

# Timothy A. Goudge

## Curriculum Vitae

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The University of Texas at Austin  
Jackson School of Geosciences  
2275 Speedway, Stop C9000  
Austin, TX 78712-1722

tgoudge@jsg.utexas.edu  
Telephone: +1 (512) 471-4770  
www.timgoudge.com  
Twitter: @timgoudge  
Pronouns: He/Him

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### Research Interests

My science is driven by interests in: using remote sensing to investigate the record of surface processes on planetary bodies; reconstructing the ancient martian surface environment from its geology and sedimentary rock record; quantitative analysis of infrared spectroscopy data to remotely characterize mineralogy; and understanding how distinct boundary conditions on planetary surfaces affect sedimentary processes.

### Education

**Brown University**, Providence, Rhode Island, USA

2015

**Doctor of Philosophy (PhD) in Geological Sciences**

Dissertation Title: *Paleolakes on Mars: Insights into timing, morphology, and mineralogy.*

Advisors: Jim Head and Jack Mustard

2012

**Master of Science (ScM) in Geological Sciences**

Advisors: Jim Head and Jack Mustard

**Queen's University**, Kingston, Ontario, Canada

2009

**Bachelor of Science (BSc) in Geological Engineering**

Focus in Geotechnical Engineering; Graduated Honors, 1<sup>st</sup> Class

### Professional Experience

2019 – Present

**Assistant Professor**

Department of Geological Sciences, Jackson School of Geosciences, The University of Texas at Austin

2015 – 2019

**Jackson School Distinguished Postdoctoral Fellow**

Jackson School of Geosciences, The University of Texas at Austin

2010 – 2015

**Graduate Student Research Assistant**

Department of Geological Sciences, Brown University

### Academic Honors and Awards

2021 – 2023

CIFAR Azrieli Global Scholar, Earth 4D: Subsurface Science & Exploration Program

2019, 2020

G. Moses and Carolyn G. Knebel Distinguished Teaching Award  
*Best geology course, as judged by the students. 2019 – graduate level (Intro. Remote Sensing); 2020 – undergraduate level (Sed. Rocks)*

2020

Geosphere Exceptional Reviewer

2018	National Center for Earth-Surface Dynamics 2 Synthesis Postdoctoral Fellowship
2015 – 2017	Jackson School Distinguished Postdoctoral Fellowship, The University of Texas at Austin
2012 – 2015	Natural Sciences and Engineering Research Council of Canada (NSERC) Postgraduate Scholarship
2012, 2013	GSA Northeastern Section Student Travel Grant
2010 – 2011	First Year Graduate Fellowship, Brown University
Prior to 2010 (at Queen's Univ.)	J. P. Bickell Foundation Mining Scholarship (2008–2009); Gartner Lee Scholarship in Geological Engineering (2008–2009); J. J. Denny Memorial Scholarship in Geological Engineering (2007–2008); Morley E. Wilson Scholarship in Geological Sciences (2006–2008); Annie Bentley Lillie Book Prize for First Year Calculus (2006–2007); Dean's Scholar (2005–2008); Dean's Award (2005–2006); Dean's Entrance Scholarship in Applied Science (2005–2006)

### **Refereed Journal Publications**

*Goudge research group members: #Graduate student, †postdoctoral fellow, §undergraduate student.*

#### **2021:**

1. †Stucky de Quay, G., **T. A. Goudge**, E. S. Kite, C. I. Fassett, and S. D. Guzewich (2021), Limits on runoff episode duration for early Mars: Integrating lake hydrology and climate models, *Geophys. Res. Lett.*, *in press*, DOI: 10.1029/2021GL093523.
2. Baum, M., R. Wordsworth, and **T. A. Goudge** (2021), Consequences of proposed shoreline deformation scenarios for Jezero crater, Mars, *Planet. Sci. J.*, *2*, 218, DOI: 10.3847/PSJ/ac01de.
3. Levy, J. S., C. I. Fassett, J. W. Holt, R. Parsons, W. Cipolli, **T. A. Goudge**, M. Tebolt#, L. Kuentz, J. Johnson, F. Ishraque, B. Cvijanovich, and I. Armstrong (2021), Surface boulder banding indicates martian debris-covered glaciers formed over multiple glaciations, *Proc. Natl. Acad. Sci.*, *118*, e2015971118, DOI: 10.1073/pnas.2015971118.

