

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: Bud Wobus)
Majors: Geosciences (with honors), Astronomy

Additional Training:

- 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

- 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

- 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)
- 2020-2021 **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

In Review or Submitted

51. **STACK, K.M.** et al., “Photogeologic Map of the Perseverance Rover Field Site in Jezero Crater Constructed by the Mars 2020 Science Team,” in review at *Space Science Reviews*.
50. RABINOVITCH, J. and **K.M. Stack**, “Characterizing landing site safety on Venus using Venera panoramas and Magellan radar properties,” in review at *Icarus*.
49. FARLEY, K.A. et al., “Mars 2020 Mission Overview,” in review at *Space Science Reviews*.
48. S.G. Banham, 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, “A Rock Record of Complex Aeolian Bedforms in a Hesperian Desert Landscape: the Stimson Formation as Exposed in the Murray Buttes, Gale Crater, Mars,” in review at *JGR-Planets*
47. 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, “Billion-year exposure ages in Gale crater (Mars) indicate Mount Sharp formed before the Amazonian Period,” submitted to *Earth and Planetary Science Letters*.
46. 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, “Geometry and significance of an erosional unconformity on Mars, basal Stimson formation, Gale crater,” in review at *J. Geophys. Res.-Planets*.

Accepted and Published

45. **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*, 66(5) 1768-1802.
44. **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*, doi:10.1016/j.icarus.2016.02.024.
43. **STACK, K.M.** and R.E. Milliken (2015). Reflectance spectroscopy of clay-sulfate Mixtures and implications for quantifying hydrated minerals on Mars, *Icarus*, 250, 332-356, doi:10.1016/j.icarus.2014.12.009.
42. **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.*, doi:10.1002/2014JE004617.
41. **STACK, K.M.**, J.P. Grotzinger, R.E. Milliken (2013). Bed Thickness Distributions on Mars: An Orbital Perspective, *J. Geophys. Res.*, 118(6), 1323-1349.
40. SUN, V.Z. and **K.M. Stack**, “Geologic Map of Jezero Crater and the Nili Planum Region, Mars,” USGS Scientific Investigations Map (SIM). In print.
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. Bryck, 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, “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, “Origin and Composition of Three Heterolithic Boulder- and Cobble-Bearing Deposits Overlying the Murray and Stimson Formations, Gale Crater, Mars” *Icarus*, 350, <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**, “Fluvial Regimes, Morphometry and Age of Jezero Crater Paleolake Inlet Valleys and their Exobiological Significance for the 2020 Rover Mission Landing Site,” *Astrobiology*, 20(8), 994-1013, <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, “Regional structural orientation of the Mt. Sharp group revealed by in-situ dip measurements and stratigraphic correlations on the Vera Rubin ridge,” *JGR Planets*, 125(5), <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*, 125(3), <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*, 328, 194-209.
32. SUN, V.Z., **K.M. Stack**, L.C. Kah, W. Fischer, R. Wiens, S. Johnson, M. Nachon, C. House, L. Thompson, A. Williams, R. Kronyak, S. VanBommel (2019), “Late-Stage Diagenetic Concretions in the Murray Formation, Gale Crater, Mars,” *Icarus*, 321(15), 866-890.
31. RIVERA-HERNÁNDEZ, F., D.Y. Sumner, N. Mangold, **K.M. Stack**, O. Forni, H. Newsom, A. Williams, M. Nachon, J. L’Haridon, O. Gasnault, R. Wiens, S. Maurice (2019), “Using ChemCam LIBS data to constrain grain size in rocks on Mars: Proof of concept and application to rocks at Yellowknife Bay and Pahrump Hills, Gale crater,” *Icarus*, 321, 82-98.

