Kathryn M. Stack Morgan

Curriculum Vitae
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EDUCATION

Ph.D., 2015, California Institute of Technology, Division of Geological and Planetary Sciences, Geology (advisor, J. Grotzinger)
M.Sc. 2011, California Institute of Technology, Division of Geological and Planetary Sciences, Geology (advisor, J. Grotzinger)
B.A. cum laude, 2008, Williams College (advisor: R.A. Wobus)
Majors: Geosciences (with honors), Astronomy

Additional Training:
2022 Practicing Allyship: A Culture of Inclusion
2021 JPL Mid-Level Leaders Workshop
2019 Hollaback Bystander Intervention Training
2019 JPL Technical Women's Leadership Journey Program
2019 JPL Ascend Leadership Program
2017 JPL Innovation Foundry Scientist Mission Interface Workshop 3
2012 GSA/ExxonMobil Big Horn Basin Field Course, Cody, WY
2010 Agouron Institute Advanced Geobiology Field Course, Southern Spain
2010 Caltech Carbonate Sedimentology Short Course
2008 University of Houston-Yellowstone Bighorn Research Association Geology Field Camp, Red Lodge, MT

PROFESSIONAL EXPERIENCE

2017-present Deputy Project Scientist, Mars 2020 Rover Mission
2016-present Participating Scientist, Mars Science Laboratory
2014-present Research Scientist, Jet Propulsion Laboratory, California Institute of Technology, Geophysics and Planetary Geosciences Group
2012-2015 Collaborator, Science Office, Mars Science Laboratory

AWARDS AND HONORS

2022 JPL Planetary Science Section Voyager Award
2022 NASA Early Career Public Achievement Medal
2021 Mars 2020 Project Voyager Award

2021 The JPL Edward Stone Award for Outstanding Research Publication
2020 Mars 2020 Project Voyager Award
2019 Mars 2020 Project Voyager Award
2018 NASA Software of the Year Award, JPL OnSight Team Collaborator
2018 Mars Exploration Directorate Mars 2020 Voyager Award
2017 NASA Group Achievement Award, MSL Extended Mission-1 Science and Operations Team
2016 Mars Exploration Directorate Team Award
2015 NASA Group Achievement Award, MSL Prime Mission Science and Operations Team
2015 Mars Science Laboratory JPL Voyager Award
2013 Forbes 30 Under 30 in Science and Healthcare
2013 NASA Group Achievement Award, MSL Science Office Development and Operations Team
2012 Caltech Division of Geological and Planetary Sciences Jahns Teaching Prize
2012 GSA/ExxonMobil Bighorn Basin Field Award
2008 Mineralogical Society of America's American Mineralogist Undergraduate Award
2008 Williams College Freeman Foote Prize in Geology

GRANTS AND FELLOWSHIPS

2022-2025 **PI**, NASA ROSES 2021 MDAP, "A Global Map of Serpentine on Mars"
2021-2024 **Co-I (JPL Lead)**, NASA ROSES 2020 Planetary Science and Technology from Analog Research, "RAVEN-Rover-Aerial Vehicle Exploration Network" (PI: Christopher Hamilton, ASU)
2020-2022 **PI**, Strategic University Research Partnership, JPL, "Aeolian processes on Mars: hypothesis testing with experiments and remote sensing"
2019-2021 **PI**, NASA ROSES 2018 Planetary Data Archiving, Restoration, and Tools, "Preparing a USGS Geologic Map of the Northeast Syrtis and Jezero Regions" (Science PI: Vivian Sun, JPL)
2018-2021 **PI**, NASA ROSES 2017 Mars Data Analysis Program, "Assessing the Formation Environments of Hydrated Silica on Mars" (Science PI: Vivian Sun, JPL)
2016-2021 **PI**, NASA ROSES 2015 MSL Participating Scientist Program, "Orbital and In Situ Stratigraphic Analysis of Lower Mount Sharp, Gale Crater"
2018-2020 **Co-I**, Strategic Initiative Proposal for the Research and Technology Development Fund, JPL, "MAARS: Machine learning-based Analytics for Autonomous Rover Systems" (PI: Hiro Ono)
2017-2019 **Co-I**, NASA ROSES 2016 Mars Data Analysis Program, "Understanding the Geologic Setting and Depositional Environments of Sedimentary Iron Oxide Deposits On Mars" (PI: Abigail Fraeman, JPL)
2017-2019 **Co-I**, NASA Innovative Advanced Concepts (NIAC) II, "Automaton Rover for Extreme Environments" (PI: Jonathan Sauder, JPL)
2015-2018 **PI**, Strategic Initiative Proposal for the Research and Technology Development Fund, JPL, "Correlating Ancient Sedimentary Environments in the Rock Record of Early Mars"
2011 ExxonMobil Geoscience Grant

2010 Mars Exploration Program Student Travel Grant
2007 NSF-REU Keck Geology Consortium Fellowship
2006 NSF-REU Keck Northeast Astronomy Consortium Fellowship

PEER REVIEWED PUBLICATIONS
(underlined = student or post-doc under direct supervision of K. Stack Morgan)

In Review or Submitted

71. HORGAN, B. et al. "Mineralogy, morphology, and emplacement history of the Maaz formation on the Jezero crater floor from orbital and rover observations," submitted to *J. Geophys. Res.-Planets.*
70. SUN, V. et al. "Overview and Results from the Mars 2020 Perseverance Rover's First Science Campaign on the Jezero Crater Floor," submitted to *J. Geophys. Res.-Planets.*
69. SIMON, J. et al. "Samples Collected from the Floor of Jezero Crater with the Mars 2020 Perseverance Rover," submitted to *J. Geophys. Res.-Planets.*
68. CRUMPLER, L. et al. "In Situ Geologic Context Mapping Transect on the Floor of Jezero Crater from Mars 2020 Perseverance Rover Observations," submitted to *J. Geophys. Res.-Planets.*
67. SHARMA, S. et al. "Mapping organic-mineral associations in Jezero crater: Implications for Martian Organic Geochemistry," submitted to *Nature*.
66. YINGST, R.A. et al. "Depositional and Diagenetic Processes of Martian Lacustrine Sediments as Revealed at Pahrump Hills by the Mars Hand Lens Imager, Gale Crater, Mars," submitted to *J. Geophys. Res.-Planets.*
65. SCHELLER, E.L., et al., "Aqueous alteration processes and implications for organic geochemistry in Jezero crater, Mars," in review at *Science.*
64. KHAN, S.Y. et al., "Characterization of clasts in the Glen Torridon region of Gale crater observed by the Mars Science Laboratory Curiosity Rover," in revision at *J. Geophys. Res.-Planets.*