#### **2020:**

4. †Stucky de Quay, G., **T. A. Goudge**, and C. I. Fassett (2020), Precipitation and aridity constraints from paleolakes on early Mars, *Geology*, *48*, 1189–1193, DOI: 10.1130/G47886.1.
5. Cardenas, B. T., D. Mohrig, C. M. Hughes, **T. A. Goudge**, J. S. Levy, T. Swanson, J. Mason, and F. Zhao (2020), The anatomy of exhumed river-channel belts: Bedform- to belt-scale river kinematics of the Ruby Ranch Member, Cretaceous Cedar Mountain Formation, Utah, USA, *Sedimentology*, *67*, 3655–3682, DOI: 10.1111/sed.12765.
6. Swartz, J. M., **T. A. Goudge**, and D. Mohrig (2020), Quantifying coastal fluvial morphodynamics over the last 100 years on the lower Rio Grande, USA and Mexico, *J. Geophys. Res. Earth Surface*, *125*, e2019JF005443, DOI: 10.1029/2019JF005443.
7. Cook, C. W., A. M. Bramson, S. Byrne, J. W. Holt, M. S. Christoffersen, D. Viola, C. M. Dundas, and **T. A. Goudge** (2020), Sparse subsurface radar reflectors in Hellas Planitia, Mars, *Icarus*, *348*, 113847, DOI: 10.1016/j.icarus.2020.113847.
8. Brown, A. J., C. E. Viviano, and **T. A. Goudge** (2020), Olivine-carbonate mineralogy of the Jezero crater region, *J. Geophys. Res. Planets*, *125*, e2019JE006011, DOI: 10.1029/2019JE006011.

9. #Tebolt, M., J. Levy, **T. Goudge**, and N. Schorghofer (2020), Slope, elevation, and thermal inertia trends of martian recurring slope lineae initiation and termination points: Multiple possible processes occurring on coarse, sandy slopes, *Icarus*, 338, 113536, DOI: 10.1016/j.icarus.2019.113536.

**2019:**

10. Cardenas, B. T., T. Swanson, **T. A. Goudge**, R. W. Wagner, and D. Mohrig (2019), The effect of remote sensing resolution limits on aeolian sandstone measurements and the reconstruction of ancient dune fields on Mars: Numerical experiment using the Page Sandstone, Earth, *J. Geophys. Res. Planets.*, 124, 3244–3256, DOI: 10.1029/2019JE006191.
11. Tarnas, J. D., J. F. Mustard, H. Lin, **T. A. Goudge**, E. S. Amador, M. S. Bramble, C. H. Kremer, X. Zhang, Y. Itoh, and M. Parente (2019), Orbital identification of hydrated silica in Jezero crater, Mars, *Geophys. Res. Lett.*, 46, 12,771–12,782, DOI: 10.1029/2019GL085584.
12. Schorghofer, N., J. S. Levy, and **T. A. Goudge** (2019), High-resolution thermal environment of recurring slope lineae in Palikir crater, Mars, and its implications for volatiles, *J. Geophys. Res. Planets*, 124, 2852–2862, DOI: 10.1029/2019JE006083.
13. Lim, Y., J. S. Levy, **T. A. Goudge**, and W. Kim (2019), Ice cover as a control on the morphodynamics and stratigraphy of Arctic deltas, *Geology*, 47, 399–402, DOI: 10.1130/G45146.1.
14. Shahrzad, S., K. M. Kinch, **T. A. Goudge**, C. I. Fassett, D. H. Needham, C. Quantin-Nataf, and C. P. Knudsen (2019), Crater statistics on the dark-toned, mafic floor unit in Jezero Crater, Mars, *Geophys. Res. Lett.*, 46, 2408–2416, DOI: 10.1029/2018GL081402.
15. Kocurek, G., R. C. Martindale, M. Day, **T. A. Goudge**, C. Kerans, H. J. Hassenruck-Gudipati, J. Mason, B. T. Cardenas, E. I. Petersen, D. Mohrig, D. S. Aylward, C. M. Hughes, and C. M. Nazworth (2018), Antecedent aeolian dune topographic controls on carbonate and evaporite facies: Jurassic Todilto Member, Wanakah Formation, Ghost Ranch, New Mexico, USA, *Sedimentology*, 66, 808–837, DOI: 10.1111/sed.12518.
16. Bramble, M. S., **T. A. Goudge**, R. E. Milliken, and J. F. Mustard (2019), Testing the deltaic origin of fan deposits at Bradbury crater, Mars, *Icarus*, 319, 363–366, DOI: 10.1016/j.icarus.2018.09.024.
17. Hughes, C. M., B. T. Cardenas, **T. A. Goudge**, and D. Mohrig (2019), Deltaic deposits indicative of a paleo-coastline at Aeolis Dorsa, Mars, *Icarus*, 317, 442–453, DOI: 10.1016/j.icarus.2018.08.009.
18. de Haas, T., S. J. Conway, F. E. G. Butcher, J. Levy, P. M. Grindrod, **T. A. Goudge**, and M. R. Balme (2019), Time will tell: Temporal evolution of martian gullies and paleoclimatic implications, *Geol. Soc. London Spec. Pub.* 467, 165–186, DOI: 10.1144/SP467.1.
19. **Goudge, T. A.**, C. I. Fassett, and D. Mohrig (2019), Incision of paleolake outlet canyons on Mars from overflow flooding, *Geology*, 47, 7–10, DOI: 10.1130/G45397.1.

