fairén, A.G., Farley, K., Flesch, G.J., Francois, P., Gellert, R., Grant, J.A., Grotzinger, J.P., Gupta, S., Herkenhoff, K.E., Hurowitz, J.A., Leshin, L.A., Lewis, K.W., McLennan, S.M., Miller, K.E., Moersch, J., Morris, R. V., Navarro-González, R., Pavlov, A.A., Perrett, G.M., Pradler, I., Squyres, S.W., Summons, R.E., Steele, A., Stolper, E.M., Sumner, D.Y., Szopa, C., Teinturier, S., Trainer, M.G., Treiman, A.H., Vaniman, D.T., Vasavada, A.R., Webster, C.R., Wray, J.J., Yingst, R.A., the MSL Science Team (including **Williams, A.J.**), 2014. Volatile and Organic Compositions of Sedimentary Rocks in Yellowknife Bay, Gale Crater, Mars. *Science* (80). 343. [Link to Article](#)

12) Grotzinger, J.P., Sumner, D.Y., Kah, L.C., Stack, K., Gupta, S., Edgar, L., Rubin, D., Lewis, K., Schieber, J., Mangold, N., Milliken, R., Conrad, P.G., DesMarais, D., Farmer, J., Siebach, K., Calef, F., Hurowitz, J., McLennan, S.M., Ming, D., Vaniman, D., Crisp, J., Vasavada, A., Edgett, K.S., Malin, M., Blake, D., Gellert, R., Mahaffy, P., Wiens, R.C., Maurice, S., Grant, J.A., Wilson, S., Anderson, R.C., Beegle, L., Arvidson, R., Hallet, B., Sletten, R.S., Rice, M., Bell, J., Griffes, J., Ehlmann, B., Anderson, R.B., Bristow, T.F., Dietrich, W.E., Dromart, G., Eigenbrode, J., Fraeman, A., Hardgrove, C., Herkenhoff, K., Jandura, L., Kocurek, G., Lee, S., Leshin, L.A., Leveille, R., Limonadi, D., Maki, J., McCloskey, S., Meyer, M., Minitti, M., Newsom, H., Oehler, D., Okon, A., Palucis, M., Parker, T., Rowland, S., Schmidt, M., Squyres, S., Steele, A., Stolper, E., Summons, R., Treiman, A., Williams, R., Yingst, A., the MSL Science Team (including **Williams, A.J.**), 2014. A Habitable Fluvio-Lacustrine Environment at Yellowknife Bay, Gale Crater, Mars. *Science* (80). 343. [Link to Article](#)

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- Farmer, J.D., Stack, K., Milliken, R.E., Ehlmann, B., Sumner, D.Y., Berger, G., Crisp, J.A., Hurowitz, J.A., Anderson, R., Desmarais, D., Stolper, E.M., Edgett, K.S., Gupta, S., Spanovich, N., the MSL Science Team (including **Williams, A.J.**), 2013. Mineralogy of a Mudstone at Yellowknife Bay, Gale Crater, Mars. *Science* 343, 1243480. doi:10.1126/science.1243480. [Link to Article](#)
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- 8) Meslin, P.-Y., Gasnault, O., Forni, O., Schröder, S., Cousin, A., Berger, G., Clegg, S.M., Lasue, J., Maurice, S., Sautter, V., Le Mouélic, S., Wiens, R.C., Fabre, C., Goetz, W., Bish, D., Mangold, N., Ehlmann, B., Lanza, N., Harri, A.-M., Anderson, R., Rampe, E., McConnochie, T.H., Pinet, P., Blaney, D., Lévillé, R., Archer, D., Barraclough, B., Bender, S., Blake, D., Blank, J.G., Bridges, N., Clark, B.C., DeFlores, L., Delapp, D., Dromart, G., Dyar, M.D., Fisk, M., Gondet, B., Grotzinger, J., Herkenhoff, K., Johnson, J., Lacour, J.-L., Langevin, Y., Leshin, L., Lewin, E., Madsen, M.B., Melikechi, N., Mezzacappa, A., Mischna, M.A., Moores, J.E., Newsom, H., Ollila, A., Perez, R., Renno, N., Sirven, J.-B., Tokar, R., de la Torre, M., d'Uston, L., Vaniman, D., Yingst, A., the MSL Science Team (including **Williams, A.J.**), 2013. Soil Diversity and Hydration as Observed by ChemCam at Gale Crater, Mars. *Science* (80). 341. [Link to Article](#)
- 7) Bish, D.L., Blake, D.F., Vaniman, D.T., Chipera, S.J., Morris, R. V, Ming, D.W., Treiman, A.H., Sarrazin, P., Morrison, S.M., Downs, R.T., Achilles, C.N., Yen, A.S., Bristow, T.F., Crisp, J.A., Morookian, J.M., Farmer, J.D., Rampe, E.B., Stolper, E.M., Spanovich, N., the MSL Science Team (including **Williams, A.J.**), 2013. X-ray Diffraction Results from Mars Science Laboratory: Mineralogy of Rocknest at Gale Crater. *Science* (80). 341. [Link to Article](#)
- 6) Blake, D.F., Morris, R. V, Kocurek, G., Morrison, S.M., Downs, R.T., Bish, D., Ming, D.W., Edgett, K.S., Rubin, D., Goetz, W., Madsen, M.B., Sullivan, R., Gellert, R., Campbell, I., Treiman, A.H., McLennan, S.M., Yen, A.S., Grotzinger, J., Vaniman, D.T., Chipera, S.J., Achilles, C.N., Rampe, E.B., Sumner, D., Meslin, P.-Y., Maurice, S., Forni, O., Gasnault, O., Fisk, M., Schmidt, M., Mahaffy, P., Leshin, L.A., Glavin, D., Steele, A., Freissinet, C., Navarro-González, R., Yingst, R.A., Kah, L.C., Bridges, N., Lewis, K.W., Bristow, T.F., Farmer, J.D., Crisp, J.A., Stolper, E.M., Des Marais, D.J., Sarrazin, P., the MSL Science Team (including **Williams, A.J.**), 2013. Curiosity at Gale Crater, Mars: Characterization and Analysis of the Rocknest Sand Shadow. *Science* (80). 341. [Link to Article](#)
- 5) Leshin, L.A., Mahaffy, P.R., Webster, C.R., Cabane, M., Coll, P., Conrad, P.G., Archer, P.D., Atreya, S.K., Brunner, A.E., Buch, A., Eigenbrode, J.L., Flesch, G.J., Franz, H.B., Freissinet, C., Glavin, D.P., McAdam, A.C., Miller, K.E., Ming, D.W., Morris, R. V, Navarro-González, R., Niles, P.B., Owen, T., Pepin, R.O., Squyres, S., Steele, A., Stern, J.C., Summons, R.E., Sumner, D.Y., Sutter, B., Szopa, C., Teinturier, S., Trainer, M.G., Wray, J.J., Grotzinger, J.P., the MSL Science Team (including **Williams, A.J.**), 2013. Volatile, Isotope, and Organic Analysis of Martian Fines with the Mars Curiosity Rover. *Science* (80). 341. [Link to Article](#)
- 4) Webster, C.R., Mahaffy, P.R., Flesch, G.J., Niles, P.B., Jones, J.H., Leshin, L.A., Atreya, S.K., Stern, J.C., Christensen, L.C., Owen, T., Franz, H., Pepin, R.O., Steele, A., the MSL Science Team (including **Williams, A.J.**), 2013. Isotope Ratios of H, C, and O in CO₂ and H₂O of the Martian Atmosphere. *Science* (341:6143). 260-263. [Link to Article](#)

- 3) Webster, C.R., Mahaffy, P.R., Atreya, S.K., Flesch, G.J., Farley, K.A., the MSL Science Team (including **Williams, A.J.**), 2013. Low Upper Limit to Methane Abundance on Mars. *Science* (80). 342. [Link to Article](#)
- 2) Mahaffy, P.R., Webster, C.R., Atreya, S.K., Franz, H., Wong, M., Conrad, P.G., Harpold, D., Jones, J.J., Leshin, L.A., Manning, H., Owen, T., Pepin, R.O., Squyres, S., Trainer, M., the MSL Science Team (including **Williams, A.J.**), 2013. Abundance and Isotopic Composition of Gases in the Martian Atmosphere from the Curiosity Rover. *Science* (80). 341. [Link to Article](#)
- 1) Williams, R.M.E., Grotzinger, J.P., Dietrich, W.E., Gupta, S., Sumner, D.Y., Wiens, R.C., Mangold, N., Malin, M.C., Edgett, K.S., Maurice, S., Forni, O., Gasnault, O., Ollila, A., Newsom, H.E., Dromart, G., Palucis, M.C., Yingst, R.A., Anderson, R.B., Herkenhoff, K.E., Mouélic, S. Le, Goetz, W., Madsen, M.B., Koefoed, A., Jensen, J.K., Bridges, J.C., Schwenzer, S.P., Lewis, K.W., Stack, K.M., Rubin, D., Kah, L.C., III, J.F.B., Farmer, J.D., Sullivan, R., Beek, T. Van, Blaney, D.L., Pariser, O., Deen, R.G., the MSL Science Team (including **Williams, A.J.**), 2013. Martian Fluvial Conglomerates at Gale Crater. *Science* (80). 291, 1068–1072. [Link to Article](#)

Invited Talks [IT] / Media Interviews [MI] / Public Outreach [PO]

[MI] Quote for *Spectrum News 13*

“[NASA to investigate Jupiter’s ‘mysterious moon’ Europa](#)” by Anthony Leone, October 13, 2024

[MI] Interview with UF Explore Magazine

“[Percy and LISA](#)”, by Doug Bennett, September 11, 2024

[PO] Panelist – NfoLD Parenting in Science Panel, virtual, August 7, 2024

[MI] Interview with Space.com

“[Possible signs of Mars life: Astrobiologist explains Perseverance rover’s exciting find](#)” by Sharmila Kuthunur, August 2, 2024

[IT] NASA Science Mission Directorate workshop “Science and Planetary Protection in Advance of Human Missions”

Invited Talk- “Targets for the Search for Life on Mars”, virtual seminar, August 1, 2024

[MI] Quote for Nature Astronomy

“[Why Scientists are Longing for Samples from Mars](#)” by Jonathan O’Callaghan, July 22, 2024

[PO] Invited Lecture –Astronomical Society of the Palm Beaches

“The Exploration of Mars”, virtual, July 3, 2024

[IT] Thomas Jefferson High School for Science and Technology, Springfield, VA, freshman capstone keynote lecture

Invited Lecture- “Dare Mighty Things (it’s ok to learn through failure)”, virtual seminar, June 5, 2024

[IT] University of California, Davis, lecture for course “Extraterrestrial Soils”

Invited Lecture- “The Curiosity to Explore and the Perseverance to Rove”, virtual seminar, April 30, 2024

[MI] Video Interview with UF Research Communications

“10 years with The Conversation”, coordinated by Phillip Frohm, April 29, 2024

- Video posted to [LinkedIn](#) and [X](#)

[IT] Rice University, Department of Earth, Environmental, and Planetary Sciences

Invited Seminar- “The Search for Life on Mars: Challenges and Opportunities in Current and Future Mars Exploration” Houston, TX, April 19, 2024

[MI] Quote for Scientific American

“[SpaceX’s Starship Could Save NASA’s Beleaguered Mars Sample Return Mission](#)” by Jonathan O’Callaghan, April 19, 2024

[PO] Invited Lecture – Southwest Florida Astronomical Society

“The Exploration of Mars”, virtual, April 4, 2024

[MI] Quote for Undark

“[To Mars and Back: Will NASA’s Ambitious Endeavor Be Worth It?](#)” by Sarah Scoles, March 20, 2024

[PO] Article for The Conversation

“[NASA’s search for life on Mars: a rocky road for its rovers, a long slog for scientists – and back on Earth, a battle of the budget](#)” by Amy Williams, March 12, 2024.

[MI] Quote for the Planetary Society

“[The Science Value of Mars Sample Return](#)” by Jason Davis, March 5, 2024.

[IT] Carleton University, public lecture for course “On the Origin of Planets”

Invited Lecture- “The Curiosity to Explore and the Perseverance to Rove”, virtual seminar, March 4, 2024

[IT] University of Georgia, Department of Geology

Invited Seminar- “The Search for Life on Mars: Challenges and Opportunities in Current and Future Mars Exploration” Athens, GA, March 1, 2024

[MI] Interview with UF News

“[Astrobiologist Amy Williams shows young women in STEM that the sky is the limit](#)”, by Abby Weingarten, February 28, 2024

[PO] Speaker, Scientist in Every Florida School, Collier County Fourth Grade, virtual, February 9, 2024

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”

“[Rovers on the Red Planet](#)” by Marian Summerall & Brendan Byrne, January 23, 2024

[MI] Quote in Space.com

“[If Life Exists on Mars, Don’t Count on Sample-Return Missions to Find It](#)” by Leonard David, January 21, 2024.