Accepted and Published

63. **STACK, K.M.**, W.E. Dietrich, M.P. Lamb, R.J. Sullivan, J.R. Christian, C.E. Newman, C.D. O'Connell-Cooper, J.W. Sneed, M. Day, M. Baker, R.E. Arvidson, C.M. Fedo, S. Khan, R.M.E. Williams, K.A. Bennett, A.B. Bryk, S. Cofield, L.A. Edgar, V.K. Fox, A.A. Fraeman, C.H. House, D.M. Rubin, V.Z. Sun, J.K. Van Beek (2022), Orbital and In-Situ Investigation of Periodic Bedrock Ridges in Glen Torridon, Gale Crater, Mars, *J. Geophys. Res.-Planets*, https://doi.org/10.1029/2021JE007096.
62. **STACK, K.M.** et al. (2020), Photogeologic Map of the Perseverance Rover Field Site in Jezero Crater Constructed by the Mars 2020 Science Team, *Space Science Reviews*, https://doi.org10.1007/s11214-020-00739-x.
61. **STACK, K.M.**, J.P. Grotzinger, M.P. Lamb, S. Gupta, D.M. Rubin, L.C. Kah, L.A. Edgar, D.M. Fey, J.A. Hurowitz, M. McBride, F. Rivera-Hernandez, D.Y. Sumner, J.K. Van Beek, R.M.E. Williams, R. Aileen Yingst (2019), "Evidence for plunging river plume deposits in the Pahrump Hills member of the Murray formation, Gale crater, Mars," *Sedimentology*, https://doi.org/10.1111/sed.12558.

60. **STACK, K.M.**, C.S. Edwards, J.P. Grotzinger, S. Gupta, D.Y. Sumner, F.J. Calef, III, L.A. Edgar, K.S. Edgett, A.A. Fraeman, S.R. Jacob, L.L. Le Deit, K.W. Lewis, M.S. Rice, D. Rubin, R.M.E. Williams, K.H. Williford (2016), Comparing orbiter and rover image-based mapping of an ancient sedimentary environment, Aeolis Palus, Gale crater, Mars, *Icarus, Special Issue: MicroMars to MegaMars,* https://doi.org.10.1016/j.icarus.2016.02.024.
59. **STACK, K.M.** and R.E. Milliken (2015), Reflectance spectroscopy of clay-sulfate Mixtures and implications for quantifying hydrated minerals on Mars, *Icarus*, https://doi.org/10.1016/j.icarus.2014.12.009.
58. **STACK, K.M.**, J.P. Grotzinger, L.C. Kah, M.E. Schmidt, N. Mangold, K.S. Edgett, D.Y. Sumner, K.L. Siebach, M. Nachon, R. Lee, D.L. Blaney, L.P. Deflores, L.A. Edgar, A.G. Fairen, L.A. Leshin, S. Maurice, D.Z. Oehler, M.S. Rice, R.C. Wiens (2014), Diagenetic origin of nodules in the Sheepbed member, Yellowknife Bay formation, Gale Crater, Mars, *J. Geophys. Res*., https://doi.org10.1002/2014JE004617.
57. **STACK, K.M.**, J.P. Grotzinger, R.E. Milliken (2013), Bed Thickness Distributions on Mars: An Orbital Perspective, *J. Geophys. Res.*, https://doi.org/10.1002/jgre.20092.
56. FEDO, C.M. A.B. Bryk, L.A. Edgar, K.A. Bennett, V.K. Fox, W.E. Dietrich, S.G. Banham, S. Gupta, **K.M. Stack**, R.M.E. Williams, J.P. Grotzinger, N.T. Stein, D.M. Rubin, G. Caravaca, R.E. Arvidson, M.N. Hughes, A.A. Fraeman, A.R. Vasavada, J. Schieber, B. Sutter (2022), Geology and stratigraphic correlation of the Murray and Carolyn Shoemaker formations across the Glen Torridon region, Gale crater, Mars, *J. Geophys. Res.-Planets,* https://doi.org/10.1029/2022JE007408.
55. FARLEY, K.A., **K.M. Stack**, D.L. Shuster, B.H.N. Horgan, J.A. Hurowitz, J.D. Tarnas, J.I. Simon, V.Z. Sun, E.L. Scheller, K.R. Moore, S.M. McLennan, P.M. Vasconcelos, R.C. Wiens, A.H. Treiman, L.E. Mayhew, O. Beyssac, T.V. Kizovski, N.J. Tosca, K.H. Williford, L.S. Crumpler, L.W. Beegle, J.F Bell III, B.L. Ehlmann, Y. Liu, J.N. Maki, M.E. Schmidt, A.C. Allwood, H.E.F. Amundsen, R. Bhartia, T. Bosak, A.J. Brown, B.C. Clark, A. Cousin, O. Forni, T.S.J. Gabriel, Y. Goreva, S. Gupta, S.-E. Hamran, C.D.K. Herd, K. Hickman-Lewis, J.R. Johnson, L.C. Kah, P.B. Kelemen, K.B. Kinch, L. Mandon, N. Mangold, C. Quatin-Nataf, M.S. Rice, P.S. Russell, S. Sharma, S. Siljestrom, A. Steele, R. Sullivan, M. Wadhwa, B.P. Weiss, A.J. Williams, B.V. Wogsland, P.A. Willis, T.A. Acosta-Maeda, P. Beck, K. Benzerara, S. Bernard, A.S. Burton, E.L. Cardarelli, B. Chide, E. Clavé, E.A. Cloutis, B.A. Cohen, A.D. Czaja, V. Debaille, E. Dehouck, A.G. Fairén, D.T. Flannery, S.Z. Fleron, T. Fouchet, J. Frydenvang, B.J. Garczynski, E.F. Gibbons, E.M. Hausrath, A.G. Hayes, J. Henneke, J.L. Jorgensen, E.M. Kelly, J. Lasue, S. Le Mouélic, J.M. Madariaga, S. Maurice, M. Merusi, P.-Y. Meslin, S.M. Milkovich, C.C. Million, R.C. Moeller, J.I. Nunez, A.M. Ollila, G. Paar, D.A. Paige, D.A.K. Pedersen, P. Pilleri, C. Pilorget, P.C. Pinet, J.W. Rice Jr., C. Royer, V. Sautter, M. Schulte, M.A. Sephton, S.K. Sharma, S.F. Sholes, N. Spanovich, M. St Clair, C.D. Tate, K. Uckert, S.J. VanBommel, A.G. Yanchilina, M.-P. Zorzano (2022), Aqueously altered igneous rocks on the floor of Jezero crater, Mars, *Science,* https://doi.org/10.1126/science.abo2196.
54. LIU, Y., M.M. Tice, M.E. Schmidt, A.H. Treiman, T.V. Kizovski, J.A. Hurowitz, A.C. Allwood, J. Henneke, D.A.K. Pedersen, S.J. VanBommel, M.W.M. Jones, A.L. Knight, B.J. Orenstein, B.C. Clark, W.T. Elam, C.M. Heirwegh, T. Barber, L.W. Beegle, K. Benzerara, S. Bernard, O. Beyssac, T. Bosak, A.J. Brown, E.L. Cardarelli, D.C. Catling, J.R. Christian, E.A. Cloutis, B.A. Cohen, S. Davidoff, A.G. Fairén, K.A. Farley, D.T. Flannery, A. Galvin, J.P. Grozinger, S. Gupta, J. Hall, C.D.K. Herd, K. Hickman-Lewis, R.P. Hodyss, B.H.N.