**2018:**

20. **Goudge, T. A.**, and C. I. Fassett (2018), Incision of Licus Vallis, Mars from multiple lake overflow floods, *J. Geophys. Res. Planets*, 123, 405–420, DOI: 10.1002/2017JE005438.
21. Cardenas, B. T., D. Mohrig, and **T. A. Goudge** (2018), Fluvial stratigraphy of valley fills at Aeolis Dorsa, Mars: Evidence for base-level fluctuations controlled by a downstream water body, *Geol. Soc. Amer. Bull.*, 130, 484–498, DOI: 10.1130/B31567.1.
22. Liu, Y., **T. A. Goudge**, J. G. Catalano, and A. Wang (2018), Spectral and stratigraphic mapping of hydrated minerals associated with interior layered deposits near the southern wall of Melas Chasma, Mars, *Icarus*, 302, 62–79, DOI: 10.1016/j.icarus.2017.11.006.

23. **Goudge, T. A.**, D. Mohrig, B. T. Cardenas, C. M. Hughes, and C. I. Fassett (2018), Stratigraphy and paleohydrology of delta channel deposits, Jezero crater, Mars, *Icarus*, *301*, 58–75, DOI: 10.1016/j.icarus.2017.09.034.
24. Salvatore, M. R., **T. A. Goudge**, M. S. Bramble, C. S. Edwards, J. L. Bandfield, E. S. Amador, J. F. Mustard, and P. R. Christensen (2018), Bulk mineralogy of the NE Syrtis and Jezero crater regions of Mars derived through thermal infrared spectral analyses, *Icarus*, *301*, 76–96, DOI: 10.1016/j.icarus.2017.09.019.

**2017:**

25. **Goudge, T. A.**, J. M. Russell, J. F. Mustard, J. W. Head, and S. Bijaksana (2017), A 40,000 year record of clay mineralogy at Lake Towuti, Indonesia: Paleoclimate reconstruction from reflectance spectroscopy and perspectives on paleolakes on Mars, *Geol. Soc. Amer. Bull.*, *129*, 806–819, DOI: 10.1130/B31569.1.
26. **Goudge, T. A.**, R. E. Milliken, J. W. Head, J. F. Mustard, and C. I. Fassett (2017), Sedimentological evidence for a deltaic origin of the western fan deposit in Jezero crater, Mars and implications for future exploration, *Earth Planet. Sci. Lett.*, *458*, 357–365, DOI: 10.1016/j.epsl.2016.10.056.
27. Levy, J. S., **T. A. Goudge**, J. W. Head, and C. I. Fassett (2017), Candidate volcanic and impact-induced ice depressions on Mars, *Icarus*, *285*, 185–194, DOI: 10.1016/j.icarus.2016.10.021.

**2016:**

28. **Goudge, T. A.**, C. I. Fassett, J. W. Head, J. F. Mustard, and K. L. Aureli (2016), Insights into surface runoff on early Mars from paleolake basin morphology and stratigraphy, *Geology*, *44*, 419–422, DOI: 10.1130/G37734.1.
29. Weider, S. Z., L. R. Nittler, S. L. Murchie, P. N. Peplowski, T. J. McCoy, L. Kerber, C. Klimczak, C. M. Ernst, **T. A. Goudge**, R. D. Starr, N. R. Izenberg, R. L. Klima, and S. C. Solomon (2016), Evidence from MESSENGER for sulfur- and carbon-driven explosive volcanism on Mercury, *Geophys. Res. Lett.*, *43*, 3653–3661, DOI: 10.1002/2016GL068325.

**2015:**

30. **Goudge, T. A.**, K. L. Aureli, J. W. Head, C. I. Fassett, and J. F. Mustard (2015), Classification and analysis of candidate impact crater-hosted closed-basin lakes on Mars, *Icarus*, *260*, 346–367, DOI: 10.1016/j.icarus.2015.07.026.
31. Weber, A. K., J. M. Russell, **T. A. Goudge**, M. R. Salvatore, J. F. Mustard, and S. Bijaksana (2015), Characterizing clay mineralogy in Lake Towuti, Indonesia, with reflectance spectroscopy, *J. Paleolimnol.*, *54*, 253–261, DOI: 10.1007/s10933-015-9844-4.
32. **Goudge, T. A.**, J. F. Mustard, J. W. Head, C. I. Fassett, and S. M. Wiseman (2015), Assessing the mineralogy of the watershed and fan deposits of the Jezero crater paleolake system, Mars, *J. Geophys. Res. Planets*, *120*, 775–808, DOI: 10.1002/2014JE004782.
33. Dickson, J. L., J. W. Head, **T. A. Goudge**, and L. Barbieri (2015), Recent climate cycles on Mars: Stratigraphic relationships between multiple generations of gullies and the latitude dependent mantle, *Icarus*, *252*, 83–94, DOI: 10.1016/j.icarus.2014.12.035.
34. **Goudge, T. A.**, J. F. Mustard, J. W. Head, M. R. Salvatore, and S. M. Wiseman (2015), Integrating CRISM and TES hyperspectral data to characterize a halloysite-bearing deposit in Kashira crater, Mars, *Icarus*, *250*, 165–187, DOI: 10.1016/j.icarus.2014.11.034.