30. KAH, L.C., **K.M. Stack**, J.L. Eigenbrode, R.A. Yingst, K.S. Edgett (2018). Syndepositional precipitation of calcium sulfate in Gale Crater, Mars, *Terra Nova*, 30(6), 431-439.
29. WILLIFORD, K.H., K.A. Farley, **K.M. Stack**, A.C. Allwood, D. Beaty, L.W. Beegle, R. Bhartia, A.J. Brown, M. de la Torre Juarez, S.-E. Hamran, M.H. Hecht, J. Hurowitz, J.A. Rodriguez-Manfredi, S. Maurice, S. Milkovich, R.C. Wiens (2018). The NASA Mars 2020 Rover Mission and the Search for Extraterrestrial Life, *From Habitability to Life on Mars*, eds. N.A. Cabrol and E.A. Grin, Elsevier, p. 370.
28. STEIN, N., J.P. Grotzinger, J. Schieber, N. Mangold, B. Hallet, H. Newsom, **K.M. Stack**, J.A. Berger, L. Thompson, K.L. Siebach, A. Cousin, S. Le Mouélic, M. Minitti, D.Y. Sumner, C. Fedo, C.H. House, S. Gupta, A.R. Vasavada, R. Gellert, R.C. Wiens, J. Frydenvang, O. Forni, P.Y. Meslin, V. Payre, E. Dehouck (2018). Desiccation cracks provide evidence of lake drying on Mars, Sutton Island member, Murray formation, Gale Crater, *Geology*, 46(6), doi:10.1130/G40005.1.
27. BANHAM, S.G., S. Gupta, D. Rubin, J.A. Watkins, D.Y. Sumner, K.S. Edgett, J.P. Grotzinger, K.W. Lewis, L.A. Edgar, **K.M. Stack-Morgan**, R. Barnes, J.F. Bell III, M.D. Day, R.C. Ewing, M.G.A. Lapotre, N.T. Stein, F. Rivera-Hernandez, A. Vasavada (2018), "Ancient Martian Aeolian processes and palaeomorphology reconstructed from the Stimson formation on the lower slope of Aeolis Mons, Gale crater," *Sedimentology*.
26. WILLIAMS, R.M.E., M.C. Malin, **K.M. Stack**, D.M. Rubin (2018), Assessment of Aeolis Palus Assessment of Aeolis Palus stratigraphic relationships based on bench-forming strata in the Kylie and the Kimberley Regions of Gale Crater, Mars, *Icarus*, 309, 84-104, doi:10.1016/j.icarus.2018.02.028.
25. EDGAR, L.A., S. Gupta, D.M. Rubin, K.W. Lewis, G.A. Kocurek, R.B. Anderson, J.F. Bell III, G. Dromart, K.S. Edgett, J.P. Grotzinger, C. Hardgrove, L.C. Kah, R. Leveille, M.C. Malin, N. Mangold, R.E. Milliken, M. Minitti, M. Palucis, M. Rice, S.K. Rowland, J. Schieber, **K.M. Stack**, D.Y. Sumner, R.M.E. Williams (2018), Shaler: in situ analysis of a fluvial sedimentary deposit on Mars, *Sedimentology*, 65(1), 96-122, doi:10.1111/sed.12370.
24. WIENS, R., D. Rubin, W. Goetz, A. Fairen, S. Schwenzer, J. Johnson, B. Clark, N. Mangold, R. Milliken, **K. Stack Morgan**, D. Oehler, S. Rowland, M. Chan, D. Vaniman, S. Maurice, O. Gasnault, W. Rapin, S. Schroeder, S. Clegg, O. Forni, D. Blaney, A. Cousin, V. Payre, C. Fabre, M. Nachon, S. Le Mouélic, V. Sautter, S. Johnstone, F. Calef, A. Vasavada, J. Grotzinger (2017), Centimeter to Decimeter Hollow Concretions and Voids in Gale Crater Sediments, Mars, *Icarus*, doi:10.1016/j.icarus.2017.02.003.
23. HUROWITZ, J.A., J.P. Grotzinger, W.W. Fischer, R.E. Milliken, E. Dehouck, A.G. Fairen, J. Frydenvang, R. Gellert, S. Gupta, S.M. McLennan, E.B. Rampe, K. Siebach, **K. Stack Morgan**, N. Stein, D.Y. Sumner, A.R. Vasavada, R.C. Wiens (2017), Redox stratification of an ancient lake in Gale crater, Mars, *Science*, doi:10.1126/science.aah6849.
22. RICE, M.S., S. Gupta, A.H. Treiman, **K.M. Stack**, F. Calef, L.A. Edgar, J. Grotzinger, N. Lanza, L. Le Deit, J. Lasue, K.L. Siebach, A. Vasavada, R.C. Wiens, J. Williams (2017), Geologic Overview of the Mars Science Laboratory Rover Mission at The Kimberley, Gale Crater, Mars, *JGR-Planets*, doi:10.1002/2016JE005200.
21. BRISTOW, T.F., R.M. Haberle, D.F. Blake, D. Des Marais, J.L. Eigenbrode, A.G. Fairen, J.P. Grotzinger, **K.M. Stack**, M.A. Mischna, E.B. Rampe, K.L. Siebach, B. Sutter, D.T. Vaniman, A.R. Vasavada (2017), Low Hesperian P_{CO_2} constrained from in situ mineralogical analysis at Gale crater, Mars, *PNAS*, doi:10.1073/pnas.1616649114.