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”
“[Mars Rovers take a ‘Mars-cation’](#)” by Brendan Byrne, November 14, 2023

[PO] Invited Plenary Lecture - Chiefland Astrofest 2023
“The Exploration of Mars”, Chiefland, FL, November 11, 2023

[PO] UF Fall Family Weekend Lecture
“The Exploration of Mars”, Gainesville, FL, November 3, 2023

[IT] Invited Talk for the Mars Society
“The Mars Life Explorer Mission Concept Study” Tempe, AZ, October 5, 2023

[MI] Quote in *Ars Technica*
“[Here’s what the latest Mars rover has learned so far](#)” by Scott Johnson, September 18, 2023

[IT] Invited Lecture for the Retired Faculty of UF
“The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars”
Gainesville, FL, September 13, 2023

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”
“[A Tale of Two Climates: Tracking Climate Change on Earth and on Mars](#).” by Brendan Byrne,
August 22, 2023

[MI] Quote in *SpaceRef.com*
“[Perchlorate on the Red Planet: How a Toxin in Martian Soil Can Fuel Future Exploration](#)” by
Leonard David, August 21, 2023

[IT] Womanium Foundation Astrobiology Program 2023
“The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars” virtual,
August 16, 2023

[MI] Interview with Planetary Radio
“[Mars Life Explorer: The search for extant life on the red planet](#)” by Sarah Al-Ahmed, August 9,
2023

[MI] Quote in Science.org
“[Ancient mud cracks on Mars point to conditions favorable for life](#)” by Phie Jacobs, August 9, 2023

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”
“[Sierra Space’s new Dream Chaser hopes to bring people into orbit](#)” by Brendan Byrne, July 25,
2023

[MI] Press Release with UF CLAS News
“[New Study Reveals Evidence of Diverse Organic Material on Mars](#)”, by Lauren Barnett, July 12,
2023

- Related international article pickups on: [Universe Today](#), [The Jerusalem Post](#), [The Economic Times](#), [The Debrief](#), [SciTechDaily](#), [Astrobiology](#), [Down To Earth](#), [Inside Outer Space](#)

[IT] Alachua Astronomy Club

Invited Speaker - “The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars” Gainesville, FL, July 11, 2023

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”

“[How Mars Rocks Get Their Names](#)” by Brendan Byrne, June 21, 2023

[MI] Quotes for *Spectrum News 13*

“[Venus: Exploring conditions on Earth's extremely hot and toxic twin](#)” and

“[NASA prepares DAVINCI probe for 'hellish' mission to Venus](#)” both by Anthony Leone, June 12, 2023

[MI] Quote in *Space.com*

“[ChatGPT on Mars: How AI can help scientists study the Red Planet](#)” by Leonard David, May 14, 2023

[IT] LPI Seminar, Lunar and Planetary Institute

Invited Seminar- “The Search for Life on Mars: Challenges and Opportunities in Current and Future Mars Exploration” virtual, April 13, 2023

[MI] Interview for NPR Morning Edition

“[Scientists believe they have found a crucial building block of life on an asteroid](#)” by Geoff Brumfiel, March 22, 2023

[MI] Interview for EOS

“[We \(Probably\) Can't tell Whether Mars Has Life](#)”, by Matthew Francis, March 10, 2023

[MI] Quote in *Space.com*

“[The big reveal: What's ahead in returning samples from Mars?](#)” by Leonard David, March 7, 2023

[MI] Interview for LifeSlices Podcast

“[Life on Mars... and Elsewhere](#)”, by Steve Fisher, March 6, 2023

[IT] Geological Sciences 75th Anniversary, University of Florida

Keynote Lecture - “The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars” Gainesville, FL, March 4, 2023

[MI] Press Release with UF CLAS News

“[CLAS Researchers Named Scialog Fellows](#)”, by Brian Smith, February 27, 2023

[MI] Interview for The Washington Post

“[Strange DNA found in the desert offers lessons in the hunt for Mars life](#)”, by Joel Achenbach, February 21, 2023

[MI] Interview with Radio France International

“[Mars helps us understand the uniqueness, complexity, fragility of life on Earth--interview with Amy Williams](#)” by Radu Tudor, February 16, 2023 (English translation [here](#))

[MI] Interview with Chemistry World

[“How to Negotiate Better”](#) by Dinsa Sachan, February 15, 2023

[IT] Georgia Institute of Technology ExplOrigins Colloquium 2023

Keynote Lecture - “The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars” Atlanta, GA, February 10, 2023

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”

[“Mars updates: Percy’s sample collection and the possibility of astronaut missions”](#) by Brendan Byrne, February 7, 2023

[PO] Speaker, The Villages at Gainesville Retirement Community

Invited Speaker - “The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars” Gainesville, FL, January 31, 2023

[PO] Speaker, Scientist in Every Florida School, virtual, January 30, 2023

[IT] Max Planck Institute for Solar System Research

Invited Seminar Speaker - “Exploring Mars through the Eyes of a Rover” Göttingen, Germany, January 24, 2023

[PO] Public Talk for Mars Closest Approach event, UF Astronomy/ Campus Teaching Observatory, Gainesville, FL, December 9, 2022

[MI] Interview for National Geographic

[“Life just might exist on Mars after all”](#) by Nadia Drake, December 6, 2022

[MI] Press Release with UF News

[“Perseverance rover detects more organic carbon on Mars in search for signs of ancient life”](#), by Eric Hamilton, November 23, 2022

Related international article pickups on: [Independent](#), [MTV Lebanon](#), [News9Live](#)

[IT] American Society for Gravitational and Space Research

Banquet Keynote Lecture - [“The Mars 2020 Perseverance Rover Mission”](#) Houston, TX, November 12, 2022

[PO] Speaker, Girls Excelling in Math and Science / Scientist in Every Florida School, virtual, November 7, 2022

[PO] Institute for Learning in Retirement – Oak Hammock

Invited Seminar Speaker - “The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars” Gainesville, FL, November 2, 2022

[MI] Interview with Mashable

[“Below Mars’ surface, life could endure for a shocking amount of time”](#) by Mark Kaufman, October 29, 2022

[IT] McGill University

Invited Seminar Speaker – McGill Space Institute, “The Search for Life on Mars: Challenges and Opportunities in Current and Future Mars Exploration” Montréal, Québec, Canada, October 18, 2022

[IT] NYU Abu Dhabi

Invited Conference Speaker – Center for Space Science, “20 Months on Mars with Perseverance”
Abu Dhabi, United Arab Emirates, October 11, 2022

[MI] Interview with Space and Things Podcast

“[Bringing Home Rocks from Mars](#)” by Emily Carney & Dave Giles, September 29, 2022

[PO] Speaker, Scientific Youth of America [SYA Link](#), virtual, September 24, 2022

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”

“[From the Moon to Mars](#)” by Brendan Byrne, September 20, 2022

[PO] Panelist, The Road to Mission Science: Seminars for students and early career researchers [Webinar Link](#), virtual, September 15, 2022

[MI] Interview for Universe Today

“[New Perseverance Rock Samples Were Altered by Water. They’ll be Coming Back to Earth in the Sample Return Mission](#)” by Matthew Williams, August 31, 2022

[MI] Interview for Forbes

“[Found On Mars: Rocks ‘Altered by Water’ That Could Contain Traces Of Ancient Life](#)” by Jamie Carter, August 25, 2022

[MI] Press Release with UF News

“[Mars rover team, with UF scientist, collects Martian rocks for return to Earth](#)”, by Eric Hamilton, August 25, 2022

- Related international article pickups on: [Yahoo News](#), [The Daily Mail](#), [The Evening Standard](#), [Mirror](#), [Engineering and Technology](#), [Express & Star](#), [Newsweek](#), [Down To Earth](#)

[MI] Interview for Inside Outer Space

“[Mars Biosignature of Life Found?](#)” by Leonard David, August 24, 2022

[MI] Interview for The Planetary Society

“[NASA’s InSight mission is dying. Next could come ‘Mars Life Explorer’](#)” by Jamie Carter, August 22, 2022

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”

“[Curiosity’s decade of discovery on Mars](#)” by Brendan Byrne, August 16, 2022

[MI] Quote in *Space.com*

“[Probing the Red Planet: Finding past life at Jezero crater](#)” by Leonard David, August 10, 2022

[MI] Quote in *Space.com*

“[NASA’s Mars Life Explorer mission would dig deep to hunt for Red Planet life](#)” by Leonard David, July 11, 2022

[PO] Invited Speaker – Sunrise Rotary Club, Gainesville, FL, May 2022

[IT] National Academy of Science [Distinctive Voices](#) series

Invited Speaker “The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars”, Irvine, CA, June 8, 2022

[PO] Interview for 1001: Intro to Everything podcast

“[Life on Mars, Astrobiology, and Geology with NASA](#)”, interview with Andres Pulido, virtual, May 27, 2022

[IT] NASA/ Caltech Jet Propulsion Lab Science Visitor and Colloquium Program

Invited Speaker in Planetary Science Seminar Series: “Best-Laid Plans: Challenges and Opportunities in the Search for Life Beyond Earth”, virtual, May 23, 2022

[MI] Quote in Wired

“[With Dusty Solar Panels, InSight’s Days on Mars Are Numbered](#)” by Ramin Skibba, May 17, 2022

[PO] Article for ‘Curious Kids’, The Conversation

“[Could People Breathe the Air on Mars](#)” by Phylindia Gant and Amy Williams, May 16, 2022. Update as of June 2022 one of the most highly read articles on *The Conversation*.

[MI] Quote in The Space Review (SpaceNews)

“[The Future of Mars Science Missions](#)” by Jeff Foust, May 9, 2022

[IT] Mars Exploration Program Analysis Group (MEPAG)

Invited Briefing on the Decadal Survey prioritization of the Mars Life Explorer Mission Concept, MEPAG Meeting 39, Denver, CO, May 2, 2022

[IT] Mars Exploration Program Office

Invited Briefing on the Decadal Survey prioritization of the Mars Life Explorer Mission Concept, virtual, April 29, 2022

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”

“[The case for Uranus: Outlining the next decade of discovery](#)” by Brendan Byrne, April 26, 2022

[IT] Stetson University

Invited Seminar Speaker – Gillespie Museum Science Café and Armchair Geology Series, “The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars” DeLand, FL, April 14, 2022

[IT] National Academies of Science, Engineering, and Medicine, Space Science Week Keynote Public Lecture

“[The Curiosity to Explore and the Perseverance to Rove: A Decade of Discoveries on Mars](#)”, virtual, March 22, 2022

[MI] Interview with University of Florida ‘From Florida’ Podcast

“[Meet the astrobiologist and her students who are searching for life on Mars](#)” by Nicci Brown, March 15, 2022

[MI] Interview for NPR Morning Edition

“[NASA’s Perseverance rover marks its first year hunting for past life on Mars](#)” by Brendan Byrne, February 18, 2022

- Related article pickup on [WMFE](#)

[MI] Interview with the New York Times

“[On Mars, a NASA Rover and Helicopter’s Year of Surprise and Discovery](#)” by Kenneth Chang, February 15, 2022

[MI] Interview with United Press International

“[Mars rover Perseverance notches a year of science, tech achievements](#)”, by Paul Brinkmann, February, 14, 2022

[MI] Interview for National Geographic

“[Why Signs of Life on Mars Remain So Mysterious](#)” by Nadia Drake, January 31, 2022

[IT] University of Minnesota – Twin Cities

Invited Seminar Speaker – Colloquium, Department of Earth and Environmental Science, “[One Planet, Two Planets, Red Planet, Blue Planet](#)” virtual, November 19, 2021

[MI] Expert Interview for Inside Science

“[Chilean Rocks Aid the Search for Life on Mars](#)” by Zack Savitsky, November 16, 2021

[MI] Interview with WMFE Public Radio Podcast “Are We There Yet?”

“[From Mars to Jupiter, the latest findings from the space probes exploring our solar system](#)”, by Brendan Byrne, October 2021

[MI] Interview with Popular Science

“[Mars’ barren Jezero crater had a wet and dramatic past](#)”, by Kate Baggaley, October 2021

- Related article pickup on [MSN](#)

[MI] Interview with United Press International

“[Perseverance rover’s images confirm flood episodes on Mars](#)”, by Paul Brinkmann, October 2021

- Related international article pickups on [CNN](#), [Space.com](#), [Cosmos Magazine](#), [The Daily Mail](#), [The Guardian](#), [Science Alert](#), [Gizmodo](#), [SpaceRef](#), [The Debrief](#)

[MI] Interview with Furman University Magazine

“[Is There Life Beyond Earth?](#)”, by Liv Osby, October 2021

[MI] Press Release, Interview and Video for University of Florida News 2021 – Highlights of First Scientific Publication from the NASA Perseverance rover mission, UF Research Promotion Initiative Award, [Video](#) & [Article](#), by Alisson Clark, October 2021

[IT] Florida State University

Invited Seminar Speaker – Colloquium, Department of Earth, Ocean, and Atmospheric Science, virtual, October 8, 2021

[PO] Invited Speaker – Rotary Club of Downtown Gainesville, Gainesville, FL, July 2021

[MI] Interview with American Chemical Society Chemical & Engineering News (C&EN) ‘Stereo Chemistry Podcast’ with Samuel Lemonick, May 2021

“[Where is the Water on Mars?](#)”

[PO] Invited Speaker – Sunrise Rotary Club, Gainesville, FL, April 2021

[IT] University of Southern California

Invited Seminar Speaker – Paleoenvironmental Seminar, Department of Earth Science, virtual, March 5, 2021.