Horgan, J.R. Johnson, J.L. Jorgensen, L.C. Kah, J.N. Maki, L. Mandon, N. Mangold, F.M. McCubbin, S.M. Mclennan, K. Moore, M. Nachon, P. Nemere, L.D. Northdurft, J.I. Nunez, L. O'Neil, C.M. Quantin-Nataf, V. Sautter, D.L. Shuster, K.L. Siebach, J.I. Simon, K.P. Sinclair, **K.M. Stack**, A. Steele, J.D. Tarnas, N.J. Tosca, K. Uckert, A. Udry, L.A. Wade, B.P. Weiss, R.C. Wiens, K.H. Williford, M.-P. Zorzano (2022), An olivine cumulate outcrop on the floor of Jezero crater, Mars, *Science*, https://doi.org/10.1126/science.abo2756.

53. GWIZD, S., C. Fedo, J. Grotzinger, S. Banham, F. Rivera-Hernández, **K.M. Stack**, K. Siebach, M. Thorpe, L. Thompson, C. O'Connell-Cooper, N. Stein, L. Edgar, S. Gupta, D. Rubin, D. Sumner, A.R. Vasavada (2022), Sedimentological and geochemical perspectives on a marginal lake environment recorded in the Hartmann's Valley and Karasburg members of the Murray formation, Gale crater, Mars, *J. Geophys. Res.-Planets*, https://doi.org/10.1029/2022JE007280.
52. WIENS, R.C., et al. (2022), Compositionally and Density Stratified Igneous Terrain in Jezero Crater, Mars, *Science Advances,* https://10.1126/sciadv.abo3399.
51. BENNETT, K., V.K. Fox, A. Bryk, W. Dietrich, C. Fedo, L. Edgar, M.T. Thorpe, A.J. Williams, G.M. Wong, E. Dehouck, A. McAdam, B. Sutter, M. Millan, S.G. Banham, C.C. Bedford, T. Bristow, A. Fraeman, A.R. Vasavada, J. Grotzinger, L. Thompson, C. O'Connell-Cooper, P. Gasda, A. Rudolph, R. Sullivan, R. Arvidson, A. Cousin, B. Horgan, **K.M. Stack**, A. Treiman, J. Eigenbrode, G. Caravaca (2022), The Curiosity Rover's Exploration of Glen Torridon, Gale crater, Mars: An Overview of the Campaign and Scientific Results, *J. Geophys. Res.-Planets*, https://doi.org/10.1029/2022JE007185.
50. WATKINS, J., J.P. Grotzinger, N.T. Stein, S.G. Banham, S. Gupta, D.M. Rubin, **K. Stack Morgan**, K.S. Edgett, J. Frydenvang, K.L. Siebach, M.P. Lamb, D.Y. Sumner, K.W. Lewis (2022), Burial and exhumation of sedimentary rocks revealed by the base Stimson erosional unconformity, Gale crater, Mars, *J. Geophys. Res.-Planets*., https://doi.org/10.1029/2022JE007293.
49. MAURICE, S., B. Chide, N. Murdoch, R. D. Lorenz, D. Mimoun, R. C. Wiens, A. Stott, X. Jacob, T. Bertrand, F. Montmessin, N. L. Lanza, C. Alvarez-Llamas, S. M. Angel, M. Aung, J. Balaram, O. Beyssac, A. Cousin, G. Delory, O. Forni, T. Fouchet, O. Gasnault, H. Grip, M. Hecht, J. Hoffman, J. Laserna, J. Lasue, J. Maki, J. McClean, P.-Y. Meslin, S. Le Mouélic, A. Munguira, C. E. Newman, J. A. Rodríguez Manfredi, J. Moros, A. Ollila, P. Pilleri, S. Schröder, M. de la Torre Juárez, T. Tzanetos, **K. M. Stack**, K. Farley, K. Williford, and the SuperCam team (2022), In Situ Recordings of Mars Soundscape, *Nature*, https://doi.org10.1038/s41586-022-04679-0.
48. D.M. RUBIN, M.A.G. Lapotre, A.W. Stevens, M.P. Lamb, C.M. Fedo, J.P. Grotzinger, S. Gupta, **K.M. Stack**, A.R. Vasavada, S.G. Banham, A.B. Bryk, G. Caravaca, J.R. Christian, L.A. Edgar, M.C. Malin (2022), Ancient Winds, Waves, and Atmosphere in Gale Crater, Mars, Inferred from Sedimentary Structures and Wave Modeling, *J. Geophys. Res.-Planets,* https://doi.org/10.1029/2021JE007162.
47. TARNAS, J., **K. Stack Morgan**, M. Parente, J. Mustard, A. Koeppel, K. Moore, B. Horgan, F. Seelos, E. Cloutis, P.B. Kelemen, D. Flannery, A.J. Brown, K. Frizzell, P.C. Pinet (2021), Characteristics, origins, and biosignature preservation potential of carbonate-bearing rocks within and outside of Jezero crater, *J. Geophys. Res.-Planets,* https://doi.org10.1002/essoar.10506705.1.
46. MANGOLD, N., S. Gupta, 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. Nunez, A.M. Olilla, 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 (2021), Evidence of a delta-lake system and ancient flood deposits at Jezero crater, Mars from the Perseverance rover, *Science*, https://doi.org/10.1126/science.abl4051.