20. EHLMANN, B.L., F.S. Anderson, J. Andrews-Hanna, J. Carter, D.C. Catling, P.R. Christensen, B.A. Cohen, C.D. Dressing, C.S. Edwards, L.T. Elkins-Tanton, K.A. Farley, C.I. Fassett, W.W. Fischer, A.A. Fraeman, M.P. Golombek, V.E. Hamilton, A.G. Hayes, C.D.K. Herd, B. Horgan, R. Hu, B.M. Jakosky, J.R. Johnson, J.F. Kasting, L. Kerber, K.M. Kinch, E.S. Kite, H.A. Knutson, J.I. Lunine, P.R. Mahaffy, N. Mangold, F.M. McCubbin, J.F. Mustard, P.B. Niles, C. Quantin-Nataf, M.S. Rice, **K.M. Stack**, D.J. Stevenson, S.T. Stewart, M.J. Toplis, T. Usui, B.P. Weiss, S.C. Werner, R.D. Wordsworth, J.J. Wray, R.A. Yingst, Y.L. Yung, K.J. Zahnle (2016), The Sustainability of Habitability on Terrestrial Planets: Insights, Questions, and Needed Measurements from Mars for Understanding the Evolution of Earth-like Worlds, *JGR-Planets 25th anniversary special issue*, doi:10.1002/2016JE005134.
19. NACHON M., N. Mangold, O. Forni, L.C. Kah, A. Cousin, R.C. Wiens, R. Anderson, D. Blaney, J.B. Blank, F. Calef, S.M. Clegg, C. Fabre, M.R. Fisk, O. Gasnault, J.P. Grotzinger, R. Kronyak, N.L. Lanza, J. Lasue, L. Le Deit, S. Le Mouelic, P.-Y. Meslin, D.Z. Oehler, V. Payre, W. Rapin, S. Schorder, **K. Stack**, D. Sumner (2016), Chemistry of diagenetic features analyzed by ChemCam at Pahrump Hills Gale crater, Mars, *Icarus*, 281, 121-136, doi:10.1016/j.icarus.2016.08.026.
18. LITVAK, M.L., I.G. Mitrofanov, C. Hardgrove, **K.M. Stack**, A.B. Sanin, D. Lisov, W.V. Boynton, F. Fedosov, D. Golovin, K. Harshman, I. Jun, A.S. Kozyrev, R.O. Kuzmin, A. Malakhov, R. Milliken, M. Mischna, J. Moersch, M. Mokrousov, S. Nikiforov, R. Starr, C. Tate, V.I. Tret'yakov, A. Vostrukhin (2016), Hydrogen and chlorine abundances in the Kimberley formation of Gale crater measured by the DAN instrument onboard the Mars Science Laboratory Curiosity Rover, *J. Geophys. Res.-Planets*, 121(5), doi:10.1002/2015JE004960.
17. LE DEIT, L.C., N. Mangold, O. Forni, A. Cousin, J. Lasue, S. Schroder, R.C. Wiens, D. Sumner, C. Fabre, **K.M. Stack**, R.B. Anderson, D. Blaney, S. Clegg, G. Dromart, M. Fisk, O. Gasnault, J.P. Grotzinger, S. Gupta, N. Lanza, S. LeMouelic, S. Maurice, S.M. McLennan, P.-Y. Meslin, M. Nachon, H. Newsom, V. Payre, W. Rapin, M. Rice, V. Sautter, A.H. Treiman (2016), The Potassic Sedimentary Rocks in Gale Crater, Mars, as Seen by ChemCam Onboard *Curiosity*, *J. Geophys. Res.-Planets*, 121(5), 784-804, doi:10.1002/2015JE004987.
16. LASUE, J., S.M. Clegg, O. Forni, A. Cousin, R.C. Wiens, N. Lanza, N. Mangold, L. LeDeit, O. Gasnault, S. Maurice, J.A. Berger, **K. Stack**, D. Blaney, C. Fabre, W. Goetz, J. Johnson, S. Le Mouelic, M. Nachon, V. Payre, W. Rapin, D.Y. Sumner (2016), Observation of > 5 wt % zinc at the Kimberley outcrop, Gale crater, Mars, *J. Geophys. Res.-Planets*, doi:10.1002/2015JE004946.
15. MANGOLD, N., L.M. Thompson, O. Forni, A.J. Williams, C. Fabre, L. LeDeit, R.C. Wiens, R. Williams, R.B. Anderson, D.L. Blaney, F. Calef, A. Cousin, S.M. Clegg, G. Dromart, W.E. Deitrich, K.S. Edgett, M.R. Fisk, O. Gasnault, R. Gellert, J.P. Grotzinger, L. Kah, S. Le Mouelic, S.M. McLennan, S. Maurice, P.-Y. Meslin, H.E. Newsom, M.C. Palucis, W. Rapin, V. Sautter, K.L. Siebach, **K. Stack**, D. Sumner, A. Yingst (2016), Composition of conglomerates analyzed by the Curiosity rover: Implications for Gale Crater crust and sediment sources, *J. Geophys. Res.-Planets*, doi:10.1002/2015JE004977.
14. GROTZINGER, J.P., S. Gupta, M.C. Malin, D.M. Rubin, J. Schieber, K. Siebach, D.Y. Sumner, **K.M. Stack**, A.R. Vasavada, R.E. Arvidson, F. Calef III, L. Edgar, W.F. Fischer, J.A. Grant, J. Griffes, L.C. Kah, M.P. Lamb, K.W. Lewis, N. Mangold, M.E. Minnitti, M.