[MI] Interview with Canadian Broadcasting Corp (CBC) radio show *As It Happens*

With Carol Off and Chris Howden, 2021 [Podcast](#)

[MI] Interview with WMFE Public Radio “Are We There Yet?”

“Welcome to Mars, Percy. It’s time to do science.” [Podcast](#) & [Article](#), by Brendan Byrne, 2021

[PO] Interview & Q&A with Launch Pad Astronomy LiveStream Show

“[Mars Perseverance with Dr. Amy Williams](#)”, hosted by Christian Ready, 2021

[MI] Interview for First at Five WUFT News

<<https://t.co/T90Bi9fPaA?amp=1>>, by Taylor Levesque, 2021

[MI] Interview with WUFT News

“[Amy Williams is a UF Geology Professor During the Day, NASA Scientist by Night](#)”, by Maybel Cerrato, 2021

[MI] Interview with *The Alligator*

“[UF assistant professor on NASA's Perseverance rover team talks Mars landing](#)”, by Abigail Hasebroock, 2021

[MI] Interview with WUFT News *Noticias*

“[Profesora de UF hace parte del equipo de Perseverance, la sonda que acaba de aterrizar en Marte](#)”, by Valentina Angel, February 2021

[MI] Interview and Video for University of Florida News 2021 – Mars Perseverance Rover Mission [Article](#) & [Video](#), by Alisson Clark, February 2021

[IT] COSPAR Spring 2021 Meeting

Invited talk in session F3.3: Habitability in the Solar System and Beyond, virtual, February 2021.

[IT] American Geophysical Union Fall 2020 Meeting

Invited talk in session P070: Water, Habitability, and Curiosity’s Exploration near the Greenheugh Pediment, a Major Unconformity on Mount Sharp, Gale Crater, Mars I, virtual, December 2020.

[MI] Interview with Inverse.com Science Article

“Searching for Life in the Solar System” by JoAnna Wendel, 2020

[PO] Scientist in Every Florida School (SEFS) Program

Outreach lecture on the Definition of Life and How to Search for Life on Mars delivered to 5 of Ms. Leigh Larsen’s classes at Gainesville High School. September 2020. <https://rb.gy/rwljn1>

[PO] Interview with NASA Astrobiology ‘Countdown to Mars’ for the Perseverance Rover Launch 2020 [Video](#)

[MI] Interview with University of Florida University Relations

[“Searching for Life on Mars with Dr. Amy Williams”](#), by Alisson Clark & Bri Lehan, 2019

[IT] Louisiana State University

Invited Endowed Seminar Speaker, Department of Geology and Geophysics, Baton Rouge, LA, 2018.

[IT] Virginia Polytechnic Institute and State University

Invited Seminar, Department of Geosciences, Blacksburg, VA, 2018.

[IT] University of Florida

Invited Seminar, Department of Geological Sciences, Gainesville, FL, 2018.

[IT] American Geophysical Union Fall 2017 Meeting

Invited talk in session P42B: What Determines Planetary Habitability, and What Biosignatures Might We Expect? I, New Orleans, LA, 2017.

[MI] Interview for Forbes Science Article

[“NASA’s Search for Transfats and Other Fatty Acids on Mars”](#) by Bruce Dorminey, December 2017

[IT] University of Maryland, College Park

Invited Seminar, Department of Geology, College Park MD, 2016.

[IT] Washington and Lee University

Invited Seminar, Department of Geology, Lexington, VA, 2015.

[PO] 'Mars Through Time' Professional Development Training Course

Invited Talks, Lunar and Planetary Institute, 2014 and 2015

[IT] Johns Hopkins Applied Physics Laboratory

Invited Seminar, Space Exploration Division, Laurel, MD, 2014

[PO] Water on Mars Launch Unit - Lawrence Hall of Science

Science Adviser, UC Berkeley, 2014 - 2015

[IT] Sevilleta LTER

Invited Seminars, Sevilleta REU Summer Seminar Series, 2009 and 2014

[PO] TEDxUCDavis

[“Exploring the Final Frontier: Amy Williams at TEDxUCDavis”](#) Invited Talk, UC Davis, 2013

[IT] The Triple Helix, UCD Chapter

Invited talk, University of California, Davis, 2012

Professional Service

Member, Search for Life – Science Analysis Group (2024-2025)

Member, National Academy of Science, Engineering, & Medicine Committee on A Science Strategy for the Human Exploration of Mars - Astrobiology Panel (2024-2026)

Member, National Academy of Science, Engineering, & Medicine Committee on Astrobiology and Planetary Science (CAPS) (2023-2025)

Associate Editor, Journal of Geophysical Research – Planets, Special Issue on “Perseverance’s Exploration of the Western Fan Front in Jezero Crater” (2023-2024)

AGU Planetary Sciences Section Canvassing Committee member (2022-2023)

Panel Member for the National Academy of Science, Engineering, & Medicine Planetary Science & Astrobiology Decadal Survey 2023-2032, Panel on Mars (2020-2021) <https://rb.gy/ooqm7v>

Science Champion for the *Mars Life Explorer* Planetary Mission Concept Study selected for study by the National Academy of Science, Engineering, & Medicine Planetary Science & Astrobiology Decadal Survey 2023-2032 (2021)

Panel Member for the National Academy of Science, Engineering, & Medicine Planetary Science & Astrobiology Decadal Survey 2023-2032, State of the Profession (DEIA) Working Group (2020-2021)

Panel Reviewer for NASA grant review panels (2024, 2023, 2022, 2020, 2017), external reviewer for UK Space Agency (2024), external reviewer for NASA grant review panels (2024, 2017, 2016), external reviewer for 1 NSF grant review panel (2022), executive secretary for 1 NASA grant review panel (2013)

Writing committee member for the “Biosignature Preservation and Detection in Mars Analog Environments” conference, 2016

Peer reviewer for:

- *Environmental Science and Pollution Research* (2013)
- *Geomicrobiology Journal* (2015)
- *Chemical Geology* (2016)
- *Extremophiles* (2017)
- *American Mineralogist* (2017)
- *Earth and Space Science* (2018)
- *Frontiers in Microbiology* (2018)
- *Astrobiology* (2019, 2020, 2021, 2022)
- *Geobiology* (2020)
- *Icarus* (2020)
- *Journal of Hydrology* (2020)
- *Scientific Reports* (2020)
- *Nature Communications* (2021)
- *Journal of Geophysical Research – Planets* (2022)
- *Independent Review of the Community Report from the Biosignature Standards of Evidence Workshop: Report Series from National Academies Committee on Astrobiology and Planetary Sciences* (2022)
- *Journal of Geophysical Research Letters – Biogeosciences* (2023)
- *Geochemical Perspectives Letters* (2024)

Conference Organizing Committee/ Session Organizer

- [2017] Lunar and Planetary Science Conference
- Session Chair
- [2017] Astrobiology Science Conference
- Program Organizing Committee
 - Session co-chair “Novel Geologic Reservoirs for Biosignature Preservation”
- [2022] Astrobiology Science Conference (2022)
- Session primary convener: “Deconvoluting Extraterrestrial Organics: Degraded Lipid Biosignatures or Altered Abiotic Meteoritic Organics?” and,
 - Session co-chair “Astrobiology Investigations Enabled by the NASA Mars 2020 Mission and Sample Return”
 - Session co-chair “Expanding Views of Mineral-Water-Organic Interactions on Mars, Hydrated Asteroids, and Icy Bodies”
 - Session co-chair “Searching for Potential Biosignatures in and around Jezero Crater”
- [2022] American Geophysical Union (2022)
- Session primary convener “Exploration of Jezero Delta”
- [2023] Lunar and Planetary Science Conference
- Program Committee member
 - Session Chair “In, On, and Around Jezero Delta”
- [2024] Astrobiology Science Conference (2024)
- Session Co-Convener & Chair “Terrestrial analogs, research facilities, and state-of-the-art techniques for investigating life under conditions on Ocean Worlds”
 - Session Co-Convener & Chair “New *In Situ* Technologies for Searching for Signatures of Life on Mars”
- [2024] Mars 10 International Conference
- Science Organizing Committee member

Professional Development and Training

Bystander Intervention Training

United States Geological Survey SEES (StepUp! Employee Empowerment Strategies) Program 4-hour training, August 2023

Multicultural Mentoring Workshop

University of Florida – June/ July 2021 – Certificate Earned

Mentoring and Allyship for Faculty Working with Students of Color Panel Discussion

Graduate Student Diversity Research Day Program – April 2021

Early Career Geoscience Faculty Workshop: Teaching, Research and Managing Your Career

National Association of Geoscience Teachers - On the Cutting Edge Program, 2016.

New Faculty Workshop for Chemistry Faculty

Cottrell Scholars Collaborative, 2016.

Undergraduate Teaching & Higher Education Faculty Workshop
Planetary Science Institute, 2015.

Learner-Centered Teaching Workshop
Center for Excellence in Teaching and Learning, UC Davis, 2013.

Seminar on Developing Hybrid and Online Courses
Center for Excellence in Teaching and Learning, UC Davis, 2013.

Moving FORWARD in Space workshop
National Science Foundation Program Focus on Reaching Women for Academics, Research and Development, 2013.

Powerful Pedagogy Workshop Series
Center for Excellence in Teaching and Learning, UC Davis, 2013.

International Geobiology Course
University of Southern California & Colorado School of Mines, 2011.

Preparing for an Academic Career in the Geosciences workshop
National Association of Geoscience Teachers - On the Cutting Edge Program, 2010.

Teaching & Academic Experience

University of Florida:

- **Survey of Geobiology** (GLY4930/6932) lecture and laboratory instructor, 2019-2020, 2022
- **Evolution of Earth and Life in North America** (GLY3105C) lecture instructor 2020-2022
- **Astrobiology Seminar** (GLY4930/6932) lecture instructor, 2021, 2024

Towson University:

- **Physical Geology** (GEOL 121) lecture and laboratory instructor, 2015-2018
- **Survey of Geobiology** (GEOL 470) lecture instructor, 2018
- **Methods for Environmental Geochemistry** (GEOL 410) lecture and lab instructor, 2016, 2018
- **Oceanography** (GEOL 357) lecture guest instructor, 2017
- **Environmental Science Senior Seminar** (ENVS 482) guest instructor, 2017
- **Topics in Environmental Geology** (ENVS 601) graduate level lecture and lab instructor, 2016, 2018

University of California, Davis:

- **First Year Seminar-** 2013 Mars Science Laboratory Rover: Exploring Mars for a Habitable Environment co-instructor, 2013
- **The Oceans** lecture guest instructor, 2012
- **First Year Seminar-** 2011 Mars Science Laboratory Rover: Landing Site Selection and Mission to Mars co-instructor, 2011
- **Sedimentology and Stratigraphy** TA lab instructor, 2011
- **The Earth** TA lab instructor, 2010

Geoscience Education Research Study

Earth & Planetary Sciences Department, UC Davis, 2011.

Institutional Review Board-approved study to assess changes in undergraduate's understanding of the process of science via earth science literacy development in First Year Seminar course "2011 Mars Science Laboratory Rover: Landing Site Selection and Mission to Mars".

University of New Mexico:

- **Environmental Science capstone course** TA lab instructor, 2009
- **Introduction to Environmental Science** TA lab instructor 2007 - 2009

Mentoring

Graduate and Undergraduate Research Advisor and Mentor

Department of Geological Sciences, University of Florida, 2018- *present*.

Served as the primary faculty research advisor for 3 Ph.D., 4 MSc, 12 undergraduate, and 2 high school students. In total I have mentored 45 students including 22 female and 13 minority students.

Graduate and Undergraduate Research Advisor and Mentor

Department of Physics, Astronomy, and Geosciences, Towson University, 2015-2019.

Served as the primary faculty research advisor for 1 MSc and 16 undergraduate students. Directed the senior research project for 15 undergraduate senior thesis students.

Undergraduate/ Intern Research Advisor and Mentor

Earth and Planetary Sciences Department, UC Davis, 2009-2014.

Served as the primary graduate research advisor for two undergraduate students (one geology major and one engineering major) and one high school intern.

Undergraduate Research Advisor and Mentor

Earth & Planetary Sciences Department, University of New Mexico, 2008-2010.

Served as the primary graduate research advisor for five undergraduate students as part of the Sevilleta Research Experience for Undergraduates program

Abstracts

* indicates student advisee

2024

1. **Williams, A.J.**, B. Muirhead, S. Matousek, W. Brinckerhoff, B. Ehlmann, B. Jakosky, V. Hamilton, A. Hofmann, Y. Lin, N. Barba, J. Murphy, P. Backes, C. Edwards, A. Freeman, R. Warwick, The Mars Life Explorer Mission Concept, AbSciCon 2024, Providence, RI.
2. Gant, P.* and **A.J. Williams**, Biosignature Preservation in Acidic and Circumneutral Icelandic Hot Spring Deposits, AbSciCon 2024, Providence, RI.
3. Kivrak, L.*, B. Teece, D. Boulesteix*, **A.J. Williams**, J. Havig, J. Curtis, K. Palmer*, T. Hamilton, Hydrothermal Silica Sinter as a Repository for Lipid Biosignatures Detectable with SAM-Like Thermochemolysis and Lipid Extractions, AbSciCon 2024, Providence, RI.