**2014:**

35. **Goudge, T. A.**, J. W. Head, L. Kerber, D. T. Blewett, B. W. Denevi, D. L. Domingue, J. J. Gillis-Davis, K. Gwinner, J. Helbert, G. M. Holsclaw, N. R. Izenberg, R. L. Klima, W. E. McClintock,

S. L. Murchie, G. A. Neumann, D. E. Smith, R. G. Strom, Z. Xiao, M. T. Zuber, and S. C. Solomon (2014), Global inventory and characterization of pyroclastic deposits on Mercury: New insights into pyroclastic activity from MESSENGER orbital data, *J. Geophys. Res. Planets*, *119*, 635–658, DOI: 10.1002/2013JE004480.

36. Izenberg, N. R., R. L. Klima, S. L. Murchie, D. T. Blewett, G. M. Holsclaw, W. E. McClintock, E. Malaret, C. Mauceri, F. Vilas, A. L. Sprague, J. Helbert, D. L. Domingue, J. W. Head, **T. A. Goudge**, S. C. Solomon, C. A. Hibbitts, and M. D. Dyar (2014), The low-iron, reduced surface of Mercury as seen in spectral reflectance by MESSENGER, *Icarus*, *228*, 364–374, DOI: 10.1016/j.icarus.2013.10.023.

## 2012:

37. **Goudge, T. A.**, J. F. Mustard, J. W. Head, and C. I. Fassett (2012), Constraints on the history of open-basin lakes on Mars from the composition and timing of volcanic resurfacing, *J. Geophys. Res. Planets*, *117*, E00J21, DOI: 10.1029/2012JE004115.
38. Watters, T. R., S. C. Solomon, C. Klimczak, A. M. Freed, J. W. Head, C. M. Ernst, D. M. Blair, **T. A. Goudge**, and P. K. Byrne (2012), Extension and contraction within volcanically buried impact craters and basins on Mercury, *Geology*, *40*, 1123–1126, DOI: 10.1130/G33725.1.
39. **Goudge, T. A.**, J. W. Head, J. F. Mustard, and C. I. Fassett (2012), An analysis of open-basin lake deposits on Mars: Evidence for the nature of associated lacustrine deposits and post-lacustrine modification processes, *Icarus*, *219*, 211–229, DOI: 10.1016/j.icarus.2012.02.027.

## 2011:

40. Head, J. W., C. R. Chapman, R. G. Strom, C. I. Fassett, B. W. Denevi, D. T. Blewett, C. M. Ernst, T. R. Watters, S. C. Solomon, S. L. Murchie, L. M. Prockter, N. L. Chabot, J. J. Gillis-Davis, J. L. Whitten, **T. A. Goudge**, D. M. H. Baker, D. M. Hurwitz, L. R. Ostrach, Z. Xiao, W. J. Merline, L. Kerber, J. L. Dickson, J. Oberst, P. K. Byrne, C. Klimczak, and L. R. Nittler (2011), Flood volcanism in the northern high latitudes of Mercury revealed by MESSENGER, *Science*, *333*, 1853–1856, DOI: 10.1126/science.1211997.

## Non-Refereed Publications

1. Piatek, J. L., K. E. Vander Kaaden, **T. A. Goudge**, J. L. Molaro, and M. P. Milazzo (2020), Breaking Down Barriers: Accessibility in Planetary Science, *White Paper for Planetary Science and Astrobiology Decadal Survey 2023-2032*.
2. Diniega, S., J. Castillo-Rogez, I. Daubar, J. Filiberto, **T. Goudge**, K. Lynch, A. Rutledge, J. Rathbun, J. Scully, R. Smith, C. Richey, C. Tai Udovicic, and M. Villarreal (2020), Ensuring a safe and equitable workspace: The importance and feasibility of a Code of Conduct, along with clear policies regarding authorship and team membership, *White Paper for Planetary Science and Astrobiology Decadal Survey 2023-2032*.
3. Horgan, B., J. L. Bishop, A. Brown, W. Calvin, C. Edwards, A. Fraeman, **T. Goudge**, L. C. Kah, E. Kite, K. Lynch, R. M. Ramirez, E. Rampe, W. Rapin, M. Rice, F. Rivera-Hernández, K. Stack, J. Tarnas, A. Treiman, and C. Viviano (2020), The evolution of habitable environments on terrestrial planets: Insights and knowledge gaps from studying the geologic record of Mars, *White Paper for Planetary Science and Astrobiology Decadal Survey 2023-2032*.
4. Murchie, S. L., R. E. Arvidson, J. L. Bishop, W. M. Calvin, J. Carter, J. Christian, R. N. Clark, C. M. Dundas, B. L. Ehlmann, V. K. Fox, A. A. Fraeman, **T. A. Goudge**, B. H. Horgan, M. N. Hughes, E. K. Leask, A. S. McEwen, J. F. Mustard, M. Parente, K. E. Powell, F. P. Seelos, K. D. Seelos, J. D. Tarnas, C. E. Viviano, and J. J. Wray (2020), Maximizing the Science and

Resource Mapping Potential of Orbital VSWIR Spectral Measurements of Mars, *White Paper for Planetary Science and Astrobiology Decadal Survey 2023-2032*.