- Palucis, M. Rice, R.M.E. Williams, R.A. Yingst, D. Blake, D. Blaney, P. Conrad, J. Crisp, W.E. Dietrich, G. Dromart, K.S. Edgett, R.C. Ewing, R. Gellert, J.A. Hurowitz, G. Kocurek, P. Mahaffy, M.J. McBride, S.M. McLennan, M. Mischna, D. Ming, R. Milliken, H. Newsom, D. Oehler, T.J. Parker, D. Vaniman, R.C. Wiens, S.A. Wilson (2015). Deposition, exhumation, and paleoclimate of an ancient lake deposit, Gale Crater, Mars, *Science*, doi:10.1126/science.aac7575.
13. MANGOLD, N., O. Forni, G. Dromart, **K. Stack**, R. Wiens, O. Gasnault, D. Sumner, M. Nachon, P.-Y. Meslin, R. Anderson, B. Barraclough, J. Bell, G. Berger, D. Blaney, J. Bridges, F. Calef, B. Clark, S. Clegg, A. Cousin, L. Edgar, K. Edgett, B. Ehlmann, C. Fabre, M. Fisk, J. Grotzinger, S. Gupta, K. Herkenhoff, J. Horowitz, J. Johnson, L. Kah, N. Lanza, J. Lasue, S. Le Mouelic, R. Leveille, E. Lewin, M.C. Malin, S. McLennan, S. Maurice, N. Melikechi, A. Mezzacappa, R. Milliken, H.E. Newsom, A. Ollila, S. Rowland, V. Sautter, M. Schmidt, S. Schroder, C. d'Uston, D. Vaniman, R. Williams (2015), Chemical variations of Yellowknife Bay Formation sediments analyzed by the Curiosity Rover on Mars, *J. Geophys. Res.*, doi:10.1002/2014JE004681.
 12. SIEBACH, K.L., J.P. Grotzinger, L.C. Kah, **K.M. Stack**, M. Malin, R. Leveille, D.Y. Sumner (2014). Subaqueous Shrinkage Cracks in the Sheepbed Mudstone: Implications for Early Fluid Diagenesis, Gale Crater, Mars, *J. Geophys. Res.*, doi:10.1002/2014JE004623.
 11. BLANEY, D., R.C. Wiens, S. Maurice, S.M. Clegg, R.A. Anderson, L.C. Kah, S. Le Mouelic, A. Ollila, N. Bridges, R. Tokar, G. Berger, J.C. Bridges, A. Cousin, B. Clark, M.D. Dyar, P.L. King, N. Lanza, N. Mangold, P.-Y. Meslin, H. Newsom, S. Schroder, S. Rowland, J. Johnson, L. Edgar, O. Gasnault, O. Forni, M. Schmidt, W. Goetz, **K. Stack**, D. Sumner, M. Fisk, M.B. Madsen (2014), Chemistry and texture of the rocks at Rocknest, Gale Crater: Evidence for sedimentary origin and diagenetic alteration, *J. Geophys. Res.*, 119(9), 2109-2131, doi:10.1002/2013JE004590.