4. Buckner, D.*, **A.J. Williams**, A. Schuerger, J. Aponte, D. Foustoukos, M. B. Wilhelm, F. Seguin, G. Cooper, UV irradiation of carbonaceous meteorites as a potential synthesis mechanism for small organic acids on Mars, AbSciCon 2024, Providence, RI.
5. Juarez Duran, L.F.*, **A.J. Williams**, A.-L. Paul, S. Elardo, R. Ferl, Characterizing Lipid Byproducts of *Arabidopsis thaliana* growth in Lunar Regolith, AbSciCon 2024, Providence, RI.
6. Pozarycki, C.*, L. Kivrak*, M. Castillo, **A.J. Williams**, T. Gibson, J. Bowman, S. Som, E. Paris, S. Buessecker, L. Fisher, M. Desmarais, M. Weng, A. Odenheimer, V. Hegelein, M. Meister, A. Mullen, E. Quartini, C. Sephus, A. Schartup, B. Klempay, D. Bartlett, E. Ingall, J. Weber, T. Plattner, M. Birmingham, C. Elbon, J. McKaig, C. Ross, P. Doran, B. Schmidt, A. Stockton, Biosignature Organics in Hypersaline Analogs: Obstacles and Insights for *in situ* and Returned Sample Analyses, AbSciCon 2024, Providence, RI.
7. Abrahamsson, V., B. Henderson, M. Badescu, S. Madzunkov, F. Zhong, T. Okamoto, P. Backes, H. Kraus, W. Schubert, F. Chen, Y. Lin, A. Davila, **A.J. Williams**, M. Tuite, Towards Integrated Organic Biosignature Analysis on Mars and Ocean Worlds: From Sample Handling to Detection with the SCHAN Instrument, AbSciCon 2024, Providence, RI.
8. Bosak, T., D. Shuster, B. Weiss, S. Siljeström, L. Mayhew, E. Scheller, J. Simon, K. Hickman-Lewis, K. Stack, K. Farley, J. Bell, K. Benison, A. Brown, C. Herd, M. Madsen, J. Núñez, S. Sharma, A. Steele, M. Wadhwa, **A.J. Williams**, Astrobiological potential of rocks acquired by the Perseverance rover in Jezero crater, Mars, AbSciCon 2024, Providence, RI.
9. **Williams, A.J.**, J. Eigenbrode, M. Millan, R. Williams, O. McIntosh, S. Teinturier, J. Roach, C. Malespin, P. Mahaffy, A. Bryk, A. Buch, L. Chou, J. Dworkin, V. Fox, H. Franz, C. Freissinet, D. Glavin, C. House, J. Lewis, A. Mojarro, R. Navarro-Gonzalez, C. Pozarycki, A. Steele, R. Summons, C. Szopa, A. Vasavada. Diverse Organic Molecules on Mars Revealed by the First SAM TMAH Experiment. LPSC 2024.
10. L.F. Juarez Duran*, **A. J. Williams**, A.-L. Paul, R. Ferl, S. Elardo. Characterizing Biological/Metabolic By-Products of Arabidopsis Growth in Lunar Regolith. LPSC 2024.
11. Gant, P.*, **A.J. Williams**. Assessing the Performance of TMAH Thermochemolysis on Mg-Sulfate Mars-analog Standards. LPSC 2024.
12. Buckner, D.*, **A.J. Williams**, A. Schuerger, J. Aponte, D. Foustoukos, F. Seguin, M.B. Wilhelm, G. Cooper. UV Irradiation of Carbonaceous Meteorites as a Potential Abiotic Synthesis Mechanism for Short-Chain Carboxylic Acids on Mars. LPSC 2024.
13. Kivrak, L.*, B. Teece, D. Boulesteix, **A.J. Williams**, J. Havig, J. Curtis, K. Palmer*, T.L. Hamilton. Hydrothermal Silica Sinter as a Repository for Lipid Biosignatures Detectable with SAM-Like Thermochemolysis. LPSC 2024.
14. Henderson, B., V. Abrahamsson, M. Badescu, S. Madzunkov, F. Zhong, T. Okamoto, P. Backes, H. Kraus, A. Davila, J. Prothmann, W. Schubert, F. Chen, **A. J. Williams**, M. Tuite, Y. Lin. Pushing the Limits of In-situ Organics Detection. LPSC 2024.
15. Meier, M., S. Thatcher, J. Piatek, A. Marshall, Y. Arroyo, S. Leon, **A.J. Williams**, T. Collins, E. Gallant, S. Elardo, D. Williams. Improving Inclusivity and Accessibility in Planetary Science in Remote Field Courses. LPSC 2024.
16. Fornaro, T., A. Alberini, C. García-Florentino, J. Brucato, G. Poggiali, J. Madariaga, I. Poblacion, J. Aramendia, S. Siljeström, S. Sharma, **A.J. Williams**, E. Cloutis. Are Sulfates Preserving Organics on Mars? Insights from Laboratory Irradiation Experiments. LPSC 2024.
17. Broz, A., B. Horgan, H. Kalucha, J.R. Johnson, C. Royer, E. Dehouck, L. Mandon, E.L. Cardarelli, B. Garczynski, J.H. Haber, E. Ives, N. Mangold, T. Bosak, J.J. Simon, P. Gasda, K. Stack-Morgan, E. Clave, B.S. Kathir, M. Zawaski, R. Barnes, S. Siljeström, N. Randazzo, J.M. Madariaga, K. Benison,

- K. Farley, L. Kah, W. Rapin, L. Kivrak*, **A.J. Williams**, E. Hausrath, J. I. Núñez, F. Gómez, A. Steele, T. Fouchet, J.F. Bell, R.C. Wiens. Biosignature Preservation Potential of Sulfate-Rich Rocks from Hogwallow Flats, Jezero crater, Mars. LPSC 2024.
18. Boulesteix, D., A. Buch, **A.J. Williams**, C. Szopa, V. Abrahamsson, B.L. Henderson, L.L. Kivrak*, B.L. Teece, T.L. Hamilton, J.R. Havig. Geochemical and Metabolomic Study of Yellowstone spring systems as Mars analogs. LPSC 2024.
 19. Chou, L. S. Teinturier, J. Eigenbrode, **A.J. Williams**, et al. Preparing for the Final Thermochemolysis Experiment on the Mars Science Laboratory Mission using the Sample Analysis at Mars Testbed. LPSC 2024.
 20. Gupta, S., K. Stack Morgan, N. Mangold, L. Ives, S. Gwizd, G. Caravaca, R. M. E. Williams, N.Randazzo, **A.J. Williams**, et al. Going with the Flow: Sedimentary Evolution of the Jezero Western Fan, Mars. LPSC 2024.
 21. Bosak, T., D. L. Shuster, B. P. Weiss, L. E. Mayhew, E. L. Scheller, S. Siljeström, K. A. Farley, K. M. Stack, A. Brown, C. D. K. Herd, K. Hickman-Lewis, J. Nunez, J. I. Simon, J. Bell III, K. C. Benison, M. Wadhwa, **A. J. Williams**. Astrobiological Potential of Rocks Acquired by the Perseverance Rover at the Front of the Western Sediment Fan in Jezero crater, Mars. LPSC 2024.

2023

22. **Williams, A.J.**, Muirhead, B., Matousek, S., Brinckerhoff, W., Ehlmann, B., Jakosky, B., Hamilton, V., Hofman, A., Lin, Y., Barba, N., Murphy, J., Backes, P., Edwards, C., Freeman, A., Warwick, R. The Mars Life Explorer Mission Concept. AGU Fall Meeting, December 2023. [Invited]
23. **Williams, A.J.**, Eigenbrode, J., Milian, M., Freissinet, C., Sharma, S., Stern, J., Fox, A., Brown, A., Yanchilin, A., Fornaro, T., Glavin, D., Bernard, S., House, C., Chou, L., Archer, D., Szopa, C., Lewis, J., Bosak, T., Weiss, B., Flannery, D., Nunez, J., Summons, R. The Organics of Mars. AGU Fall Meeting, December 2023.
24. Pozarycki, C., L. Kivrak*, **A.J. Williams**, T. Gibson, J. Bowman, S. Som, E. Paris, S. Buessecker, L. Fisher, M. Weng, A. Odenheimer, E. Quartini, C. Sephus, A. Schartup, B. Klempay, E. Ingall, J. Weber, T. Plattner, M. Birmingham, P. Doran, B. Schmidt, A. Stockton. Thermochemolysis by TMAH Releases Organic Biosignature Compounds in the Mars Analog Gypsum Crusts of Western Australia. AGU Fall Meeting, December 2023.
25. Gallant, E., Marshall, A., Piatek, J., Thatcher, S., Arroyo, Y., Collins, T., **Williams, A.J.**, Elardo, E., Meier, M., Williams, D. The GeoSPACE Project: Insights from the Pilot Years of a Hybrid Accessible Field Course. AGU Fall Meeting, December 2023.
26. Seibach, K., Machon, M., and 25 coauthors, including **A.J. Williams**. Overview of Perseverance's Upper Fan Campaign. AGU Fall Meeting, December 2023.
27. Broz, A., B. Horgan, J. Hurowitz, E. Dehouck, H. Kalucha, J. Johnson, L. Mandon, B. Garczynski, E. Cardarelli, J. Haber, C. Royer, N. Randazzo, E. Ives, K. Stack-Morgan, K. Benison, J. Nunez, J. Bell, R.C Wiens, L. Kah, W. Rapin, E. Hausrath, F. Gomez, M. Zawaski, P. Gasda, S. Siljeström, A. Steele, J.M. Madariaga, **A.J. Williams**, T. Fouchet. A comparison of diagenesis between sulfate-rich rocks at Jezero, Gale, and Victoria Craters, Mars: Implications for biosignature preservation. AGU Fall Meeting, December 2023.
28. Szopa, C., O. McIntosh, C. Hajlaoui, C. Freissinet, A. Buch, M. Millan, A.J. Williams, J.M.T. Lewis, J. Eigenbrode, T. Fornaro, J. Brucato. Analysis of Aromatic Acid Salts by Gas Chromatography-Mass Spectrometry: Influence of the Nature of the Cation and Implications for *in situ* Measurements on Mars. AGU Fall Meeting, December 2023.

29. **Williams, A.J.**, Bioessential Elements in Martian Regolith: Beyond the Search for Life on Mars to Growing Plants on the Red Planet. ASA, CSSA, and SSSA Annual Meeting, St. Louis, MO, October 2023. [Invited]
30. Marshall, A., Arroyo, Y., Collins, T., **Williams, A.J.**, Elardo, S., Gallant, E., Williams, D., Piatek, J. Building Community in a Hybrid Field Course through Accessibility, Collaboration and Mentoring: Insights from the Pilot Years of the GeoSPACE Project, Geological Society of America Fall Meeting, October 2023.
31. Thatcher, S., Meier, M., Piatek, J., **Williams, A.J.**, Gallant, E., Marshall, A., Arroyo, Y., Elardo, S., Collins, T., Williams, D.. Enhancing Spatial Reasoning Utilizing a Hybridized Field Course Model, Geological Society of America Fall Meeting, October 2023.
32. Meier, M., Thatcher, S., Piatek, J., Marshall, A., Arroyo, Y., Elardo, S., **Williams, A.J.**, Gallant, E., Williams, D., Collins, T. GeoSPACE: Mission Control and Astronaut Exploration Field Course Teachings, Geological Society of America Fall Meeting, October 2023.
33. Dehouck, E., O. Forni, C. Quantin-Nataf, P. Beck, N. Mangold, C. Royer, E. Clavé, O. Beyssac, J. Johnson, L. Mandon, F. Poulet, S. Le Mouélic, G. Caravaca, H. Kalucha, E. Gibbons, G. Dromart, P. Gasda, P. Meslin, S. Schroeder, A. Udry, R. Anderson, S. Clegg, A. Cousin, T. Gabriel, J. Lasue, T. Fouchet, P. Pilleri, C. Pilorget, J. Hurowitz, J. Núñez, **A.J. Williams**, P. Russell, J. Simon, S. Maurice, R. Wiens. Geochemistry and Mineralogy of Ancient Sedimentary Rocks Analyzed by the SuperCam Instrument in the Jezero Delta, Mars, Goldschmidt, July 2023.
34. Lanza, N., P. Gasda, A. Ollila, B. Chide, B. Garczynski, J. Johnson, W. Fischer, A. Treiman, **A.J. Williams**, S. VanBommel, A. Knight, J. Hurowitz, S. Sharma, H. Kalucha, P. Conrad, K. Benzerara, E. Clave, L. Mandon, R. Wiens, S. Maurice. A varnish-like high-manganese rock coating in Jezero crater, Mars, European Geosciences Union, April 2023.
35. **Williams, A.J.**, P.S. Russell, V.Z. Sun, D. Shuster, K.M. Stack, K.A. Farley, T. Del Sesto, R. Kronyak, J.F. Bell III, O. Beyssac, A. Brown, G. Caravaca, S. Gupta, J. Núñez, N. Randazzo, J.I. Simon, M. Wadhwa. Exploring The Jezero Delta Front: Overview of Results from the Mars 2020 Perseverance Rover's Second Science Campaign, Lunar and Planetary Science Conference, March 2023.
36. Stern, J., J. L. Eigenbrode, H. F. Franz, C. Freissinet, C. H. House, J. M. Lewis, M. Millan, **A.J. Williams**, C. A. Malespin. Organics on Mars: What we've learned at Gale Crater, Lunar and Planetary Science Conference, March 2023.
37. Chou, L., C. Malespin, A. McAdam, D. Glavin, M. Millan, C. Freissinet, C. Szopa, **A.J Williams**, J. Lewis, J. Eigenbrode, S. Teinturier, J. Y. Bonnet, B. Prats, W. Brinckerhoff, S. S. Johnson, P. Mahaffy. Investigating organic molecules in MSL's SAM Wet Chemistry experiments using de novo mass spectrometry interpretation, Lunar and Planetary Science Conference, March 2023.
38. Dehouck, E., O. Forni, C. Quantin-Nataf, P. Beck, N. Mangold, C. Royer, E. Clavé, O. Beyssac, J. R. Johnson, L. Mandon, F. Poulet, S. Le Mouélic, G. Caravaca, H. Kalucha, E. Gibbons, G. Dromart, P. Gasda, P.-Y. Meslin, S. Schroeder, A. Udry, R. B. Anderson, S. Clegg, A. Cousin, T. S. Gabriel, J. Lasue, T. Fouchet, P. Pilleri, C. Pilorget, J. Hurowitz, J. Núñez, **A.J. Williams**, P. Russell, J. I. Simon, S. Maurice, R. C. Wiens, and the SuperCam team. Overview of the Bedrock Geochemistry and Mineralogy Observed by Supercam during Perseverance's Delta Front Campaign, Lunar and Planetary Science Conference, March 2023.
39. Gant, P.*, **A.J. Williams**, M.A.M. Floyd, D. Emerson. Detecting a Novel Biosignature Using Modern Spaceflight Technology, Lunar and Planetary Science Conference, March 2023.