45. ALWMARK-HOLM, S., K.M. Kinch, M.D. Hansen, S. Shahrzad, K. Svennevig, W.J. Abbey, R.B. Anderson, F.J. Calef III, E. Hauber, B.H.N. Horgan, L.C. Kah, J. Knade, N.B. Miklusicak, **K.M. Stack**, V.Z. Sun, J.D. Tarnas, C. Quantin-Nataf (2021), Stratigraphic Relationships in Jezero Crater, Mars: Constraints on the Timing of Fluvial-Lacustrine Activity from Orbital Observations, *J. Geophys. Res.*, https://doi.org/10.1029/2021/JE006840.
44. BANHAM, S.G., S. Gupta, D.M. Rubin, K.S. Edgett, J. Van Beek, J.A. Watkins, M. Day, L.A. Edgar, C. Fedo, R.M. Williams, **K.M. Stack**, A.R. Vasavada (2021), A Rock Record of Complex Aeolian Bedforms in a Hesperian Desert Landscape: the Stimson Formation as Exposed in the Murray Buttes, Gale Crater, Mars, *JGR-Planets*, https://doi.org/10.1029/2020JE006554.
43. RABINOVITCH, J. and **K.M. Stack** (2021), Characterizing landing site safety on Venus using Venera panoramas and Magellan radar properties, *Icarus*, https://doi.org/10.1016/j.icarus.2021.114429.
42. FARLEY, K.A. K.H. Williford, **K.M. Stack**, R. Bhartia, A. Chen, M. de la Torre, K. Hand, Y. Goreva, C.D.K. Herd, R. Hueso, Y. Liu, J.N. Maki, G. Martinez, R.C. Moeller, A. Nelessen, C.E. Newman, D. Nunes, A. Ponce, N. Spanovich, P.A. Willis, L.W. Beegle, J.F. Bell III, A.J. Brown, S.-E. Hamran, J.A. Hurowitz, S. Maurice, D.A. Paige, J.A. Rodriguez-Manfredi, M. Schulte, R.C. Wiens (2020), Mars 2020 Mission Overview, *Space Science Reviews,* https://doi.org/10.1007/s11214-020-00762-y.
41. MARTIN, P.E., K.A. Farley, C.A. Malespin, P.R. Mahaffy, K.S. Edgett, S. Gupta, W.E. Dietrich, M.C. Malin, **K.M. Stack**, P.M. Vasconcelos (2020), Billion-year exposure ages in Gale crater (Mars) indicate Mount Sharp formed before the Amazonian Period, *Earth and Planetary Science Letters*, https://doi.org/10.1016/j.epsl.2020.116667.
40. SUN, V.Z. and **K.M. Stack** (2020), Geologic Map of Jezero Crater and the Nili Planum Region, Mars, USGS Scientific Investigations Map 3464, pamphlet 14 p., 1 sheet, scale 1:75,000, https://doi.org/10.3133/sim3464.
39. FRAEMAN, A.A., L.A. Edgar, E.B. Rampe, L.M. Thompson, J. Frydenvang, C.M. Fedo, J.G. Catalano, W.E. Dietrich, T.S.J. Gabriel, A.R. Vasavada, J.P. Grotzinger, J. L'Haridon, N. Mangold, V.Z. Sun, C.H. House, A.B. Bryk, C. Hardgrove, S. Czarnecki, **K.M. Stack**, R.V. Morris, R.E. Arvidson, S.G. Banham, K.A. Bennett, J.C. Bridges, C.S. Edwards, W.W. Fischer, V.K. Fox, S. Gupta, B.H.N. Horgan, S.R. Jacob, J.R. Johnson, S.S. Johnson, D.M. Rubin, M.R. Salvatore, S.P. Schwenzer, K.L. Siebach, N.T. Stein, S. Turner, D.F. Wellington, R.C. Wiens, A.J. Williams, G. David, G.M. Wong (2020), Evidence for a Diagenetic Origin of Vera Rubin Ridge, Gale Crater, Mars: Summary and Synthesis of Curiosity's Exploration Campaign, *JGR.-Planets*, https://doi.org/10.1029/2020JE006527.
38. WIENS, R.C., K.S. Edgett, **K.M. Stack**, W.E. Dietrich, A.B. Bryck, N. Mangold, C. Bedford, P. Gasda, A. Fairen, L. Thompson, J. Johnson, O. Gasnault, S. Clegg, A. Cousin, O. Forni, J. Frydenvang, N. Lanza, S. Maurice, H. Newsom, A. Ollila, V. Payre, F. Rivera-Hernandez, A. Vasavada (2020), Origin and Composition of Three Heterolithic Boulder- and

Cobble-Bearing Deposits Overlying the Murray and Stimson Formations, Gale Crater, Mars *Icarus*, https://doi.org/10.1016/j.icarus.2020.113897.

37. MANGOLD, N., G. Dromart, V. Ansan, F. Salese, G. D'Annunzio, M. Kleinhans, M. Masse, C. Quantin, **K. Stack** (2020), Fluvial Regimes, Morphometry and Age of Jezero Crater Paleolake Inlet Valleys and their Exobiological Significance for the 2020 Rover Mission Landing Site, *Astrobiology*, https://doi.org/10.1089/ast.2019.2132.
36. STEIN, N.T., D.P. Quinn, J.P. Grotzinger, C. Fedo, B.L. Ehlmann, **K.M. Stack**, L.A. Edgar, A.A. Fraeman, R. Deen (2020), Regional structural orientation of the Mt. Sharp group revealed by in-situ dip measurements and stratigraphic correlations on the Vera Rubin ridge, *JGR Planets*, https://doi.org/10.1029/2019JE006298.
35. EDGAR, L.A. C.M. Fedo, S. Gupta, S.G. Banham, A.A. Fraeman, J.P. Grotzinger, **K.M. Stack**, N.T. Stein, K.A. Bennett, F. Rivera-Hernandez, V.Z. Sun, K.S. Edgett, D.M. Rubin, C. House, J. Van Beek. (2020), A lacustrine paleoenvironment recorded at Vera Rubin ridge, Gale crater: Overview of the sedimentology and stratigraphy observed by the Mars Science Laboratory Curiosity rover, *JGR Planets,* https://doi.org/10.1029/2019JE006307.
34. RIVERA-HERNÁNDEZ, F., D.Y. Sumner, N. Mangold, S.G. Banham, K.S. Edgett, C.M. Fedo, S. Gupta, S. Gwizd, E. Heydari, S. Maurice, M. Nachon, H. Newsom, J. Schieber, **K. Stack-Morgan**, N. Stein, R.C. Wiens (2020), Grain Size Variations in the Murray Formation: Stratigraphic Evidence for Changing Depositional Environments in Gale Crater, Mars, *JGR Planets*, https://doi.org/10.1029/2019JE006230.
33. MINITTI, M.E., M.C. Malin, J.K. Van Beek, M. Caplinger, J.N. Maki, M. Ravine, F.J. Calef, L.A. Edgar, D. Harker, K.E. Herkenhoff, L.C. Kah, M.R. Kennedy, G.M. Krezoski, R.E. Kronyak, L. Lipkaman, B. Nixon, S.K. Rowland, J. Schieber, J.F. Schroeder, **K.M. Stack**, R.M.E. Williams, R.A. Yingst (2019), Distribution of primary and secondary features in the Pahrump Hills outcrop (Gale crater, Mars) as seen in a Mars Descent Imager (MARDI) "sidewalk" mosaic, *Icarus*, https://doi.org/10.1016/j.icarus.2019.03.005.
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FIRST-AUTHOR or STUDENT/POST-DOC CONFERENCE PRESENTATIONS
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2022