 10. NACHON, M., S.M. Clegg, N. Mangold, S. Schroder, L.C. Kah, G. Dromart, A.M. Ollila, J.R. Johnson, D. Oehler, J.C. Bridges, S. Le Mouelic, O. Forni, R.C. Wiens, R.B. Anderson, D. Blaney, J.F. Bell III, B.C. Clark, A. Cousin, D.M. Darby, B. Ehlmann, C. Fabre, O. Gasnault, J.P. Grotzinger, J. Lasue, E. Lewin, R. Leveille, S.M. McLennan, S. Maurice, P.-Y. Meslin, M.S. Rice, S.W. Squyres, **K.M. Stack**, D.Y. Sumner, D.T. Vaniman, D. Wellington (2014). Calcium sulfate veins characterized by ChemCam/Curiosity at Gale Crater, Mars, *J. Geophys. Res.*, accepted.
 9. LITVAK, M., I.G. Mitrofanov, A.B. Sanin, D. Lisov, A. Behar, W.V. Boynton, L. Deflores, F. Fedosov, D. Golovin, C. Hardgrove, K. Harshman, I. Jun, A.S. Kozyrev, R.O. Kuzmin, A. Malakhov, R. Milliken, M. Mischna, J. Moersch, M. Mokrousov, S. Nikiforov, V.N. Shvetsov, **K. Stack**, R. Starr, C. Tate, V.I. Tret'yakov, A. Vostrukhin, and the MSL Team (2014). Local variations of bulk hydrogen and chlorine content measured at the contact between the Sheepbed and Gillespie Lake units in Yellowknife Bay, Gale crater, using the DAN instrument onboard Curiosity, *J. Geophys. Res.*, doi:10.1002/2013JE004556.
 8. GROTZINGER, J.P., D.Y. Sumner, L.C. Kah, **K. Stack**, S. Gupta, L. Edgar, D. Rubin, K. Lewis, J. Schieber, N. Mangold, R. Milliken, P.G. Conrad, D. DesMarais, J. Farmer, K. Siebach, F. Calef III, J. Hurowitz, S.M. McLennan, D. Ming, D. Vaniman, J. Crisp, A. Vasavada, K.S. Edgett, M. Malin, D. Blake, R. Gellert, P. Mahaffy, R.C. Wiens, S. Maurice, J.A. Grant, S. Wilson, R.C. Anderson, L. Beegle, R. Arvidson, B. Hallet, R.S. Sletten, M. Rice, J. Bell III, J. Griffes, B. Ehlmann, R.B. Anderson, T.F. Bristow, W.E. Dietrich, G. Dromart, J. Eigenbrode, A. Fraemen, C. Hardgrove, K. Herkenhoff, L. Jandura, G. Kocurek,