40. Henderson, B., V. Abrahamsson, J. Prothmann, F. Zhong, Y. Lin, W. Schubert, F. Chen, **A.J. Williams**, M. Tuite. A New Approach to Sensitive Analysis of Resilient Biomaterials, Lunar and Planetary Science Conference, March 2023.
41. Kivrak, L.*, S. Halbert*, **A.J. Williams**, A. Buch, Y. He, S.S. Johnson, K. Benison, S. Shaner*, L.E. Judge*. Potential for Trimethylsulfonium Hydroxide as a Thermochemolysis Reagent to Detect Organic Biomarkers in Future Life-Detection Missions, Lunar and Planetary Science Conference, March 2023.
42. Buckner, D.*, M. B. Wilhelm, A. J. Ricco, T. Boone, M. Chin, M. J. Anderson, A. Rademacher, J. L. Eigenbrode, L. L. Jahnke, R. H. Williams, T. Chinn, A. E. Southard, S. Wisnosky, W. Alvarado, X. Li, **A.J. Williams**. The Extractor for Chemical Analysis of Lipid Biomarkers in Regolith (ExCALiBR): An Autonomous Sample Processing Instrument to Enable Detection of Lipids for Life Detection on Mars, Lunar and Planetary Science Conference, March 2023.
43. Cabalceta, M.S., M. L. Meier, A. Thompson, A. Baker, A. Marshall, **A.J. Williams**, J. L. Piatek, Y. Arroyo, T. Collins, S. Thatcher, E. Gallant, S. Elardo, D.A. Williams. GeoSPACE: An Approach to Accessible and Inclusive Planetary Science Education, Lunar and Planetary Science Conference, March 2023.
44. Stack, K.M., S. Gupta, M. Tebolt, G. Caravaca, E. Ives, P. Russell, D. Shuster, **A.J. Williams**, S. Alwmark, R. Barnes, J. Bell III, O. Beyssac, A. Brown, D. Flannery, J. P. Grotzinger, B. Horgan, J. Hurowitz, H. Kalucha, O. Kanine, J.I. Núñez, N. Randazzo, C. Seeger, J. Simon, M. Tice, R.M.E. Williams. Sedimentology and Stratigraphy of the Lower Delta Sequence, Jezero Crater, Mars, Lunar and Planetary Science Conference, March 2023.

2022

45. Russell, P., **Williams, A.J.**, Shuster, D., Kronyak, R., Pyrzak, G., Sun, V., Stack, K., Farley, K., Siebach, K., Caravaca, G., Núñez, J., Gupta, S. Perseverance's Delta-Front Campaign in Jezero Crater, Mars, P55A-01, AGU Fall Meeting, December 2022.
46. Caravaca, G., Mangold, N., Gupta, S., Stack, K., Núñez, J., Dromart, G., Kanine, O., Tate, C., Minitti, M., Sholes, S., Tice, M., Nachon, M., Siebach, K., Grotzinger, J., Flannery, D., Simon, J., Horgan, B., Le Mouelic, S., Shuster, D., **Williams, A.J.**, Russell, P., Farley, K. Insights into the Sedimentary Record and Processes of the Western Delta of Jezero crater (Mars) as observed by the Mars 2020 rover Perseverance, P55A-08, AGU Fall Meeting, December 2022.
47. Gupta, S., Bell, J., Caravaca, G., Kanine, O., Mangold, N., Stack, K., Tate, C., Tice, M., **Williams, A.J.**, Russell, P., Núñez, J., Dromart, G., Williams, R., Le Mouelic, S., Barnes, R., Annex, A., Paar, G., Holm-Alwmark, S., Rice, M., Rice, J., Horgan, B., Grotzinger, J., Maki, J., Hickman-Lewis, K., Kah, L., Shuster, D., Simon, J., Minitti, M., Siebach, K., Gasnault, O., Wiens, R., Maurice, S., Farley, K. Fine-Scale Sedimentary Architecture of the Jezero Western Delta Front, P56A-05, AGU Fall Meeting, December 2022.
48. Sharma, S., Roppel, R., Murphy, A., Beegle, L., Bhartia, R., Steele, A., Hollis, J., Siljeström, S., McCubbin, F., Asher, S., Abbey, W., Allwood, A., Berger, E., Bleefeld, B., Burton, A., Bykov, S., Cardarelli, E., Conrad, P., Corpolongo, A., Czaja, A., DeFlores, L., Edgett, K., Farley, K., Fornaro, T., Fox, A., Fairen, A., Fries, M., Harker, D., Hickman-Lewis, K., Huggett, J., Imbeah, S., Jakubek, R., Kah, L., Lee, C., Liu, Y., Magee, A., Minitti, M., Moore, K., Pascuzzo, A., Sanchez-Vahamonde, C., Scheller, E., Shkolyar, S., Stack, S., Steadman, K., Tuite, M., Uckert, K., Werynski, A., Wiens, R., **Williams, A.J.**, Winchell, K., Kennedy, M., Yanchilina, A. Mapping Organic-Mineral Associations in Jezero crater, P55A-03, AGU Fall Meeting, December 2022.
49. Abrahamsson, V., Henderson, B., Madzunkov, S., Backes, P., Zhong, F., Okamoto, T., Badescu, M., Simcic, J., Maletic, D., Prothmann, J., Schubert, W., Chen, F., Lin, Y., **Williams, A.J.**, Tuite, M. A

- Novel Integrated In-Situ Instrument for Analysis of Organic Biosignatures, P52B-08, AGU Fall Meeting, December 2022.
50. Stack, K., Gupta, S., Caravaca, G., Tebolt, M., Tice, M., Shuster, D., **Williams, A.J.**, Russell, P., Crumpler, L., Farley, K. Exploration of the Lower Delta Succession in Jezero Crater by the Mars 2020 Perseverance Rover, Geological Society of America Fall Conference, v.54, no.5, <https://doi.org/10.1130/abs/2022AM-378520>, October 2022.
 51. Lanza, N.L., P.J. Gasda, E. Swanner, W.W. Fischer, A. Treiman, A. Essunfeld, J. Comellas, **A.J. Williams**, E.B. Rampe, P.-Y. Meslin. Precipitation of Mn-bearing nodules in shallow soft sediments in Gale crater, Mars. Geological Society of America Fall Conference, v.54, no.5, <https://doi.org/10.1130/abs/2022AM-382995>, October 2022.
 52. Meier, M., Neal, M., Abel-Zurstadt, S., Cabalceta, M., Olvera, A., Piatek, J., Williams, A.J., Marshall, A. GEOSpace remote analysis team: virtually exploring volcanic analogs for the moon and mars. Geological Society of America Fall Conference, v.54, no.5, <https://doi.org/10.1130/abs/2022AM-379704>, October 2022.
 53. **Williams, A.J.**, H. Boles*, K. Craft, A. Goldberg*, S.S. Johnson*, L. Judge*, N.L. Lanza, K. Lynch, C. Munoz-Saez, D. Oehler, S. Shaner*, C. Sturup*, R.E. Summons, P. Thompson, G. Zhuang. Choosing the Right Tools for the Job: Life-Detection Payloads for Mars, Astrobiology Science Conference, May 2022. [Invited]
 54. P.C. Gant*, **A.J. Williams**, M.A.M. Floyd, D. Emerson, L.L. Kivrak*, L. Judge*. Biosignatures in Iron Oxidizing Microbes (BIOMe) – A Study on Metabolic Processes Preserved as Biosignatures from Iron Metabolizing Microorganisms, Astrobiology Science Conference, May 2022.
 55. Juarez Duran, F.*, **A.J. Williams**, D. Hu*, P. Thompson*, C. Muñoz-Saez. Organics Detection from the El Tatio Geyser Field Digitate Stromatolites, with Implications for Organics Detection in Comparable Digitate Structures From Columbia Hills in Gusev Crater, Mars, Astrobiology Science Conference, May 2022.
 56. Prescott, E.J.*, **A.J. Williams**, K.L. Craft, J.R. Skok. Detection of Organics in Icelandic Hot Spring Deposits with Implications for Organics Preservation in Relict Martian Hot Spring Environments. Astrobiology Science Conference, May 2022.
 57. Wilhelm M.B., A.J. Ricco, D. Buckner*, T. Boone, M. Chin, J.L. Eigenbrode, L.L. Jahnke, R. Williams, M.J. Anderson, T. Hoac, A. Rademacher, T. Chinn, A.E. Southard, S. Wisnosky, **A.J. Williams**, X. Li, The ExCALiBR Instrument for Lipid-Based Life Detection on Mars, Astrobiology Science Conference, May 2022.
 58. Cardarelli, E., S. Sharma, A. Murphy, J. Tarnas, C. Lee, R. Bhartia, L. Beegle, E. Berger, **A.J. Williams**, D. Flannery, L. Kah, S. Siljeström. Assessing Organic Preservation and the Implications for Potential Biosignatures in the Bastide Member of the Séítah Formation, Jezero Crater, Astrobiology Science Conference, May 2022.
 59. Shaner, S.E.*, **A.J. Williams**, and Guangsheng Zhuang. Improving thermochemolysis methods: Lipid biosignature from the hyperarid Qaidam Basin, China, Astrobiology Science Conference, May 2022.
 60. Buckner, D.*, M. Anderson, S. Wisnosky, **A.J. Williams**, M.B. Wilhelm, W. Alvarado. Origin-diagnostic Distributions of Fatty Acids and Acyclic Hydrocarbons: Astrobiological Applications, Astrobiology Science Conference, May 2022.
 61. Boles, H.*, F. Juarez Duran*, **A.J. Williams**, D. Oehler. Organics Detection in Ancient Cratonic Rocks with SAM-Instrument-Like TMAH Wet Chemistry, Astrobiology Science Conference, May 2022.