5. Brown, A. J., C. E. Viviano, and **T. A. Goudge** (2020), Mars 2020 team using Australian rocks in search for life on Mars, *Eos*, 101, DOI: 10.1029/2020EO146438.

## **Teaching**

### **Department of Geological Sciences, The University of Texas at Austin:**

Sedimentary Rocks (GEO 416M)

- Fall 2020; *voted best undergraduate course by DGS students (Knebel Teaching Award)*

Introduction to Remote Sensing for Geoscientists (GEO 471T/491)

- Spring 2021
- Spring 2020
- Spring 2019; *voted best graduate course by DGS students (Knebel Teaching Award)*

Mars Sedimentology (GEO 291)

- Spring 2016; *co-taught as postdoctoral instructor with David Mohrig*

### **Additional Teaching Experience:**

- 2014 Graduate Teaching Assistant; *Mars, Moon, and the Earth (GEOL 0050); Department of Geological Sciences, Brown University*
- 2014 Sheridan Teaching Certificate I – Reflective Teaching; *The Harriet W. Sheridan Center for Teaching and Learning, Brown University*
- 2007 – 2008 Undergraduate Teaching Assistant; *Earth's Physical Environment (APSC 151); Department of Geological Sciences and Geological Engineering, Queen's University*

## **Student Advising**

### **Postdoctoral Fellows:**

- 2020 – Present Tian Dong. *PhD at Rice University. NSF Postdoctoral Fellow.*
- 2019 – Present Gaia Stucky de Quay. *PhD at Imperial College London.*

### **Graduate Students:**

- 2020 – Present Mariel Nelson. *BA at University of California, Berkeley.*
- 2020 – Present Emily Bamber. *MSc at University of Oxford.*
- 2019 – Present Michelle Tebolt. *BA at Colgate University.*

### **Undergraduate Students:**

- 2020 – 2021 Junwoo Kim, *Environmental Science Capstone Research Experience, Dept. Geological Sciences, UT Austin. Co-advised w/ G. Stucky de Quay.*
- 2020 – 2021 Irineo Sanchez, *Honors Thesis, Dept. Geological Sciences, UT Austin.*
- 2019 – 2020 Nirvana Kaur, *Dept. Geological Sciences, UT Austin.*
- 2018 – 2020 Marianne Coholich, *Honors Thesis, Dept. Geological Sciences, UT Austin. Co-advised w/ W. Kim.*

### **Committee Membership:**

#### ***PhD:***

- Eric Hiatt, *Institute for Geophysics and Dept. Geological Sciences, UT Austin. Primary advisors M. Hesse and S. Gulick.*

- Shawn Fullmer, *Department of Geological Sciences, UT Austin. Primary advisor C. Kerans.*
- Paul Morris, *Department of Geological Sciences, UT Austin. Primary advisors J. Covault and D. Mohrig.*
- Cole Speed, *Department of Geological Sciences, UT Austin. Primary advisors Z. Sylvester and D. Mohrig.*
- Kathleen Wilson, *Department of Geological Sciences, UT Austin. Primary advisor D. Mohrig.*
- Sophie Goliber, *Institute for Geophysics, UT Austin. Primary advisor G. Catania.*
- Natalie Wolfenbarger, *Institute for Geophysics, UT Austin. Primary advisor D. Blankenship.*
- Chris Liu, *Department of Geological Sciences, UT Austin. Primary advisor D. Mohrig.*
- Dallas Dunlap, *Bureau of Economic Geology, UT Austin. Primary advisor T. Meckel.*
- Matthew Svensson, *Dept. of Earth Sciences, U. Western Ontario. Primary advisor G. Osinski.*
- Hima Hassenruck-Gudipati, *Department of Geological Sciences, UT Austin. Primary advisor D. Mohrig. PhD, 2021.*

**MSc:**

- Nicole Guinn, *Dept. Geological Sciences, UT Austin. Primary advisor J. Gardner. MSc, 2020.*

**Undergraduate Honors Thesis:**

- Laura Arnold, *Dept. Geological Sciences, UT Austin. Primary advisor D. Breecker.*
- Juanita Vargas-Londoño, *Departamento de Ciencias de la Tierra, Universidad EAFIT. Primary advisor J. F. Paniagua-Arroyave. BSc, 2020.*
- Harry Hull, *Dept. Geological Sciences, UT Austin. Primary advisor J. Snedden. BSc, 2019.*
- Jake Gearon, *Dept. Geological Sciences, UT Austin. Primary advisor M. Young. BSc, 2019.*

