Nick Wagner

770-713-5459 ⋄ nicholas_wagner@brown.edu

Education

Ph.D. 2019-2024 — **Baylor University**
Dissertation: Deformation of the Martian Lithosphere Through Time — Advisor: Dr. Peter James

B.Sc. 2019 — **Colorado School of Mines**
Major: Geophysics
Minor: Computer Science Specializing in Data Science

Work Experience

2024-Present — **Brown University**
Postdoctoral Research Associate

2019-2024 — **Baylor University**
Research & Teaching Assistant

2018 - 2019 — **EDCON-PRJ**
Data Processing Technician

Research Experience

2023 — **NASA/JPL Planetary Science Summer School**
Telecomms Chair, Gravity Science Lead — *New Frontiers Class Titan Orbiter Concept*

2022 — **InSight**
Student Observer of STM25 — *InSightSeer Program*

2021 — **Keck Institute for Space Studies Workshop**
Study Participant — *Next-Generation Planetary Geodesy*

2021 — **NASA/JPL**
Research Intern — *Advisor: Dr. Ryan Park*

2019 — **United States Geological Survey**
Student Contractor

2018 — **Lunar and Planetary Institute**
Research Intern — *Advisor: Dr. Jon Kay & Dr. Paul Schenk*

2018 - 2019 — **Colorado School of Mines**
Undergraduate Research Fellow — *Advisor: Dr. Jeffery Shragge*

Publications

In Prep

Wagner, N., James, P., McGovern, P. The Argument for a Geodynamically Controlled Emplacement of Pavonis Fossae

In Review

Wagner, N. & James, P. New Geophysical Constraints for Intrusive Magmatism at Large Martian Volcanoes: Implications for Volatile Outgassing *Journal of Geophysical Research: Planets*

2024

Seltzer, C., Bott, K., Brouwer, G., Burtt, D., Gentgen, C., Lien, R., Abbate, J., Head, T., Hill, J., Gandarillas, V., Green, A., Larson, J., Montiel, N., Moreno, R., Mullikin, E., Radzom, B., **Wagner, N.**, Wijesekara, P., Nash, A., Keane, J. THUNDER: A Titan Orbiter New Frontiers Mission Concept *Planetary Science Journal*. https://iopscience.iop.org/article/10.3847/PSJ/ad973e/meta

Wagner, N., James, P., Ermakov, A., Sori, M. Evaluating the Use of Seasonal Surface Displacements and Time-Variable Gravity to Constrain the Interior of Mars. *Journal of Geophysical Research: Planets*. https://doi.org/10.1029/2023JE008053

2022

Xiao, H., Stark, A., Schmidt, F., Hao, J., Steinbrgge, G., **Wagner, N.**, Su, S., Cheng, Y., Oberst, J. Spatio-temporal level variations of the Martian Seasonal North Polar Cap from co-registration of MOLA profiles. *Journal of Geophysical Research: Planets*. https://doi.org/10.1029/2021JE007158

Awards and Fellowships

Graduate School Travel Award — **Baylor Graduate School**
2020-2024

Graduate School Fellow — **Baylor Graduate School Fellowship**
2019-2024

Outstanding Teaching Assistant — **Baylor Geosciences Department**
2022

Texas Space Grant Fellow — **Texas Space Grant Consortium**
2020

Teaching Experience

2019 - 2024 — **Baylor University**
Teaching Assistant

GEO1401: Earthquakes and Natural Hazards
GEO3319: Intro to Geophysics
GEO5328: Geodynamics

2019 — **Colorado School of Mines**
Teaching Assistant

GPGN268: Geophysical Data Analysis

Conference Abstracts (* indicates presenting author)

2025

Wieczorek, M., Alvarez-Candal, M., Angrisani, M., Attree, N., Bhattacharya, A., Blewett, D., Broquet, A., Burkhard, L., Cascioli, G., Collins, G., Cone, K., Crameri, F., Denton, A., Elkins-Tanton, L., Fa2, W., Filiberto, J., Flahaut, J., Frigeri, A., Guimond, C., Guray Hatipo, Y., Jacobson, S., Kim, D., Lucas, A., Maia, J., Mandon, L., Martinot, M., Miljkovic, K., Montesi, L., Nawal, A., Oran, R., Pan, L., Park, R., Putzig, N., Rodriguez, S., Roos-Serote, M., Root, B., Ruedas, T., Schmidt, F., Snape, J., Tai Udovicic, C., Tosi, N., van der Wal, w., **Wagner, N.** *Planetary Research - A Diamond Open Access Journal For Planetary Science* (LPSC)

Wagner, N.*, James, P. *Higher Geophysical Evidence for High I/E Ratios at Large Martian Volcanoes* (LPSC)

2024

Wagner, N.*, James, P., Ermakov, A., Sori, M. *Using Seasonal Surface Displacements and Time-Variable Gravity to Constrain the Interior of Mars* (Mars Geophysics After InSight)