STACK, K.M., S. Gupta, G. Caravaca, M. Tebolt, M. Tice, D. Shuster, A. Williams, P. Russell, M. Minitti, K. Farley, "Exploration of the Lower Delta Front Succession in Jezero Crater by the Mars 2020 Perseverance Rover," accepted for oral presentation at GSA Connects 2022

BRETZFELDER, J. A.A. Fraeman, K.M. Stack, M.D. Day, "Ridged Bedrock Terrain in Gale Crater, Mars," accepted for oral presentation at GSA Connects 2022

STACK, K.M., "One Year in Jezero Crater with the Mars 2020 Perseverance Rover," AbSciCon, Atlanta, GA and Hybrid, May 15-20 (Plenary).

SHOLES, S.F., K.M. Stack, L.C. Kah, J.I. Simon, D.L. Shuster, N. Mangold, "Topographic Trends of the Geologic Units in Jezero Crater: Lake Levels, Potential Shorelines, and the Crater Floor Units," LPSC 2022, The Woodlands, TX and Hybrid, March 7-11 (Oral).

M. TEBOLT, T.A. Goudge, K.M. Stack, C.M. Fedo, S. Gwizd, F. Rivera-Hernandez, "Constraining the Paleoenvironment of the Darwin Outcrop in Gale Crater from Facies and Stratigraphic Mapping, " LPSC 2022, The Woodlands, TX and Hybrid, March 7-11 (Poster).

2021

STACK, K.M. and the Mars 2020 Science Team, "Geologic Mapping and the Search for Signs of Ancient Life in Jezero Crater with NASA's Perseverance Rover," The Geological Society of London William Smith Virtual Meeting, 2021, October 19-21 (Invited Keynote).

STACK, K.M., K.A. Farley, K.H. Williford and the Mars 2020 Team, "Early Results from the Mars 2020 Perseverance Rover in Jezero Crater, Mars," GSA Connects 2021, Portland, OR, October 10-13 (Oral).

SHOLES, S., K. Stack Morgan, L. Kah, J.I. Simon, "Bridging the Gap: Evaluating the Past Water Levels at Jezero Crater, Mars through Orbital and In Situ Data," GSA Connects 2021, Portland, OR, October 10-13 (Oral).

TARNAS, J., K.M. Stack, S. Gupta, L.C. Kah, D. Shuster, L. Mandon, C. Quantin, R. Wiens, "Stratigraphy of Séítah: Understanding the Oldest Geologic Unit Exposed in the Jezero Crater Floor," GSA Connects 2021, Portland, OR, October 10-13 (Oral).

KHAN, S.Y., K.M. Stack, R.A. Yingst, "Characterization of Clasts in the Glen Torridon Region Observed by the MSL Curiosity Rover," LPSC 52, The Woodlands, Texas, March 15-19, Abstract #2649 (Oral).

KHAN, S.Y., K.M. Stack, "Geochemistry and Stratigraphic Classification of Sandstones Observed by the MSL Curiosity Rover," LPSC 52, The Woodlands, Texas, March 15-19, Abstract #2630 (Poster).

TARNAS, J.D, M. Parente, K.M. Stack, J.F. Mustard, A.H.D. Koeppel, K.H. Williford, F.P Seelos, E.A. Cloutis, P.B. Keleman, R.E Arvidson, D. Flannery, K.R. Moore, A.J. Brown, K.R. Frizzell "Origin of Carbonate-Bearing rocks in Jezero Crater," LPSC 52, The Woodlands, Texas, March 15-19, Abstract #2251 (Oral).

2020

STACK, K.M. and the Mars 2020 Science Team, "Geologic Map of the Perseverance Landing Site by the Mars 2020 Science Team," 2020 Annual Meeting of Planetary Geologic Mappers, July 23, LPI Contrib. No. 2357, https://www.youtube.com/watch?v=RJL-pta10t8.

STACK, K.M., A. Noblet, V. Sun, N. Mangold, "Relative Ages of Inverted Channel Deposits Within the Western Delta, Jezero Crater, Mars," LPSC 51, The Woodlands, Texas, March 16-20, Abstract #1817 (Poster).

SNEED, J.W. K.Stack, M. Day, A. Fraeman, "Large-scale HiRISE Survey Demonstrates a Genetic Relationship Between Martian Periodic Bedrock Ridges and Transverse Aeolian Ridges," AGU 2020, EP018-0009 (Poster).

KRONYAK, R., K.M. Stack, V.Z. Sun, A. Noblet, "Geomorphology and Relative Ages of Inverted Channel Deposits in Jezero Crater's Western Delta, GSA Abstracts with Program. 52(6), https://doi.10.1130/abs/2020AM-355828.

SNEED, J.W., M.D. Day, K.M. Stack, A.A. Fraeman, "Experimental Hypothesis Testing of the Origins of Periodic Bedrock Ridges," Sixth International Planetary Dunes Workshop, Abstract 3022, https://www.hou.usra.edu/meetings/dunes2020/eposter/3040.pdf.