**PhD Qualification Exam:**

- Dimitri Voytan, *Institute for Geophysics, UT Austin. Primary advisor M. Sen. Exam 12/2021.*
- Logan Schmidt, *Dept. Geological Sciences, UT Austin. Primary advisor D. Rempe. Exam 4/2019.*

**Invited Talks**

2021	Massachusetts Institute of Technology, Chemical Oceanography, Geology, Geochemistry, and Geobiology (COG <sup>3</sup> ) Seminar
2021	Northern Arizona University, Planetary Surface Brown Bag Seminar
2020	University of California, Los Angeles/University of California, Berkeley/Jet Propulsion Laboratory, Planetary Science Seminar
2020	GSA Annual Meeting
2020	University of Western Ontario, Western Space Weekly Webinar
2020	The University of Massachusetts Amherst, Department of Geosciences Lecture Series
2020	California Institute of Technology, Geoclub Seminar
2019	Rice University, Department of Earth, Environmental and Planetary Sciences Colloquium
2019	Midwestern State University, Kimbell School of Geosciences Colloquium
2019	The University of Arizona, Lunar and Planetary Laboratory Colloquium
2019	PICO Presentation, 2019 SEPM Annual Meeting
2019	Tulane University, Department of Earth and Environmental Sciences Seminar

2018	GSA Annual Meeting
2018	McMaster University, School of Geography & Earth Sciences Seminar
2018	Queen's University, Department of Geological Sciences and Geological Engineering Seminar
2018	The University of Texas at Austin, Department of Geological Sciences Seminar
2018	Stanford University, Department of Geological Sciences Seminar
2017	AGU Fall Meeting
2017	NASA Marshall Space Flight Center, NSSTC Space Science Seminar
2017	NASA Ames Research Center, Space Science & Astrobiology Division Seminar
2017	USGS Menlo Park, Geology, Minerals, Energy and Geophysics Group Seminar
2017	Southwest Research Institute, Space Science and Engineering Division Seminar
2017	NASA Jet Propulsion Laboratory, Seminar
2017	Rice University, Sedimentology Seminar
2017	58 <sup>th</sup> Brown-Vernadsky Microsymposium
2017	The University of Texas at Austin, UT Institute for Geophysics Seminar
2017	SETI Institute, Weekly Colloquium
2016	University of Manitoba, Department of Geological Sciences Seminar
2016	The University of Texas at Austin, DeFord Lecture Series (Department of Geological Sciences Seminar)
2016	GSA Annual Meeting
2013	Massachusetts Institute of Technology, Planetary Internal Colloquium Series

### **Professional Service**

#### **To the University:**

2020 – Present	Executive Committee, <i>UT Center for Planetary Systems Habitability</i>
2019 – Present	Lead, Jackson School AGU Bridge Program proposal initiative
2018 – Present	Leadership Committee, <i>UT Geoscience Empowerment Network</i>
2018 – Present	Judge for Jackson School of Geosciences Student Research Symposium
2016 – 2018	Team member, Pop-Up Institute, <i>Understanding Planetary Habitability</i>

#### **To the Community:**

2020 – Present	Member, AGU Africa Space Science Award Committee
2016 – Present	Judge for Dwornik Award at the Lunar and Planetary Science Conference
2015 – Present	Peer Reviewer for <i>Proceedings of the National Academy of Sciences; Nature Geoscience; Geology; Nature Communications; Science Advances; Geophysical Research Letters; Earth and Planetary Science Letters; Geosphere; Scientific Reports; Journal of Geophysical Research – Planets; Journal of Geophysical Research – Earth Surface; Icarus; Astrobiology; Planetary and Space Science; Space Science Reviews; Planetary Data System (PDS)</i>
2015 – Present	Review Panelist and External/Ad Hoc Reviewer for NASA ROSES and NSF



2015 – Present	Judge for Outstanding Student Paper Award at the American Geophysical Union Fall Meeting
2021	External Reviewer for Swiss National Science Foundation
2021	Session Co-Chair at 52 <sup>nd</sup> Lunar and Planetary Science Conference
2019	Reviewer for AGU Fall Meeting Travel Grants
2014 – 2018	Lead advocate for Jezero crater paleolake as a landing site for the NASA Mars 2020 rover
2018	Program Committee for 49 <sup>th</sup> Lunar and Planetary Science Conference
2017	Session Co-Chair at 48 <sup>th</sup> Lunar and Planetary Science Conference
2014	Session Co-Chair at 2014 GSA Annual Meeting