North, A.*, James, P., **Wagner, N.**, Moriarty, D., Kiefer, W., Siegler, M. *Crustal Context of the Moon's Gruithuisen Domes* (LPSC)

Wagner, N.*, James, P. *Higher Intrusive Magma Volumes Found at Olympus Mons from Gravity and Topography Data* (LPSC)

2023

Wagner, N.*, James, P., Ermakov, A., Sori, M. *New Estimates of Seasonal Surface Displacements and Time Variable Gravity on Mars* (LPSC)

North, A.*, James, P., **Wagner, N.**, Moriarty, D. *Gravity Constraints on Bulk Density and Igneous Intrusion at Gruithuisen Domes* (LPSC)

Moriarty, D.*, James, P., North, A., **Wagner, N.** *Evidence for Widespread Silicic Lithologies Across the Gruithuisen-Mairan Region* (LPSC)

Morris, J., Schurmeier, L.*, **Wagner, N.**, Baker, S., Bill, C., Mohanna, S., Roth, N., Sanderson, H., Sridhar, S., Woodley, S., Daubar, I., Fernando, B., Newman, C., Panning, M. *InSightSeers: Peering into Invited Student Participation of a Mission Science Team Meeting* (LPSC)

2022

Wagner, N.*, James, P., Ermakov, A., Sori, M. *Quantifying Lithospheric Deflection Caused by Seasonal Mass Transport from the Polar Layered Deposits on Mars* (LPSC)

Wagner, N.*, Park, R., James, P. *A Geophysical Investigation of the Compensation State of Hellas Planitia* (LPSC)

Sori, M.*, Bramson, A., Byrne, S., James, P., Ojha, L., **Wagner, N.** *Gravity Science Constrains the Presence and Volume of Mid-Latitude Ice Sheets on Mars* (LPSC)

Keane, J.*, Sori, M., Ermakov, A., Austin, A., Bapst, J., Berne, A., Bierson, C., Bills, B., Boening, C., Bramson, A., D'Amico, S., Denton, A., Evans, A., Hemingway, D., Hernandez, S., Hogstrom, K., Izquierdo, K., James, P., Johnson, B., Kahre, M., Lau, H., Navarro, T., Neveu, M., Nimmo, F., O'Rourke, J., Ojha, L., Paik, HJ., Park, R., Rosen, P., Simons, M., Smith, D., Smrekar, S., Soderlund, K., Steinbrgge, G., Tikoo, S., Vance, S., **Wagner, N.**, Weber, R., Zebker, H., Zuber, M. *Next-Generation Planetary Geodesy: Results from the 2021 Keck Institute for Space Studies Workshops* (LPSC)

Sori, M. M.*, Ermakov, A. I., Keane, J. T., Bierson, C. J., Bills, B. G., Bramson, A. M., D'Amico, S., Evans, A. J., Hemingway, D. J., Izquierdo, K., James, P. B., Johnson, B. C., Kahre, M. A., Navarro, T., O'Rourke, J. G., Ojha, L., Paik, H. J., Park, R. S., Simons, M., Smith, D. E., Smrekar, S. E., Soderlund, K. M., Steinbrgge, G., Tikoo, S. M., Vance, S. D., **Wagner, N. L.**, Weber, R. C., Zebker, H. A. *Next-Generation Planetary Geodesy: Results from the 2021 Keck Institute for Space Studies Workshops* (Low-Cost Science Mission Concepts for Mars Exploration)

2021

Wagner, N.*, James, P. *Evaluating Magma Ascent at Pavonis Mons, Mars Using Stress from Flexure* (LPSC)

2019

Wagner, N.*, Kay, J., Schenk, P. The Orientation of the Bladed Terrain Feature in Tarturus Dorsa, Pluto and Possible Reorientation of Pluto (LPSC)

2018

Wagner, N.*, Kay, J., Schenk, P. Study of the Orientation of the Bladed Terrain Feature in Tartarus

Dorsa, Pluto (AGU)

Mentorship

Allie North — **Baylor Undergraduate**
Gravity survey of silicic volcanism on the Moon — *2022-Present*

Skylar Hoover — **Baylor Undergraduate**
Magnetotelluric survey of Kentland Crater, Indiana — *2022-2023*

Outreach & Seminars

Total Solar Eclipse — **April 8th, 2024**
Mars: Dead or alive? — *Baylor University*

Special Geodesy Seminar — **July 19th, 2024**
Next Generation Martian Geodesy: What Could The Seasonal Polar Caps Tell Us About The Martian Interior? — *NASA Goddard*

Solid-Earth Seminar — **October 11th, 2024**
Martian Geophysics and Geodesy: Insights into Volcanism and Planetary Structure — *Georgia Tech*

Scientific Service

2021-2024 — **NASA Grant Review Panels**
Executive Secretary — *DALI, RIA, MDAP*

2025 — **AGU: Geophysical Research Letters**
Journal Reviewer

2022-2025 — **AGU: JGR-Planets**
Journal Reviewer

2023 — **Elsevier: Icarus**
Journal Reviewer