2019

STACK, K.M. R.E. Arvidson, K.A. Bennett, A.B. Bryk, K.S. Edgett, C. Fedo, V.K. Fox, A. Fraeman, C.H. House, J. Rabinovitch, R.J. Sullivan, J. Van Beek, R.M.E. Williams, "In-situ investigation of periodic bedrock ridges in Glen Torridon area with the MSL Curiosity rover, Gale crater, Mars," AGU Fall Meeting, San Francisco, CA, December 9-13, Abstract P33B-02 (Talk).

STACK, K.M., K.A. Farley, K.H. Williford, and the Mars 2020 Team, "Mars 2020 in Jezero Crater: Seeking Signs of Life in an Ancient Martian Delta," IAS 2019, Rome, Italy, September 10-13, Invited Talk.

STACK, K.M., V.Z. Sun, R.E. Arvidson, C. Fedo, M. Day, K. Bennett, L.A. Edgar, V.K. Fox, S. Cofield, "Origin of linear ridges in the clay-bearing unit of Mount Sharp, Gale crater, Mars," LPSC 50, The Woodlands, Texas, March 18-22, Abstract #1210 (Talk).

2018

STACK, K.M., R.M.E. Williams, J.P. Grotzinger, D.M. Rubin, J. Frydenvang, C.H. Steeger, "Sandstones and conglomerates at the foothills of Mount Sharp: Gale crater, Mars: Facies analysis and stratigraphic implications," LPSC 49, The Woodlands, Texas, March 19-23, Abstract #1712 (Talk).

SUN, V.Z., K. Stack, L.C. Kah, A.J. Williams, L.M. Thompson, R.C. Wiens, S. VanBommel, S.S. Johnson, C.H. House, M. Nachon, W.W. Fischer, R.E. Kronyak, M.E. Minitti, K.L. Siebach, D.Y. Sumner," AGU 2018, Washington, D.C., Dec 10-14, Abstract #403274 (Talk).

SEEGER, C.H., K.M. Stack, J.P. Grotzinger, M.P. Lamb, R.M.E. Williams, "Conglomerates in Context: New Observations of Martian Fluvial Deposits in the Foothills of Mount Sharp, Gale Crater," GSA 2018, Indianapolis, Indiana, Nov 4-8, Paper No. 15-6 (Talk).

SUN, V.Z., K.M. Stack, M. Nachon, S.S. Johnson, R.E. Kronyak, R.C. Wiens, M.E. Minitti, L.C. Kah, "Late-stage diagenetic concretions in the lacustrine Murray formation, Gale crater, Mars" GSA Rocky Mountain/Cordilleran Joint Section Meeting, Flagstaff, AZ, May 15-17, Abstract #313603 (Talk).

SUN, V.Z. and K.M. Stack, "Geomorphic mapping of the basement unit within the Northeast Syrtis Mars 2020 Landing Ellipse," GSA Rocky Mountain/Cordilleran Joint Section Meeting, Flagstaff, AZ, May 15-17, Abstract #313607 (Poster).

SUN, V.Z., K.M. Stack, M. Nachon, S.S. Johnson, R.E. Kronyak, R.C. Wiens, M.E. Minitti, L.C. Kah, "Late-stage diagenesis in the Murray formation, Gale crater, Mars: Evidence from

diverse concretion morphologies," LPSC 49, The Woodlands, Texas, March 19-23, Abstract #1587 (Talk).

SUN, V.Z. and K.M. Stack, "Geomorphic mapping of the basement unit within the Northeast Syrtis Mars 2020 Landing Ellipse," LPSC 49, The Woodlands, Texas, March 19-23, Abstract #2179 (Poster).

COFIELD, S. and K.M. Stack, "Geologic mapping and stratigraphic analysis of a candidate Mars 2020 landing site: Jezero crater, Mars," LPSC 49, The Woodlands, Texas, March 19-23, Abstract #2179 (Poster).

2017

STACK, K.M., L.A. Edgar, K.S. Edgett, C.M. Fedo, J.P. Grotzinger, S. Gupta, C.H. House, J.A. Horowitz, L.C. Kah, E.B. Rampe, D.M. Rubin, J. Schieber, N.T. Stein, D.Y. Sumner, "The Murray Formation of Lower Mount Sharp, Gale Crater, Mars: A Record of an Ancient Evolving Lacustrine System Explored by the MSL Curiosity Rover," International Meeting of Sedimentology, October 10-12, Toulouse France (Invited Talk).

STACK, K.M., S.M. Cofield, A.A. Fraeman, "Geologic Map of the MSL Curiosity Rover Extended Mission Traverse of Aeolis Mons, Gale Crater, Mars," LPSC 48, The Woodlands, Texas, March 20-24, Abstract #1889 (Poster).

STACK, K.M., J. Rabinovitch, M.A. Bullock, "Characterization of Safe Landing Sites on Venus Using Venera Panoramas and Magellan Radar Properties," LPSC 48, The Woodlands, Texas, March 20-24, Abstract #1891 (Poster).

COFIELD S., K.M. Stack, A.A. Fraeman, "Geologic Mapping and Stratigraphic Analysis of the "Clay Trough" of Mount Sharp, Gale Crater, Mars," LPSC 48, The Woodlands, Texas, March 20-24, Abstract #2531 (Talk).

COFIELD S.M., K.M. Stack, "Geologic Mapping and Stratigraphic Analysis of a Candidate Mars 2020 Landing Site: Jezero Crater, Mars," GSA Annual Meeting, Seattle, Washington, October 22-25, Paper No. 319-8 (Talk).

2016

STACK, K.M., J.P. Grotzinger, K.S. Edgett, S. Gupta, L.C. Kah, M.P. Lamb, K.W. Lewis, D.M. Rubin, J. Schieber, D.Y. Sumner, "Facies analysis and stratigraphic context of the Pahrump Hills outcrop, type locality of the basal Murray formation, Gale crater, Mars," 2016 GSA Annual Meeting, Denver, Colorado, September 24-28, Paper #20-9 (Talk).

STACK, K.M., S.M. Cofield, A.A. Fraeman, C.S. Edwards, "Geologic map of the MSL Curiosity rover extended mission traverse of Aeolis Mons, Gale Crater Mars," 2016 GSA Annual Meeting, Denver, Colorado, September 24-28, Paper #80-6 (Poster).

2015

STACK, K.M. and J.P. Grotzinger, "Constraining the Timing and Duration of an Ancient Fluvio-Lacustrine System in Gale Crater Using MSL Curiosity Rover Observations," LPSC 46, The Woodlands, Texas, March 16-20, 2015, Abstract #2012 (Invited Talk).