### **Public Outreach**

2021	Guest speaker for Introduction to Astronomy and Planetary Science, Prison Education Project
2021	Guest speaker at Sun City Georgetown Nature Club
2020	Panelist, AIR Centre Roundtable: Oceans in the Solar System
2020	Guest speaker at Northwest Austin Rotary Club
2020	Guest speaker at Hot Science – Cool Talks
2019	Guest speaker at the University of Texas at Austin Undergraduate Geological Society; the Austin Geological Society; Senior University Georgetown; UT GIS Day Lightning Talks; Astronomy on Tap ATX
2018	Presenter at the 2018 AISD Science + Mathematics X Conference
2011 – 2016	Volunteer for Mars Exploration Student Data Teams (MESDT)
2011 – 2015	Vartan-Gregorian Elementary School Volunteer Science Teacher
2014	Guest speaker at University of Maryland Observatory; Skyscrapers, Inc.
2012 – 2014	Vartan-Gregorian Elementary School Volunteer Science Teacher Program Organizer
2011	Judge for Athena Science Challenge

### **First-Authored Conference Abstracts and Presentations (*past 2 years*)**

*\*Oral presentation*

*Goudge research group members: #Graduate student, †postdoctoral fellow, §undergraduate student.*

1. **\*Goudge, T. A.**, C. I. Fassett, and M. Coholich<sup>§</sup> (2021), Assessing controls on the termination of overflow floods for paleolakes on Mars, *52<sup>nd</sup> Lunar and Planetary Science Conference*, Abstract 2196.
2. **\*Goudge, T. A.**, C. I. Fassett, and M. Coholich<sup>§</sup> (2020), Assessing the controls of overflow flood termination for Mars paleolakes, *2020 GSA Annual Meeting*, Abstract 184-2 (Invited).

### **Co-Authored Conference Abstracts and Presentations (*past 2 years*)**

*Goudge research group members: #Graduate student, †postdoctoral fellow, §undergraduate student.*

1. Baum, M., R. Wordsworth, and **T. Goudge** (2021), Consequences of early ocean and shoreline deformation scenarios for Jezero crater, Mars, *52<sup>nd</sup> Lunar and Planetary Science Conference*, Abstract 2402.
2. #Bamber, E. R., **T. A. Goudge**, C. I. Fassett, and G. R. Osinski (2021), Formation of inlet valleys into crater-hosted lakes on Mars, *52<sup>nd</sup> Lunar and Planetary Science Conference*, Abstract 1793.
3. J. S. Levy, W. Cipolli, F. Ishraque, J. Johnson, L. Kuentz, I. Armstrong, B. Cvijanovich, M. Tebolt#, **T. Goudge**, C. I. Fassett, R. Parsons, and J. Holt (2021), Boulder bands on lobate debris aprons: Debris-covered glacier growth at martian mid-latitudes spans multiple glaciations, *52<sup>nd</sup> Lunar and Planetary Science Conference*, Abstract 1537.
4. #Tebolt, M. A., and **T. A. Goudge** (2021), Investigation of the depositional environment of martian sedimentary fan features, *52<sup>nd</sup> Lunar and Planetary Science Conference*, Abstract 1525.
5. Scully, J. E. C., G. Cerretti, A. Viswanathan, J. K. Steckloff, C. Richey, A. Probst, G. Poh, M. Melwani Daswani, C. L. McLeod, X. Mao, R. Lillis, N. Kumari, H. Kraus, T. Hoogenboom, H. Hay, **T. A. Goudge**, E. C. Fayolle, C. M. Elder, S. Diniega, S. Daftry, P. K. Byrne, S. M. Brooks, J. G. Blank, P. Becerra, and S. Bandyopadhyay (2021), Foreign nationals employed and studying in planetary research in the United States, and recommendations for supporting this group, *52<sup>nd</sup> Lunar and Planetary Science Conference*, Abstract 1493.
6. Schorghofer, N., J. S. Levy, **T. A. Goudge**, and M. Tebolt# (2021), High-resolution thermal environment of recurring slope lineae at Palikir crater, Mars, *52<sup>nd</sup> Lunar and Planetary Science Conference*, Abstract 1391.
7. †Dong, T., and **T. A. Goudge** (2020), Quantifying the distributions of channel geometry and channel belt properties for single-thread and braided rivers, *2020 AGU Fall Meeting*, Abstract EP015-05.
8. Vargas-Londoño, J., R. Palermo, J. F. Paniagua-Arroyave, J. Nienhuis, **T. A. Goudge**, and M. Tebolt# (2020), Exploring the spatial patterns of delta morphodynamics on Mars and Titan, *2020 AGU Fall Meeting*, Abstract EP041-02.
9. #Bamber, E. R., **T. A. Goudge**, C. I. Fassett, and G. R. Osinski (2020), Insight into erosion and lake-filling process from crater rim fluvial breaches on Mars, *2020 AGU Fall Meeting*, Abstract EP041-04.
10. #Nelson, M. D., L. Schmidt, **T. A. Goudge**, and D. Mohrig (2020), Observations of weathering and deep roots exposed by a rockfall from a limestone cut bank on the Pedernales River, TX, USA, *2020 AGU Fall Meeting*, Abstract EP052-0030.
11. †Stucky de Quay, G., **T. A. Goudge**, and C. I. Fassett (2020), Quantifying precipitation, aridity, and runoff-producing timescales using paleolakes on early Mars, *2020 AGU Fall Meeting*, Abstract P073-02.
12. Brown, A. J., **T. A. Goudge**, C. E. Viviano, and L. Kerber (2020), Formation and alteration history of the olivine-carbonate lithology at Jezero crater, *2020 AGU Fall Meeting*, Abstract P006-0004.
13. Hiatt, E., M. A. Shadab, S. P. S. Gulick, **T. A. Goudge**, and M. A. Hesse (2020), Groundwater filling times for large impact basins on early Mars and implications for the onset of post impact hydrothermal systems, *2020 AGU Fall Meeting*, Abstract P055-0011.
14. #Tebolt, M., and **T. A. Goudge** (2020), Investigating the depositional environment of sedimentary fan features on Mars using orbital stratigraphy, *2020 AGU Fall Meeting*, Abstract P065-0008.