62. Halbert S.*, L. Kivrak*, **A.J. Williams**, S. Johnson, K. Benison. Comparison of the Presence of Fatty Acid Methyl-Esters in Mars Analog Samples using TMAH and TMSH, Astrobiology Science Conference, May 2022.
63. Millan M., **A.J. Williams**, A. McAdam, J. Eigenbrode, A. Steele, C. Freissinet, D. Glavin, C. Szopa, A. Buch, J. Lewis, G. Wong, C. House, B. Sutter, O. McIntosh, A. Bryk, H. Franz, C. Pozarycki, J. Stern, R. Navarro-Gonzalez, D. Archer Jr., V. Fox, K. Bennett, S. Teinturier, C. Malespin, S. Johnson, P. Mahaffy. Organic Molecules Revealed in the Glen Torridon Region of Gale crater, Mars, by the SAM Instrument on Board Curiosity, Astrobiology Science Conference, May 2022.
64. Henderson, B., J. Prothmann, V. Abrahamsson, W. Schubert, F. Chen, F. Zhong, Y. Lin, **A.J. Williams**, M. Tuite Jr. Enabling Analysis of Resilient Biomaterials with Supercritical Carbon Dioxide and Subcritical Water, Astrobiology Science Conference, May 2022.
65. Kivrak, L.*, **A.J. Williams**, A. Buch, Y. He Optimizing the Pyrolysis Temperature of TMSH Thermochemolysis for Fatty Acid and Nucleobase Detection, Astrobiology Science Conference, May 2022.
66. Wisnosky, S., D. Buckner*, M.B. Wilhelm, M. Anderson, W. Alvarado, **A.J. Williams**. Origin-Diagnostic Patterns and Distributions in Fatty Acids for Life Detection, Astrobiology Science Conference, May 2022.
67. Sharma S., L. Beegle, R. Bhartia, S. Shkolyar, E. Berger, A. Corpolongo, A.D. Czaja, A. Murphy, A. Fairen, E. Cloutis, S. Siljeström, A. Steele, A. Yanchilina, P. Conrad, K. Moore, **A.J. Williams**, and the Mars 2020 Science Team. On the Hunt for Detectable Biosignatures in Jezero Crater: What to Look for and Where, Astrobiology Science Conference, May 2022.
68. Piatek, J., D. Williams, **A.J. Williams**, A. Marshall. Accessible Terrestrial Analogs: Planning the GEOSPACE Planetary Volcanology Field Course, Advancing IDEA in Planetary Science, virtual conference, April 2022.
69. **Williams, A.J.**, F. Juarez Duran*, D. Hu*, P. Thompson*, C. Muñoz-Saez. Organics Detection from The El Tatio Geyser Field Digitate Stromatolites, With Implications For Organics Detection In Comparable Digitate Structures From Columbia Hills In Gusev Crater, Mars, Lunar and Planetary Science Conference, March 2022.
70. Kivrak, L.* and **A.J. Williams**. Optimizing the Pyrolysis Temperature for TMSH Thermochemolysis for Improved Biosignature Detection on Acidic Samples, Lunar and Planetary Science Conference, March 2022.
71. Buckner, D.*, M.J. Anderson, S. Wisnosky, W. Alvarado, A.J. Williams, M.B. Wilhelm. Origin-Diagnostic Patterns in Lipid Distributions: Strategies for Life Detection, Lunar and Planetary Science Conference, March 2022.
72. Prescott, E*, **A.J. Williams**, K. Craft, J.R. Skok. Detection of Organics in Hot Spring Deposits with Implications for Organics Preservation in Relict Martian Hot Spring Environments, Lunar and Planetary Science Conference, March 2022.
73. Lanza, N., P.J. Gasda, E. Swanner, W.W. Fischer, A. Treiman, A. Essunfeld, J. Comellas, **A.J. Williams**, E. Rampe, P.Y. Meslin, C. House. Mineralization Of Mn-Bearing Nodules in a Shallow Shoreline Environment, Lunar and Planetary Science Conference, March 2022.
74. Gupta, S., N. Mangold, G. Caravaca, O. Gasnault, G. Dromart, J. D. Tarnas, S.F. Sholes, B. Horgan, C. Quantin-Nataf, A.J. Brown, S. Le Mouélic, R.A. Yingst, J.F. Bell, O. Beyssac, T. Bosak, F. Calef III, B.L. Ehlmann, K.A. Farley, J.P. Grotzinger, K. Hickman-Lewis, S. Holm-Alwmark, L.C. Kah, J. Martinez-Frias, S.M. McLennan, S. Maurice, J.I. Nuñez, A.M. Ollila, P. Pilleri, J.W. Rice Jr, M. Rice, J.I. Simon, D.L. Shuster, K.M. Stack, V.Z. Sun, A.H. Treiman, B.P. Weiss, R.C. Wiens, **A.J. Williams**, N.R. Williams, K.H. Williford. Sedimentary Architecture of The Jezero Western Delta: Early

Constraints On Depositional Evolution From Long Distance Observations, Lunar and Planetary Science Conference, March 2022.

75. Mangold, N., Gupta, S., G. Caravaca, O. Gasnault, G. Dromart, J. D. Tarnas, S.F. Sholes, B. Horgan, C. Quantin-Nataf, A.J. Brown, S. Le Mouélic, R.A. Yingst, J.F. Bell, O. Beyssac, T. Bosak, F. Calef III, B.L. Ehlmann, K.A. Farley, J.P. Grotzinger, K. Hickman-Lewis, S. Holm-Alwmark, L.C. Kah, J. Martinez-Frias, S.M. McLennan, S. Maurice, J.I. Nuñez, A.M. Ollila, P. Pilleri, J.W. Rice Jr, M. Rice, J.I. Simon, D.L. Shuster, K.M. Stack, V.Z. Sun, A.H. Treiman, B.P. Weiss, R.C. Wiens, **A.J. Williams**, N.R. Williams, K.H. Williford. Significance Of the Variations In Fluvial Input Within Jezero Crater From Perseverance Rover Observations, Lunar and Planetary Science Conference, March 2022.
76. Scheller, E.L., J. Razzell Hollis, E. L. Cardarelli, A. Steele, L. W. Beegle, R. Bhartia, P. Conrad, K. Uckert, S. Sharma, B. L. Ehlmann, S. Asher, E. L. Berger, A. S. Burton, S. Bykov, T. Fornaro, A. C. Fox, M. Fries, L. Kah, T. Kizovski, F. M. McCubbin, K. Moore, R. Roppel, S. O. Shkolyar, S. Siljeström, **A.J. Williams**, B. Wogsland, R.C. Wiens. First-results from the Perseverance SHERLOC investigation: Aqueous alteration processes and implications for organic geochemistry in Jezero crater, Mars, Lunar and Planetary Science Conference, March 2022.
77. Murphy, A.E., L.W. Beegle, R. Bhartia, L. DeFlores, W. Abbey, J. Razzell Hollis, S. Asher, E. Berger, S. Bykov, A. Burton, A. Fox, M. Fries, P. Conrad, S. Clegg, K. S. Edgett, B. Ehlmann, L. Kah, C. Lee, M. Minitti, R. Roppel, S. Sharma, S. Siljeström, C. Smith, P. Sobron, A. Steele, R. Wiens, **A.J. Williams**, K. Williford, B. Wogsland, M. R. Kennedy, R. A. Yingst. The First 300 Sols of The SHERLOC Investigation On The Mars 2020 Rover, Lunar and Planetary Science Conference, March 2022.
78. Simon, J., H.E.F. Amundsen, L.W. Beegle, J. Bell, K.C. Benison, E.L. Berger, T. Bosak, T.M. Casademont, A.D. Czaja, B.A. Cohen, V. Debaille, A.G. Fairen, K.A. Farley, A.C. Fox, Y. Goreva, K. Hand, S.-E. Hamran, E.M. Hausrath, C. Herd, B. Horgan, J. Hurowitz, C.H. Lee, L. Mandon, M. Sylvestre, L.E. Mayhew, S. McLennan, R.C. Moeller, E.L. Scheller, S. Sharma, S. Siljeström, L.V. Sun, D.L. Shuster, K.M. Stack, A. Udry, S. VanBommel, B.P. Weiss, R. Wiens, **A.J. Williams**, P.A. Willis, M.-P. Zorzano, and the Mars 2020 Team. Past and Potential Future Sampling of Jezero Crater Máaz formation by the Mars 2020 Perseverance Rover, Lunar and Planetary Science Conference, March 2022.

2021

79. **Williams, A.J.**, W. Abbey, T. Bosak, A.J. Brown, A. Burton, T. Fornaro, A. Fox, S. Gupta, K.P. Hand, J. Razzell Hollis, C. Lee, K. Moore, S. Neveu, R.C. Wiens, P.A. Willis, M.-P. Zorzano, K.A. Farley. Influence of Sedimentology and Mineralogy on the Potential for Organics Detection in the Rock Record at Jezero Crater, Mars, American Geophysical Union Fall Meeting, December 2021.
80. Mojarro, A., **A.J. Williams**, M. Millan, J.L. Eigenbrode, R.E. Summons. A Re-Analysis of Murchison Meteorite Using Tetramethylammonium Hydroxide (TMAH) Thermochemolysis Under Simulated Sample Analysis at Mars (SAM) Pyrolysis GC-MS Conditions, American Geophysical Union Fall Meeting, December 2021.
81. Millan, M., **A.J. Williams**, A. McAdam, J. Eigenbrode, C. Freissinet, D. Glavin, C. Szopa, A. Buch, R. Williams, D. Archer Jr., B. Sutter, J. Lewis, G. Wong, H. Franz, J. Stern, R. Navarro-Gonzalez, V. Fox, A. Bryk, K. Bennett, A. Steele, S. Teinturier, C. Malespin, S. Johnson, P. Mahaffy. Characterization of Organic Molecules in the Glen Torridon Region of Gale crater, Mars, by the SAM Instrument Aboard Curiosity, American Geophysical Union Fall Meeting, December 2021.
82. Mangold, N., S. Gupta, O. Gasnault, G. Dromart, J. Tarnas, S. Sholes, B. Horgan, C. Nataf, A. Brown, S. Le Mouélic, A. Yingst, J.F. Bell III, O. Beyssac, T. Bosak, F.J. Calef III, B. Ehlmann, K. Farley, J. Grotzinger, K. Hickman-Lewis, S. Holm-Alwmark, L. Kah, J. Martínez-Frías, S. McLennan, S.

- Maurice, J. Núñez, A. Ollila, P. Pilleri, J. Rice, M. Rice, J. Simon, D. Shuster, K. Stack, V. Sun, A. Treiman, B. Weiss, R. Wiens, **A.J. Williams**, N. Williams, K. Williford and Mars 2020 Science Team. Observations of the Jezero Crater Delta Front by Perseverance Cameras, American Geophysical Union Fall Meeting, December 2021.
83. Roach, J.*, **A.J. Williams**, J. Eigenbrode, M. Millan, R. Williams, A. Buch, S. Teinturier, D. Glavin, C. Freissinet, C. Szopa, O. McIntosh, S.S. Johnson, C. Knudson, J. Lewis, A. McAdam, R. Navarro-Gonzalez, V. Fox, A. Bryk, R. Summons, A. Mojarro, A. Steele, C. House, H. Franz, W. Brinckerhoff, C. Malespin, P. Mahaffy. Organic Molecules on Mars: Results from the First *In Situ* TMAH Thermochemolysis Experiment at Gale Crater, Mars. American Geophysical Union Fall Meeting, December 2021.
 84. Stack, K.M., Farley, K., Williford, K., and the Mars 2020 Science Team (including **A.J. Williams**). The Mars 2020 Perseverance Rover's Science Mission in Jezero Crater. Geological Society of America Abstracts with Programs, October 2021.
 85. Piatek, J., Marshall, A., Williams, D., Gallant, E., **Williams, A.J.** The GEOSPACE Project: Boldly Going Where Traditional Geoscience Field Courses Often Don't, AAS Division of Planetary Science, virtual conference, October 2021
 86. Karunatillake, S., D. Hood, A. Barbato, M. Vithanage, R. Chandrajith, S. Perl, J. Lorenzo, C. Oze, **A.J. Williams**, S. P. K. Malaviarachchi, P. L. Dharmapriya. Sri Lanka's Serpentine Zone as a Mars Analog Site, Workshop on Terrestrial Analogs for Planetary Exploration virtual conference, June 2021.
 87. Williams, D., J.L. Piatek, **A.J. Williams**, A. Marshall. Increasing Accessibility of the Holey Tour: ASU's Introductory Planetary Geology Field Trip, Workshop on Terrestrial Analogs for Planetary Exploration virtual conference, June 2021.
 88. Sturup. C.*, M. Rogers*, and **A. J. Williams**. Organics Detection in Acid Mine Drainage Sediments, with Implications for Organics Preservation in Iron-Rich Acid and Saline Environments on Mars. UF Undergraduate Research Symposium, March 2021.
 89. Boles, H.O.*, **A. J. Williams**, D. Oehler. Organics Detection in Ancient Cratonic Rocks with TMAH Wet Chemistry. UF Undergraduate Research Symposium, March 2021.
 90. Prescott, E.*, **Williams, A.J.** Organics Detection in Icelandic Spring Deposits. UF Undergraduate Research Symposium, March 2021.
 91. **Williams, A.J.**, J. Eigenbrode, M. Millan, R.H. Williams, A. Buch, S. Teinturier, D.P. Glavin, C. Freissinet, C. Szopa, O. McIntosh, S.S. Johnson, C. Knudson, J.M.T. Lewis, A. McAdam, R. Navarro-González, V. Fox, A.B. Bryk, R. Summons, A. Mojarro, A. Steele, H. Franz, W. Brinckerhoff, C. Malespin, P. R. Mahaffy. Organic Molecules Detected with the First TMAH Wet Chemistry Experiment, Gale Crater, Mars. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 92. **Williams, A.J.**, N. L. Lanza, M. Millan, A. McAdam, C.H. House, J.M.T. Lewis, E. Rampe, W.W. Fischer, A.M. Ollila, M. Thorpe, P. Mahaffy. Organic Matter Heterogeneity in the Mary Anning/Groken Drill Site, Gale Crater, Mars. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 93. Kivrak. L.*, **A.J. Williams**, A. Buch, Y. He. Trimethylsulfonium Hydroxide (TMSH) Thermochemolysis With Py-GC-MS as a Method of Organic Biosignature Detection: Optimization for Nucleobase Detection. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 94. Judge, L.E.*, **A. J. Williams**, N. L. Lanza, A. M. Ollila, M. N. Spilde, V. W. Lueth. Determining the Biosignature Preservation Potential of Manganese Oxides Using Laboratory and Spaceflight