STACK, K.M., J.P. Grotzinger, S. Gupta, L.C. Kah, K.W. Lewis, M.J. McBride, M.E. Minitti, D.M. Rubin, J. Schieber, D.Y. Sumner, L.M. Thompson, J. Van Beek, A.R. Vasavada, R.A. Yingst, "Sedimentology and Stratigraphy of the Pahrump Hills Outcrop, Lower Mount Sharp, Gale Crater, Mars," LPSC 46, The Woodlands, Texas, March 16-20, 2015, Abstract #1994 (Talk).

2014

STACK, K.M., J.P. Grotzinger, D.Y. Sumner, F. Calef, L. Edgar, S. Gupta, K. Lewis, M. Rice, D. Rubin, R.M.E. Williams, "Synthesizing MSL Curiosity Rover Observations and Orbital Geologic Mapping to Build a Regional Stratigraphy for Aeolis Palus, Gale Crater," 126th Annual Meeting of the Geological Society of America, Vancouver, British Columbia, October 19-22, 2014, Paper #202-4 (Talk).

STACK, K.M., J.P. Grotzinger, R.E. Milliken, R.N. Farley, "Global Distribution of Stratified Deposits on Mars," Eighth International Conference on Mars, Pasadena, California, July 14-18, 2014, Abstract #1192 (Talk).

2013

STACK, K.M. and the MSL Science Team, "An Overview of Past Depositional Environments Explored by the Curiosity Rover at Bradbury Landing and Yellowknife Bay, Gale crater, Mars," 125th Annual Meeting of the Geological Society of America, Denver, Colorado, October 27-31, 2013, Paper #6-4 (Invited Talk).

STACK, K.M., J. Grotzinger, L. Kah, D. Sumner, L. Edgar, M. Rice, D. Oehler, A. Fairen, K. Siebach, and the MSL Science Team, "The distribution and origin of nodules and minibowls within the Sheepbed member: Implications for early diagenesis in Yellowknife Bay, Gale Crater, Mars," 125th Annual Meeting of the Geological Society of America, Denver, Colorado, October 27-31, 2013, Abstract #227794 (Poster).

STACK, K.M., J.P. Grotzinger, J.L. Griffes, R.N. Farley, "Global Distribution of Layered Deposits on Mars," STRATI 2013: 1st International Congress on Stratigraphy, Lisbon, Portugal, July 1-7, 2013, Abstract #180 (Talk).

STACK, K.M., J.P. Grotzinger, D.Y. Sumner, B.L. Ehlmann, R.E. Milliken, J.L. Eigenbrode, S. Gupta, R.M.E. Williams, L.C. Kah, K.W. Lewis, and the MSL Team, "Using outcrop exposures on the road to Yellowknife Bay to build a stratigraphic column, Gale Crater, Mars." LPSC 44, The Woodlands, Texas, March 18-22, 2013, Abstract #1431 (Talk)

2011

STACK, K.M. and R.E. Milliken. "Reflectance Spectroscopy of Clay-Sulfate Mixtures: Implications for quantifying hydrated minerals and determining depositional environments on Mars." LPSC 42, The Woodlands, Texas, March 7-11, 2011, Abstract #2024 (Poster)

STACK, K.M. and J.P. Grotzinger, "Beds, bed thickness, and bed thickness distributions on Mars: An orbital perspective. HiRISE Team Meeting, Flagstaff, Arizona, August 16-18, 2011 (Talk)

2010

STACK, K.M., J.P. Grotzinger, R.E. Milliken. "Statistical analysis of bed thickness distributions in layered deposits on Mars." First International Conference on Mars Sedimentology and Stratigraphy, El Paso, Texas, April 19-21, 2010, Abstract #6013 (Poster)

STACK, K.M., M. Lamb, R.E. Milliken, S. Leprince, J.P. Grotzinger, "Movement and grain size distribution of Bahamian sand shoals from remote sensing." KISS Workshop- Monitoring Earth Surface Changes from Space II, March 29-31, 2010 (Talk)

INVITED LECTURES AND PANELS

2022 Invited Speaker, Thomas A. Mutch Lecture, Department of Earth Environmental and Planetary Sciences, Brown University, 9/22
2022 Invited Speaker, Middlebury College Geology Department Seminar, 4/15
2022 Invited Speaker, The Planetary Society, Day of Action, 3/8
2022 JPL Von Karman Lecture, 2/17, "Roving with Perseverance: Findings from One Year on Mars" https://www.youtube.com/watch?v=-IAcwLYYFGk.
2021 Invited Speaker, Caltech Division of Geological and Planetary Sciences Chair's Counsel, 11/17
2021 Invited Speaker, UC-Berkeley Earth and Planetary Science Department Seminar, 11/4
2021 Invited Speaker, Kansas Geological Society, 11/3
2021 Invited Plenary, 2021 Mars Society Virtual Convention, 10/15
2021 Georgia Tech Astrobiology Fall Distinguished Speaker Series, 9/10
2021 Invited Speaker, Inaugural Annual Meeting of the SEPM Planetary Research Group, 6/24
2021 Invited Speaker, California State University- Northridge Association of Retired Faculty, 3/10.
2021 Invited Speaker, National Academies of Science, Engineering, and Medicine- Space Studies Board, 2/17.
2021 Invited Speaker, Seattle Astronomical Society, 1/21, https://us02web.zoom.us/rec/share/fKzU3PJyqdk30cA2U8usfXTm5JEX8mSbeuU8VhyjUbo_vlFWfn4ng7sVq7NO1B-m.77xmR7kzjqtxnLEj, Passcode: ?e0P2aUj.
2020 Invited Speaker, Kansas Geological Survey, 12/16.
2020 Plenary Speaker, Radiological Sciences Laboratory Annual Retreat, Stanford University, 9/18.
2020 Invited Speaker, Keck Institute for Space Studies, California Institute of Technology, 9/29, https://www.kiss.caltech.edu/lectures/2020_Perseverance.html
2020 Panelist, Explore Mars Virtual Seminar, "Perseverance: Preparing for Launch," 4/23
2020 Invited Speaker, Planetary Science Seminar, Department of Earth, Planetary, and Space Sciences, UCLA, Los Angeles, CA, 1/24.
2018 Invited Speaker, Current Research in Earth, Environmental, and Planetary Sciences, Rice University, Houston, TX, 8/30.
2018 Judd H. and Cynthia S. Oualline Centennial Lecturer in Geological Sciences, Jackson School of Geosciences, University of Texas Austin, Austin, TX, 2/22.
2018 University of Texas Institute for Geophysics (UTIG) Brown Bag Seminar Series, Jackson School of Geosciences, University of Texas Austin, Austin, TX, 2/21.
2016 Mars Forum, Jet Propulsion Laboratory
2015 NASA Young Professional Science and Engineering Web Talk Series
2015 Keynote Speaker, Next Generation Flight Computing Workshop, Sandia National Labs
2015 Keynote Speaker, Chevron Decision Review Board Annual Meeting, JPL
2014 Keynote Speaker, Chevron Fellows Workshop, Pasadena, CA
2014 Keynote Speaker, Chevron Reservoir Management Forum, Chevron Corporation, Bakersfield, CA