15. Hibbitts, C., T. Dong†, **T. A. Goudge** (2020), Quantitative comparison between the probability distribution of channel belt properties on Earth and Mars, *2020 GSA Annual Meeting*, Abstract 195-6.
16. †Stucky de Quay, G., **T. A. Goudge**, and C. I. Fassett (2020), Martian paleolake morphologies as a record of ancient precipitation and aridity regimes, *2020 GSA Annual Meeting*, Abstract 249-3.
17. †Tebolt, M. A., and **T. A. Goudge** (2020), The geometry of the Tyras Vallis fan: Using stratigraphy to study depositional environment, *51<sup>st</sup> Lunar and Planetary Science Conference*, Abstract 1606. [*Conference cancelled*]
18. †Stucky de Quay, G., **T. A. Goudge**, and C. I. Fassett (2020), Precipitation and aridity constraints on early Mars from globally distributed paleolakes, *51<sup>st</sup> Lunar and Planetary Science Conference*, Abstract 1410. [*Conference cancelled*]
19. Brown, A. J., **T. A. Goudge**, and C. E. Viviano (2020), Jezero watershed mapping of olivine-carbonate lithology, *51<sup>st</sup> Lunar and Planetary Science Conference*, Abstract 1082. [*Conference cancelled*]
20. Speed, C. M., Z. Sylvester, P. P. Flaig, P. Durkin, and **T. A. Goudge** (2019), Relating the fluvial avulsion process to channel-belt stratigraphic architecture: An example from the Cretaceous Cedar Mountain Formation, Utah, *2019 AGU Fall Meeting*, Abstract EP21D-2233.
21. §Coholich, M., W. Kim, and **T. A. Goudge** (2019), Controls of martian crater size and rim geometry on outlet channel morphology: Experiment and Observation, *2019 AGU Fall Meeting*, Abstract EP21E-2200.
22. †Stucky de Quay, G., and **T. A. Goudge** (2019), Global constraints on run-off depths from open- and closed-basin paleolakes on Mars, *2019 AGU Fall Meeting*, Abstract EP21E-2203.
23. Salvatore, M. R., **T. A. Goudge**, T. Titus, J. B. Sankey, D. J. Dean, and J. Unema (2019), The Little Colorado River at Grand Falls, Arizona: A valuable terrestrial analog in investigating the rates and nature of fluvial erosion on Mars, *2019 GSA Annual Meeting*, Abstract 275-4.
24. Swartz, J. M., D. Mohrig, and **T. Goudge** (2019), Coastal River Dynamics and Morphology on the Rio Grande Delta, *34<sup>th</sup> IAS Meeting of Sedimentology*.
25. Salvatore, M. R., **T. A. Goudge**, M. S. Bramble, Y. Liu, and C. S. Edwards (2019), The composition and thermophysical character of Jezero crater and its surrounding watershed, *Ninth International Conference on Mars*, Abstract 6264.
26. Schorghofer, N., J. S. Levy, **T. A. Goudge**, and M. Tebolt (2019), Thermal environment of recurring slope lineae at Palikir crater, Mars, and its implications for volatiles, *Ninth International Conference on Mars*, Abstract 6150.
27. Brown, A. J., **T. A. Goudge**, C. E. Viviano (2019), Correlations, causations and consequences of Nili Fossae olivine-carbonate, *Ninth International Conference on Mars*, Abstract 6018.
28. Liu, Y., **T. Goudge**, and M. R. Salvatore (2019), Large localized carbonate exposures in northeast Tyrrhena Terra, Mars, and possible formation mechanisms, *AOGS 16<sup>th</sup> Annual Meeting*, Abstract PS03-A003.

## **Field Experience**

2013 – Present      Rio Grande River, TX; Ghost Ranch, NM; Texas Gulf Coast; Coos Bay, OR; Trinity River, TX; Green River, UT; Wax Lake Delta, LA; North Loup River, NE; Meriden, CT; Bavaria, Germany

## **Professional Associations**

2012 – Present	Geological Society of America (GSA)
2011 – Present	American Geophysical Union (AGU)
2011 – Present	Geological Association of Canada (GAC)