- Analysis Techniques. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
95. Sturupp, C.*, M. Rogers*, and **A. J. Williams**. Organics Detection in Acid Mine Drainage Sediments, with Implications for Organics Preservation in Iron-Rich Acid and Saline Environments on Mars. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 96. Boles, H.O.*, **A. J. Williams**, D. Oehler. Organics Detection in Ancient Cratonic Rocks with TMAH Wet Chemistry. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 97. Millan, M., **A.J. Williams**, A. McAdam, J.L. Eigenbrode, C. Freissinet, D.P. Glavin, C. Szopa, A. Buch, R.H. Williams, R. Navarro-Gonzalez, J.M.T. Lewis, V. Fox, A.B. Bryk, K. Bennett, A. Steele, S. Teinturier, C. Malespin, S.S. Johnson, P.R. Mahaffy. Organic Molecules Revealed in Glen Torridon by the SAM Instrument. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 98. McAdam, A.C., B. Sutter, P. D. Archer, H. B. Franz, J. L. Eigenbrode, C. A. Knudson, J. M. T. Lewis, G. M. Wong, J. V. Clark, M. Millan, **A. J. Williams**, S. Andrejkovičová, C. Freissinet, D. P. Glavin, J. C. Stern, R. Navarro- González, C. N. Achilles, D. W. Ming, R. V. Morris, T. F. Bristow, E. B. Rampe, M. T. Thorpe, A.S. Yen, C. H. House, A. B. Bryk, V. K. Fox, K. A. Bennett, S. S. Johnson, P. R. Mahaffy, C. A. Malespin. Investigation of the Glen Torridon Clay-Bearing Unit and Overlying Greenheugh Pediment by the Sample Analysis at Mars Instrument Suite. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 99. Lanza, N.L. P. J. Gasda, A. Essunfeld, J. Comellas, G. Caravaca, E. Rampe, **A.J. Williams**, P.Y. Meslin, E. Dehouck, N. Mangold, W. Rapin, R. Hazen, W.W. Fischer, A.M. Ollila, C. House, R.C. Wiens. Chemistry of Manganese-Bearing Materials at the Grogen Drill Site, Gale Crater, Mars. N Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 100. Weng, M.M., E. Zaikova, M. Millan, **A.J. Williams**, A. McAdam, C. A. Knudson, K.L. Craft, N.Y. Wagner, S.K. Nawotniak, J. L. Heldmann, S.S. Johnson. Life in the Dark: The Blue Dragon Flow as an analog for the Martian Subsurface. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 101. Navarro-González, R., K. F. Navarro, P. Coll, C. P. McKay, B. Sutter, J. C. Stern, P. D. Archer, A. C. McAdam, C. Szopa, C. Freissinet, H. B. Franz, A. Buch, B. D. Prats, M. Millan, J. L. Eigenbrode, D. Coscia, S. Teinturier, J.-Y. Bonnet, D. P. Glavin, **A. J. Williams**, F. Raulin, M. Cabane, D. W. Ming, C. A. Malespin, P. Mahaffy, F. J. Martín-Torres, M.-P. Zorzano-Mier, S. Atreya, A. Fraeman, A. R. Vasavada. Abiotic Input of Fixed Nitrogen by Bolide Impacts in CH₄+CO₂+N₂ and H₂+CH₄+CO₂+N₂ Atmospheres. Comparison with Nitrate Levels Measured by the Curiosity Rover's Sample Analysis at Mars Instrument. Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 102. Navarro-González, R., P. Coll, C. Szopa, C. Freissinet, A. Buch, C.P. McKay, O. McIntosh, M. Millan, P.D. Archer, J.L. Eigenbrode, B. Sutter, B.D. Prats, **A.J. Williams**, A.C. McAdam, H.B. Franz, A. Steele, S. Atreya, G.M. Wong, J.C. Stern, D.W. Ming, D. Coscia, S. Teinturier, J.-Y. Bonnet, J.V. Clark, C.H. House, D.P. Glavin, F. Raulin, M. Cabane, C.A. Malespin, P. Mahaffy, F.J. Martín-Torres, M.-P. Zorzano-Mier, P.-Y. Meslin, J.A. Rodriguez-Manfredi, A. Fraeman, A.R. Vasavada. Search Of Phosphine In The Evolved Gases From Hypophosphite/ Phosphite Minerals In Lacustrine Sedimentary Rocks At Gale Crater By The Sample Analysis At Mars Lunar and Planetary Science Conference, The Woodlands, TX, March 2021.
 103. **Williams, A.J.**, J. Eigenbrode, R.H. Williams, A. Buch, S. Teinturier, M. Millan, D.P. Glavin, C. Freissinet, C. Szopa, S.S. Johnson, C. Knudson, J.M.T. Lewis, A. McAdam, R. Navarro-González, C.

- Malespin, P.R. Mahaffy. Results from the TMAH Wet Chemistry Experiment on the Sample Analysis at Mars (SAM) Instrument Onboard NASA's Curiosity Rover. COSPAR, January 2021. [Invited talk].
104. McAdam, A.C., B. Sutter, P. D. Archer, H. B. Franz, J. L. Eigenbrode, J. C. Stern, C. A. Knudson, J. M. T. Lewis, G. M. Wong, M. Millan, S. Andrejkovičová, J. V. Clark, C. N. Achilles, D. W. Ming, R. V. Morris, T. F. Bristow, E. B. Rampe, R. Navarro-González, S. S. Johnson, **A. J. Williams**, P. R. Mahaffy. Constraints on the Mineralogy and Chemistry of the Glen Torridon Clay-Bearing Unit from the Sample Analysis at Mars (SAM) Instrument on NASA's Curiosity Rover. COSPAR, January 2021.
 105. Millan, M., K. Campbell, M. Van Kranendonk, C. Sriaporn, K. Handley, **A.J. Williams**, L. Chou, P.R. Mahaffy, S.S. Johnson. Preservation and Detection of Lipid Biosignatures in Modern Hot Spring Deposits using the Flight-like Experiments from the SAM and MOMA Instruments. COSPAR, January 2021.
 106. Navarro-González, R., K.F. Navarro, J. Urrutia-Fucugauchi, C.P. McKay, L. Pérez-Cruz, P. Coll, J.L. Eigenbrode, **A.J. Williams**, C.A. Malespin, P.R. Mahaffy, F.J. Martín-Torres, M.P. Zorzano-Mier. Thiophene trends in sediments of two impact craters: Chicxulub and Gale. Implications to surface environmental conditions. COSPAR, January 2021.
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107. **Williams, A.J.**, J. Eigenbrode, R.H. Williams, A. Buch, S. Teinturier, M. Millan, D.P. Glavin, C. Freissinet, C. Szopa, S.S. Johnson, C. Knudson, J.M.T. Lewis, A. McAdam, R. Navarro-González, V. Fox, A.B. Bryk, R. Summons, W. Brinckerhoff, C. Malespin, P.R. Mahaffy. The Search for Fatty Acids on Mars: Results from the First *In Situ* Thermochemolysis Experiment at Gale Crater, Mars. AGU Fall 2020 Meeting, December 2020 [Invited talk].
 108. Shaner, S.*, **Williams, A.J.**, Judge, L.*, Kivrak, L.*, Zhuang, G. Lipid Biosignature Detection by TMSH Lipid Biosignature Detection by TMSH Thermochemolysis and Pyrolysis GC-MS in the Mars-Analog Sediments of Hyperarid Qaidam Basin, China. AGU Fall 2020 Meeting, December 2020.
 109. McAdam, A., B. Sutter, D. Archer Jr., H.B. Franz, J.L. Eigenbrode, C.A. Knudson, J.M.T. Lewis, G. Wong, M. Millan, S. Andrejkovicová, J. Hogancamp, **A.J. Williams**, C. Freissinet, D.P. Glavin, J. Stern, R. Navarro-Gonzalez, C. Achilles, D. Ming, R. Morris, T. Bristow, E. Rampe, A. Bryk, S. Johnson, P. Mahaffy, C. Malespin. Constraints on the Depositional and Diagenetic History of the Glen Torridon Clay-Bearing Unit from the Mars Science Laboratory Sample Analysis at Mars Instrument Suite. AGU Fall 2020 Meeting, December 2020.
 110. Judge, L.*, **Williams, A.J.**, Lanza, N., Ollila, A.M., Spilde, M.N., Lueth, V.W., Shaner, S., Kivrak, L.* Trends in Trace Elements from Biogenic and Abiogenic Manganese Oxides. AGU Fall 2020 Meeting, December 2020.
 111. Kivrak L.*, Shaner, S.*, Judge, L.*, **Williams, A.J.**, McAdam, A., Andrejkovicová, S.C. Trimethylsulfonium hydroxide (TMSH) as a Thermochemolysis Reagent for Detecting Fatty Acids in Mars and Ceres-analog Samples. AGU Fall 2020 Meeting, December 2020.
 112. Eigenbrode, J.L., **Williams, A.J.**, R.H. Williams, A. Buch, S. Teinturier, M. Millan, D.P. Glavin, C. Freissinet, C. Szopa, J.M.T. Lewis, A. McAdam, R. Navarro-Gonzalez, H.B. Franz, D. Archer Jr., B. Sutter, R.E. Summons, A. Steele, C. Malespin, P.R. Mahaffy. Sample Chemistry Revealed by TMAH-Evolved Gas Analysis: Results from the First *In Situ* Thermochemolysis Experiment at Gale Crater, Mars. AGU Fall 2020 Meeting, December 2020.

113. Judge, L.*, **Williams, A.J.**, Lanza, N., Ollila, A.M., Spilde, M.N., Lueth, V.W., Shaner, S., Kivrak, L. Quantifying the Organics Load Within Manganese Oxides Using Mars Spaceflight Pyrolysis GC-MS Techniques. Geological Society of America Fall 2020 Meeting, October 2020.
114. Kivrak, L.*, **Williams, A.J.**, Buch, A., He, Y. Optimizing the Pyrolysis Temperature of TMSH Thermochemolysis for Use in GC-MS Biosignature Detection. Geological Society of America Fall 2020 Meeting, October 2020.
115. Sturup, C.*, Rogers, M.*, **Williams, A.J.** Organics Detection in Acid Mine Drainage Sediments, With Implications for Organics Preservation in Iron Rich Acid and Saline Environments on Mars. Geological Society of America Fall 2020 Meeting, October 2020.
116. Shaner, S.E.*, **A. J. Williams**, G. Zhuang. Organics Preservation in The Hyperarid Qaidam Basin, China: An Analog for Fluvio-Lacustrine Deposits In Gale Crater, Mars. University of Florida Undergraduate Research Symposium, Gainesville, FL, April 2020.
117. Sturup, C.*, M. Rogers*, and **A. J. Williams**. Organics Detection in Acid Mine Drainage Sediments, with Implications for Organics Preservation in Iron-Rich Acid and Saline Environments on Mars. University of Florida Undergraduate Research Symposium, Gainesville, FL, April 2020.
118. Burnette, S.*, and Williams, A.J. Preservation of Organic Biosignatures in Icelandic Iron Sinter Springs. University of Florida Undergraduate Research Symposium, Gainesville, FL, April 2020.
119. **Williams, A.J.**, C. Muñoz, S. Shaner*, D. Hu*, P. Thompson*. Organics Preservation and Detection From The El Tatio Geysir Field Digitate Stromatolites, With Implications For Organics Detection In Comparable Digitate Structures From Columbia Hills In Gusev Crater, Mars. Lunar and Planetary Science Conference, The Woodlands, TX, March 2020.
120. Shaner, S.E.*, **A. J. Williams**, G. Zhuang. Organics Preservation In The Hyperarid Qaidam Basin, China: An Analog For Fluvio-Lacustrine Deposits In Gale Crater, Mars. Lunar and Planetary Science Conference, The Woodlands, TX, March 2020.
121. Sturup, C.*, M. Rogers*, and **A. J. Williams**. Organics Detection in Acid Mine Drainage Sediments, with Implications for Organics Preservation in Iron-Rich Acid and Saline Environments on Mars. Lunar and Planetary Science Conference, The Woodlands, TX, March 2020.
122. Judge, L.*, Shaner, S.*, Kivrak, L.*, **Williams, A.J.**, Lanza, N., Spilde, M. Geobiology of Manganese Oxides. Lunar and Planetary Science Conference, The Woodlands, TX, March 2020.
123. Kivrak, L.*, Shaner, S.*, Judge, L.*, **Williams, A.J.** Trimethylsulfoniumhydroxide (TMSH) as a Thermochemolysis Reagent for Detecting Fatty Acid Methyl Esters In Iron Oxide And Siliceous Sinter Mars-Analog Rocks. Lunar and Planetary Science Conference, The Woodlands, TX, March 2020.
124. Millan, M., C. Pozarycki, A. McAdam, S. Andrejkovičová, P. Mahaffy, D. Glavin, A. Buch, C. Szopa, C. Freissinet, A. Srivastava, S. Teinturier, C. Malespin, R. Williams, **A.J. Williams**, J. Eigenbrode, R. Navarro-Gonzalez, S. S. Johnson. Optimization of the Sample Analysis at Mars Wet Chemistry Experiment for the Detection of Organics in Glen Torridon. Lunar and Planetary Science Conference, The Woodlands, TX, March 2020.
125. Fraeman, A.A., L. A. Edgar, E. B. Rampe, J. L'Haridon, N. Mangold, L. Thompson, J. Frydenvang, C. M. Fedo, J. P. Grotzinger, J. G. Catalano, V. Z. Sun, C. House, C. Hardgrove, T. S. J. Gabriel, S. Czarnecki, A. R. Vasavada, R. V. Morris, R. E. Arvidson, A. Bryk, S. Banham, K. Bennett, J. C. Bridges, W. Dietrich, C. S. Edwards, W. W. Fischer, V. K. Fox, S. Gupta, B. Horgan, S. Jacob, J. R. Johnson, S. S. Johnson, D. M. Rubin, M. Salvatore, S. P. Schwenzer, K. Siebach, N. T. Stein, K. M. Stack, S. Turner, D. Wellington, **A.J. Williams**. The Origin of Vera Rubin Ridge: Overview and

Results from Curiosity's Exploration Campaign. Lunar and Planetary Science Conference, The Woodlands, TX, March 2020.