PROFESSIONAL SERVICE

2022	LPSC Program Committee member and session convener; LPSC session co-convener
2021	LPSC Program Committee member and session convener; GSA session co-convener; AGU session co-convener
2019	Mars 9 Program Committee member
2015-present	Review Panel Member for NASA Mars Data Analysis Program; External Reviewer for NASA Mars Data Analysis Program, Planetary Data Archiving, Restoration, and Tools, Lunar Data Analysis Program
2014-present	Reviewer for Nature Geosciences, Journal of Geophysical Research, Icarus, Geophysical Research Letters, Marine Geology, Geologos, Planetary and Space Science
2015	Session convener, GSA

UNIVERSITY AND JPL COMMITTEES

2017	JPL Hiring Committee, Planetary Science: Mars
2013-2014	Cabinet member, Caltech Identity Project

ADVISING

Postdoctoral Scholars:

2022-present	Emily Cardarelli (Ph.D. Stanford, ’21)
2021-2022	Steven Sholes (Ph.D. University of Washington, ’19, starting as a Science Operations Systems Engineer at JPL)
2020-2022	Jesse Tarnas (Ph.D. Brown University, ’20, now a Planetary Scientist and Instrument Specialist at Blue Origin)
2020	Rachel Kronyak (Ph.D. University of Tennessee, Knoxville ’19, now a Science Operations Systems Engineer at JPL)
2017-2018	Vivian Sun (Ph.D. Brown ’17, now a Science Operations Systems Engineer at JPL)

JPL Interns:

2022	Michelle Tebolt (Ph.D. UT-Austin) and Jordan Bretzfelder (UCLA)
2021	Jonathan Sneed (Ph.D. UCLA) and Michelle Tebolt (Ph.D. UT-Austin)
2020	Jonathan Sneed (Ph.D. UCLA) and Sabrina Khan (B.Sc. MIT, starting Ph.D. at Johns Hopkins in 2022)
2019	Axel Noblet (Masters, Université de Nantes)
2016-2017	Shannon Cofield (Ph.D. Old Dominion University)

Volunteer Research Assistant:

2018	Tina Seeger (Caltech)

TEACHING EXPERIENCE

2022 Guest lecturer for Introduction to Astronomy (ASTR 102), Williams College, April 14
2021 Guest lecturer for The International Geobiology Course, Caltech, July 9
2020 Guest lecturer for Planetary Geology (GEOL 0810), Brown University, April 8
2018 Guest Lecturer for NASA Endeavor STEM Teaching Certificate Project, March 14
2013 Graduate Teaching Assistant for Sedimentology, Caltech
2013 Graduate Teaching Assistant for Igneous and Metamorphic Petrography, Caltech
2012 Graduate Teaching Assistant for Advanced Field and Structural Geology, Caltech
2011 Graduate Teaching Assistant for Igneous and Metamorphic Petrography, Caltech
2010 Graduate Teaching Assistant for Advanced Field and Structural Geology, Caltech
2008 Undergraduate Teaching Assistant for Mineralogy, Williams College
2007 Undergraduate Teaching Assistant for Mineralogy, Williams College
2007 Undergraduate Teaching Assistant for Global Warming and Natural Disasters, Williams College
2005 Undergraduate Teaching Assistant for Introduction to Astronomy, Williams College

COMMUNITY AND EDUCATIONAL OUTREACH

2022 Guest call-in speaker for EXPLO middle school robotics classes, 6/28
Science and Society Series, Lewes Library, Lewes, DE, 6/7
2021 Guest call-in speaker for EXPLO middle school robotics classes, 7/8 and 7/29
Guest call-in speaker for EXPLO high school robotics class, 7/28
Guest call-in speaker for The Global Classroom "The Big Picture" delivered by Scarisbrick Hall, UK in partnership with the World Health Organization, 6/8
Invited presenter, NASA's Solar System Exploration Division Senior Living Community Outreach Program, 5/19
Guest call-in speaker for Cheshire, CT Girl Scout troop, 4/12
Guest call-in speaker for Cheshire, CT High School Science National Honor Society, 2/11
2020 Guest call-in speaker for EXPLO middle school robotics class, 7/28
NASA/JPL Behind the Spacecraft Youtube LIVE interview, 4/30/
2019 Presenter, NASA's Museum Alliance, 10/22
Guest call-in speaker for EXPLO middle school robotics class, 7/11and 8/1
2018 Guest call-in panelist for Ad Astra Academy, Rio de Janeiro, 8/13
Guest call-in speaker for EXPLO middle school robotics class, 7/12 and 7/27
Presenter, NASA Center JPL Facebook Live Event, 5/22
Panelist for Caltech Alumni Association "Techer Talk," 1/18
2017 Guest Presenter for 7-12th graders, Gulf Coast Exploreum Science Center of Mobile, Mobile, AL, 12/1
2015 Contributor to Curiosity's 3 Years on Mars Reddit AMA
2014 Volunteer, JPL Open House
Q&A About Mars and the Mars Rover, Naturalist's Notebook, Seal Harbor, ME, 7/23
Presenter, Science Saturdays, Caltech
2012-2014 Student consultant and representative, Caltech Alumni Association

2011 Volunteer, NASA Spacefest, California Science Center
2010 Organizer, Caltech Geoclub Seminar Series
2010 Presenter, Pasadena Unified School District Middle School Science Day
2010 Guest Presenter for 6^{th}-8^{th} graders, Aveson Charter School
2006 Planetarium Presenter, Hopkins Observatory, Williams College

PROFESSIONAL ASSOCIATIONS

2019-present American Geophysical Union
2007-present Geological Society of America