- S. Lee, L.A. Leshin, R. Leveille, D. Limonadi, J. Maki, S. McCloskey, M. Meyer, M. Minitti, H. Newsom, D. Oehler, A. Okon, M. Palucis, T. Parker, S. Rowland, M. Schmidt, S. Squyres, A. Steele, E. Stolper, R. Summons, A. Treiman, R. Williams, A. Yingst, MSL Science Team (2014). A Habitable Fluvio-Lacustrine Environment at Yellowknife Bay, Gale Crater, Mars, *Science*, doi: 10.1126/science.1242777.
7. MCLENNAN, S.M., R.B. Anderson, J.F. Bell III, J.C. Bridges, F. Calef III, J.L. Campbell, B.C. Clark, S. Clegg, P. Conrad, A. Cousin, D.J. DesMarais, G. Dromart, M.D. Dyar, L.A. Edgar, B.L. Ehlmann, C. Fabre, O. Forni, O. Gasnault, R. Gellert, S. Gordon, J.A. Grant, J.P. Grotzinger, S. Gupta, K.E. Herkenhoff, J.A. Horowitz, P.L. King, S. Le Mouelic, L.A. Leshin, R. Leveille, K.W. Lewis, N. Mangold, S. Maurice, D.W. Ming, R.V. Morris, M. Nachon, H.E. Newsom, A.M. Ollila, G.M. Perrett, M.S. Rice, M.E. Schmidt, S.P. Schwenzer, **K. Stack**, E.M. Stolper, D.Y. Sumner, A.H. Treiman, S. VanBommel, D.T. Vaniman, A. Vasavada, R.C. Wiens, R.A. Yingst, MSL Science Team (2014). Elemental Geochemistry of Sedimentary Rocks in Yellowknife Bay, Gale Crater, Mars, *Science*, doi: 10.1126/science.1244734.
 6. VANIMAN, D.T., D.L. Bish, D.W. Ming, T.F. Bristow, R.V. Morris, D.F. Blake, S.J. Chipera, S.M. Morrison, A.H. Treiman, E.B. Rampe, M. Rice, C.N. Achilles, J.P. Grotzinger, S.M. McLennan, J. Williams, J.F. Bell III, H.E. Newsom, R.T. Downs, S. Maurice, P. Sarrazin, A.S. Yen, J.M. Morookian, J.D. Farmer, **K. Stack**, R.E. Milliken, B.L. Ehlmann, D.Y. Sumner, G. Berger, J.A. Crisp, J.A. Horowitz, R. Anderson, D.J. Des Marais, E.M. Stolper, K.S. Edgett, S. Gupta, N. Spanovich, MSL Science Team (2014). Mineralogy of a Mudstone on Mars, *Science*, doi: 10.1126/science.1243480.
 5. WILLIAMS, R.M.E., J.P. Grotzinger, W.E. Dietrich, S. Gupta, D.Y. Sumner, R.C. Wiens, N. Mangold, M.C. Malin, K.S. Edgett, S. Maurice, O. Forni, O. Gasnault, A. Ollila, H.E. Newsom, G. Dromart, M.C. Palucis, R.A. Yingst, R.B. Anderson, K.E. Herkenhoff, S. Le Mouelic, W. Goetz, M.B. Madsen, A. Koefoed, J.K. Jensen, J.C. Bridges, S.P. Schwenzer, K.W. Lewis, **K.M. Stack**, D. Rubin, L.C. Kah, J.F. Bell III, J.D. Farmer, R. Sullivan, T. Van Beek, D.L. Blaney, O. Pariser, R.G. Deen, MSL Science Team (2013). Martian Fluvial Conglomerates at Gale Crater, *Science*, 340(6136), 1068-1072.
 4. SCHMIDT, M., J.L. Campbell, R. Gellert, G.M. Perrett, A.H. Treiman, D.L. Blaney, A. Ollila, F.J. Calef III, L. Edgar, B.E. Elliott, J. Grotzinger, J. Horowitz, P.L. King, M.E. Minitti, V. Sautter, **K. Stack**, J.A. Berger, J.C. Bridges, B.L. Ehlmann, O. Forni, L.A. Leshin, K.W. Lewis, S.M. McLennan, D.W. Ming, H. Newsom, I. Pradler, S.W. Squyres, E.M. Stolper, L. Thompson, S. VanBommel, R.C. Wiens (2013). Volatile element enrichment and geochemical diversity in rocks examined by the MSL Alpha Particle X-Ray Spectrometer (APXS) along Bradbury Rise, Gale Crater, *J. Geophys. Res.*, doi: 10.1002/2013JE004481.
 3. FRAEMAN, A.A., R.E. Arvidson, J.G. Catalano, J.P. Grotzinger, R.V. Morris, S.L. Murchie, **K.M. Stack**, D.C. Humm, J.A. McGovern, F.P. Seelos, K.D. Seelos, C.E. Viviano (2013). Detection and Mapping of a Hematite Capping Ridge in Gale Crater, Mars and Implications for Past Aqueous Conditions, *Geology*, doi:10.1130/G34613.1.
 2. CREVELING, J.R., D. Fernandez-Remolar, M. Rodriguez-Martinez, S. Menendez, K.D. Bergmann, B.C. Gill, J. Abelson, R. Amils, B.L. Ehlmann, D.C. Garcia-Bellido, J.P. Grotzinger, C. Hallmann, **K.M. Stack**, A.H. Knoll (2013). Geobiology of a Lower Cambrian carbonate platform, Pedroche Formation, Ossa Morena Zone, Spain., *Palaeo-3*, 386, 459-478.