126. McAdam, A.C., B. Sutter, P. D. Archer, H. B. Franz, J. L. Eigenbrode, J. C. Stern, C. A. Knudson, J. M. T. Lewis, G. M. Wong, M. Millan, S. Andrejkovičová, J. V. Hogancamp, C. N. Achilles, D. W. Ming, R. V. Morris, T. F. Bristow, E. B. Rampe, R. Navarro-Gonzalez, S. S. Johnson, **A. J. Williams**, P. R. Mahaffy. The Chemistry and Mineralogy of the Clay-Bearing Unit from Sample Analysis at Mars Analyses. Lunar and Planetary Science Conference, The Woodlands, TX, March 2020.

2019

127. **Williams, A.J.**, C. Muñoz, K. Craft, M. Milan, S.S. Johnson, P. Thompson*, D. Hu*, Martian hot spring deposits as a depot for biosignatures (and extant life?). Mars Extant Life Conference, Carlsbad, NM, November 2019.
128. Fraeman, A.A, R.E. Arvidson, L. Edgar, C.M. Fedo, W. W. Fischer, B. Horgan, J. L'Haridon, J.P. Grotzinger, S. Gupta, N.L. Lanza, R. Milliken, R.V. Morris, M. Salvatore, K. Siebach, K.M. Stack, L. Thompson, V. Sun, R.C. Wiens, **A.J. Williams**. The Origin of Vera Rubin Ridge: Oxidative Weathering on Mars? Goldschmidt Conference, Barcelona, Spain, August 2019.
129. Freissinet, C., D. P. Glavin, A. Buch, C. Szopa, S. Teinturier, P. D. Archer, **A.J. Williams**, R. Williams, M. Millan, A. Steele, R. Navarro-Gonzalez, C. H. House, C. A. Malespin, P. Mahaffy. Detection of Long-Chain Hydrocarbons on Mars with the Sample Analysis at Mars (SAM) Instrument. Ninth International Conference on Mars, Pasadena, CA, July 2019.
130. McAdam, A.C., B. Sutter, P.D. Archer, H.B. Franz, J.L. Eigenbrode, J.C. Stern, C.A. Knudson, J.M.T. Lewis, G.M. Wong, S. Andrejkovičová, J.V. Hogancamp, C.N. Achilles, D.W. Ming, R.V. Morris, T.F. Bristow, E.B. Rampe, R. Navarro-Gonzalez, S. S. Johnson, **A.J. Williams**, P.R. Mahaffy. Constraints on the Chemistry and Mineralogy of the Clay-Bearing Unit from Sample Analysis at Mars Evolved Gas Analyses. Ninth International Conference on Mars, Pasadena, CA, July 2019.
131. Millan, M., C.A. Malespin, C. Freissinet, D.P. Glavin, P.R. Mahaffy, A. Buch, C. Szopa, A. Srivastava, S. Teinturier, **A.J. Williams**, A. McAdam, D. Coscia, J. Eigenbrode, E. Raaen, J. Dworkin, R. Navarro-Gonzalez, S.S. Johnson. Lessons Learned From the Full Cup Wet Chemistry Experiment Performed On Mars with the Sample Analysis at Mars Instrument. Ninth International Conference on Mars, Pasadena, CA, July 2019.
132. Skok, J.R., J. Gaskin, J. Edmunson, K. Zacny, J. Blank, **A.J. Williams**, K. Cannon, M. Parente, J. Farmer, S. Karunatillake. SPRING Mission: Exploring the Past and Enabling the Future of Mars. Ninth International Conference on Mars, Pasadena, CA, July 2019.
133. Floyd, M.M., **A.J. Williams**, A. Grubisic, D. Emerson. Metabolic processes preserved as biosignatures in iron-oxidizing microorganisms: implications for biosignature detection on Mars. [Invited Talk] Society for Industrial Microbiology and Biotechnology Annual Meeting, Washington, D.C., July 2019.
134. **Williams, A.J.**, C. Muñoz, K. Craft, M. Millan, S. S. Johnson. Martian Hot Spring Deposits as a Depot for Biosignatures (And Extant Life?). Astrobiology Science Conference, Bellevue, WA, June 2019.
135. Williams, R.H., **A.J. Williams**, A. Buch, C. Freissinet, P.R. Mahaffy. Optimization of Pyrolysis and Trapping Parameters Relevant to the Sample Analysis at Mars Wet Chemistry Experiments. Astrobiology Science Conference, Bellevue, WA, June 2019.
136. Floyd, M.M., **A.J. Williams**, A. Grubisic, D. Emerson. Metabolic Processes Preserved as Biosignatures in Iron-Oxidizing Microorganisms: Implications for Biosignature Detection on Mars. Astrobiology Science Conference, Bellevue, WA, June 2019.

137. He, Y.Y., A. Buch, M. Morisson, **A.J. Williams**, C. Szopa, J.L. Eigenbrode, D.P. Glavin, C. Freissinet, M. Millan, S. Johnson, N. Grand, W. Goetz, F. Stalport, R. Navarro-Gonzalez, W. B. Brinckerhoff, F. Goesmann, F. Raulin, P.R. Mahaffy. Optimization of the *in situ* detection of nucleobases on the MOMA and SAM experiments. Astrobiology Science Conference, Bellevue, WA, June 2019.
138. Rogers, M.*, **A.J. Williams**, K. Marks*. Characterization and Modeling for Remediation of an Acid Mine Drainage System in Centralia, Pennsylvania. Chesapeake Potomac Regional Chapter of the Society of Environmental Toxicology and Chemistry, April 2019.
139. Leonzo, K.*, Pearson, T.*, Van Ness, T.*, Cotter, T., Capparuccini, D.*, **Williams, A.J.** The Glen Stream: A Case Study in Urbanized On-Campus Streams. Towson University Environmental Conference. April 2019.
140. **Williams, A.J.**, J.L. Eigenbrode, S.S. Johnson, K.L. Craft, M.B. Wilhelm, S.S. O'Reilly, J.M.T. Lewis, R. Williams, A. McAdam, C.A. Knudson, M. Millan, A. Buch, C. Freissinet, D. Glavin, R.E. Summons, K.C. Benison, C. Szopa, R. Navarro-González, V. Fox, C. Malespin, P. Mahaffy. Preparation for the SAM TMAH Wet Chemistry Experiment Onboard Curiosity: Organics Detection in Mars-Analog Rocks and Candidate Locations for the *In Situ* Experiment on Mars. Lunar and Planetary Science Conference, The Woodlands, TX, March 2019.
141. Millan, M., C. A. Malespin, C. Freissinet, D. P. Glavin, P. R. Mahaffy, A. Buch, C. Szopa, A. Srivastava, S. Teinturier, R. Williams, **A.J. Williams**, A. McAdam, D. Coscia, J. Eigenbrode, E. Raaen, J. Dworkin, R. Navarro-Gonzalez, S. S. Johnson. Lessons Learned From the First Full Cup Wet Chemistry Experiment Performed On Mars with the Sample Analysis at Mars Instrument. Lunar and Planetary Science Conference, The Woodlands, TX, March 2019.
142. Hood, D.R., S. Karunatillake, O. Gasnault, **A.J. Williams**, B. Dutrow, L. Ojha, S. Kobs, K. Kim, J. L. Heldmann, C. Fralick. Contrasting Regional Soil Hydration Processes across the Topographic Dichotomy of Mars. Lunar and Planetary Science Conference, The Woodlands, TX, March 2019.
143. Fox, V.K., K. A. Bennett, T. Bristow, B. Ehlmann, C. House, A. G. Fairén, B. Horgan, S. Johnson, M. Salvatore, K. Stack, R.C. Wiens, **A.J. Williams**, and the MSL Science Team. Exploring the Clay-Bearing Unit with the Curiosity Rover. Lunar and Planetary Science Conference, The Woodlands, TX, March 2019.

2018

144. **Williams, A.J.**, J.L. Eigenbrode, R.H. Williams, M. Millan, S.S. Johnson, K.L. Craft, M.B. Wilhelm, C. Szopa, A. Buch, S.S. O'Reilly, C.A. Knudson, J.M.T. Lewis, K.C. Benison, C. Malespin, P. Mahaffy. Resolution of Fatty Acids in Mars-Analog Samples with the SAM Instrument TMAH Wet Chemistry Experiment. AGU Fall Meeting, Washington, D.C., December 2018.
145. Marlow, J.G.*, **A.J. Williams**, Craft, K., 2018. Microtexture Characterization in Hydrothermal Sinter Cores from Alaska. AGU Fall Meeting, Washington, D.C., December 2018.
146. Johnson, S.S, E. Zaikova, M. Millan, N. Wagner, K. Craft, **A.J. Williams**, J. Bevilacqua, S. Kobs Nawotniak, A. Shields, Y. Bai, S. Fuqua, A. McAdam, S. S. Hughes, W. B. Garry, J. L. Heldmann, D. S. S. Lim, 2018. Biosignatures in Lava Tubes: The Blue Dragon Flow as an Analog for the Martian Subsurface. AGU Fall Meeting, Washington, D.C., December 2018.
147. Leonzo, K.*, **A.J. Williams**, T. Pearson*, T. VanNess*, D. Capparuccini*, 2018. An On-Campus Case Study in Urbanized Streams: The Historic Glen Stream, Towson, MD. AGU Fall Meeting, Washington, D.C., December 2018.
148. Bennett, K. A., V. K. Fox, A. R. Vasavada, J. Grotzinger, K. Stack, **A.J. Williams**, E. Dehouck, C. Edwards, M. Salvatore, and the MSL science team, 2018. Investigating the Clay-Bearing Unit in Gale Crater with the Curiosity Rover. AGU Fall Meeting, Washington, D.C., December 2018.

149. O'Neal, E.W.*, **Williams, A.J.**, 2018. Detection of Physical Biosignatures in Drill Fines via SEM for Future Planetary Missions. AGU Fall Meeting, Washington, D.C., December 2018.
150. Cook, C.L.*, **Williams, A.J.**, K. P. Reber, K. E. Kautzman, M. M. Floyd, 2018. Spectral Characterization of Pterin Molecules: Implications for Detecting Life on Mars. AGU Fall Meeting, Washington, D.C., December 2018.
151. Skok, J.R., J.D. Farmer, M. Juarez Rivera, S. Karunatilake, **Williams, A.J.**, and SSLNP Team, 2018. Seeking Signs of Life in Ancient Martian Hot Springs. AGU Fall Meeting, Washington, D.C., December 2018.
152. Buch, A., Szopa, C., Freissinet, C., Millan, M., **Williams, A.J.**, Williams, R., Glavin, D., Guzman, M., Eigenbrode, J., Malespin, C., Cabane, M., Coscia, D., Bonnet, J.-Y., Teinturier, S., Johnson, S., Navarro-Gonzalez, R., Mahaffy, P. Systematic study of impact of Perchlorate on the derivatization reagents (TMAH and MTBSTFA) onboard SAM. AGU Fall Meeting, Washington, D.C., December 2018.
153. Sun, V. Z., K. M. Stack, L. C. Kah, **Williams, A.J.**, L. Thompson, S. VanBommel, R. C. Wiens, S. S. Johnson, C. H. House, M. Nachon, W. Fischer, R. E. Kronyak, M. E. Minitti, D. Sumner, Diagenetic Concretions in the Murray Formation, Gale Crater, Mars. AGU Fall Meeting, Washington, D.C., December 2018.
154. Millan, M., **Williams, A.J.**, A. Buch, A. Bai, C. Freissinet, C. Szopa, J. L. Eigenbrode, D. P. Glavin, R. Navarro-González, P. Mahaffy, S. S. Johnson, Preservation of Organic Molecules In Mars Analog Samples: Insights From Sam-Like Pyrolysis And Derivatization GCMS Experiments. AGU Fall Meeting, Washington, D.C., December 2018.
155. Meert, J.G., Stofer, K., Matyas, C., Lannon, H., **Williams, A.J.**, Miller, S.R., Geobackgrounds: A brief survey of exposure and knowledge of geology among introductory level geology students in Florida. Geological Society of America Fall 2018 Meeting. Indianapolis, IN, November 2018.
156. Edmunson, J., J.A. Gaskin, and the MVP-SEM Instrument Development and Science Teams (including **A.J. Williams**), A Miniaturized Variable Pressure Scanning Electron Microscope (MVP-SEM) for Mars, COSPAR, Pasadena, CA, July 2018.
157. Marlow, J.*, **Williams, A.J.**, 2018, Microtexture characterization in hydrothermal sinter cores from Alaska. [Abstract] Towson University Undergraduate Research and Creative Inquiry Forum. April 2018.
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