1. BEYER, R., **K. Stack**, J.L. Griffes, R.E. Milliken, K.E. Herkenhoff, S. Byrne, J.W. Holt, J.P. Grotzinger (2012). An atlas of Mars sedimentary rocks as seen by HiRISE, *Sedimentary Geology of Mars*, eds. J.P. Grotzinger and R.E. Milliken, *SEPM Special Publication No. 102*.

FIRST-AUTHOR or STUDENT/POST-DOC CONFERENCE PRESENTATIONS

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

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).
- 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

- 2020 Invited Speaker, Keck Institute for Space Studies, California Institute of Technology, July 29, https://www.kiss.caltech.edu/lectures/2020_Perseverance.html
- 2020 Invited Speaker, Planetary Science Seminar, Department of Earth, Planetary, and Space Sciences, UCLA, Los Angeles, CA, January 24.
- 2018 Invited Speaker, Current Research in Earth, Environmental, and Planetary Sciences, Rice University, Houston, TX, August 30.
- 2018 Judd H. and Cynthia S. Oualline Centennial Lecturer in Geological Sciences, Jackson School of Geosciences, University of Texas Austin, Austin, TX, February 22.
- 2018 University of Texas Institute for Geophysics (UTIG) Brown Bag Seminar Series, Jackson School of Geosciences, University of Texas Austin, Austin, TX, February 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

- 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, Geologists, 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:

- 2020 Rachel Kronyak (Ph.D. University of Tennessee, Knoxville '19, began full-time as a ground data engineer at JPL Aug. 2020)
- 2017-2018 Vivian Sun (Ph.D. Brown '17, began full-time as a ground data engineer at JPL Oct. 2018)

JPL Interns:

- 2020 Jonathan Sneed (Ph.D. UCLA) and Sabrina Khan (B.Sc. MIT)
- 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

- 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 OUTREACH

- 2020 Guest call-in speaker for EXPLO middle school robotics class, 7/28/2020
NASA/JPL Behind the Spacecraft Youtube LIVE interview, 4/30/20
Panelist, Explore Mars Virtual Seminar, "Perseverance: Preparing for Launch," 4/23/20
- 2019 Presenter, NASA's Museum Alliance, 10/22/2019
Guest call-in speaker for EXPLO middle school robotics class, 7/11/19 and 8/1/19
- 2018 Guest call-in panelist for Ad Astra Academy, Rio de Janeiro, 8/13/18
Guest call-in speaker for EXPLO middle school robotics class, 7/12/18 and 7/27/18
Presenter, NASA Center JPL Facebook Live Event, 5/22/18

2017 Panelist for Caltech Alumni Association “Techer Talk,” 1/18/18
Guest Presenter for 7-12th graders, Gulf Coast Exploreum Science Center of
Mobile, Mobile, AL, 12/1/2018
2015 Contributor to Curiosity’s 3 Years on Mars Reddit AMA
2014 Volunteer, JPL Open House
2014 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 6th-8th graders, Aveson Charter School
2006 Planetarium Presenter, Hopkins Observatory, Williams College

PROFESSIONAL ASSOCIATIONS

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