

UNA GAYLIN SCHNECK

Title – Visiting Scholar

Affiliation – Cornell Center for Astrophysics and Planetary Science, Cornell University, Ithaca, NY

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EDUCATION

Massachusetts Institute of Technology	Cambridge, MA
Ph.D., Planetary Science	2026
University of California, Los Angeles	Los Angeles, CA
B.S. <i>Honors</i> , Geophysics & Space Physics (Valedictorian)	2018

RESEARCH INTERESTS

planetary science • geomorphology • Mars • Titan • icy moons • remote sensing • numerical modeling • landscape ecology • fluid dynamics • glacial landscapes • river & coastal processes

AWARDS & HONORS

MathWorks Science Fellowship	2025-2026
AGU Planetary Science Section Student Travel Award	2024
National Science Foundation Graduate Research Fellowship	2022-2025
Dean of Science Fellow at MIT	2020-2022
Valedictorian of Earth, Planetary, and Space Physics, UCLA	2018
Eugene B. Waggoner Undergraduate Scholarship	2018

PUBLICATIONS

***h*-index: 4 | *i10*-index: 3 | CITATIONS: 282 | ORCID: 0000-0003-0048-5143**

[7] **Schneck, U. G.**, Ashton, A. D., Lora, J. M., Birch, S. P. D., Detelich, C. E., Curcic, M., Hayes, A. G., Perron, J. T., *under review* “Waves and tides could mobilize sediment in Titan’s hydrocarbon lakes”

[6] Detelich, C. E., **Schneck, U. G.**, Palermo, R. V., Steckloff, J., Ashton, A. A., Perron, J. T., 2026 “Modeling the Seasonality of Wind-Driven Hydrocarbon Waves on Titan’s Polar Lakes”. *Journal of Geophysical Research: Planets*. 131 (5) e2026JE009693.

[5] **Schneck, U. G.**, Detelich, C. E., Curcic, M., Ashton, A. A., Hayes, A. H., Perron, J. T., 2026 “Modeling Wind-Driven Waves on Other Planets: Applications to Mars, Titan, and Exoplanets”. *Journal of Geophysical Research: Planets*. 131 (4) e2025JE009490.

- [4] Birch, S. P. D., Palermo, R. V., **Schneck, U. G.**, Ashton, A., Hayes, A. G., Soderblom, J. M., Mitchell, W. H., Perron, J. T., 2025. “Detectability of Coastal Landforms on Titan with Cassini RADAR” *Journal of Geophysical Research: Planets*, 130, e2024JE008737.
- [3] Pinchuk, P., Margot, J., Greenberg, A. H., Ayalde, T., Bloxham, C., Boddu, A., Gerardo, L., Cliffe, M., Gallagher, S., Hart, K., Hesford, B., Mizrahi, I., Pike, R., Rodger, D., Sayki, B., **Schneck, U. G.**, Tan, A., Xiao, Y., and Lynch, R. S., 2019. “A Search for Technosignatures from TRAPPIST-1, LHS 1140, and 10 Planetary Systems in the Kepler Field with the Green Bank Telescope at 1.15–1.73 GHz” *The Astronomical Journal*. 157 (122).
- [2] Howard, T. A., DeForest, C. E., **Schneck, U. G.**, and Alden, C. R., 2017. “Challenging Some Contemporary Views of Coronal Mass Ejections. II: The Case for Absent Filaments” *The Astrophysical Journal*. 834 (86)
- [1] Yu, H. C., Sloan, J.L., Scharer, G., Brebner, A., Quintana, A.M., Achilly, N.P., Manoli, I., Coughlin, C.R., Geiger, E.A., **Schneck, U. G.**, Watkins, D., Suormala, T., Van Hove, J.L., Fowler, B., Baumgartner, M.R., Rosenblatt, D.S., Venditti, C.P., and Shaikh, T.H., 2013. “An X-Linked Cobalamin Disorder Caused by Mutations in Transcriptional Coregulator HCFC1”. *The American Journal of Human Genetics*. 93 (3): 506-514

PRESENTATIONS

Invited Talks

- *Surfing the Alien Seas: The Dynamics of Waves in Titan’s Lakes*. Coastal Ocean Fluid Dynamics Laboratory (COFDL) Talk, 2026.
- *Waves in Alien Seas*. Geomorphic Processes Across Planetary Surfaces, AGU 2024
- *Modeling Wave Action on the Shores of Titan’s Lakes*. Planetary Lunch Bunch, Brown University 2023
- *New Insights on Flux Transfer at the Magnetopause*. EPSS Space Physics Seminar, UCLA 2020
- *Something New Under the Sun (or at least in the solar wind): The effect of dust on the IMF and Earth*. EPSS Space Physics Seminar, UCLA 2019

Lead Contributor

- *Confirmation of a Callisto Subsurface Ocean Using Bayesian Inference*. Icy Moons: From Surfaces to Interiors and the Lab, LPSC 2024
- *A Bayesian Approach to the Interior Sounding of Callisto*. Ice and Ocean Worlds: Geology, Oceanography, Chemistry, and Habitability, AGU 2023
- *Sediment Entrainment by Waves and Tides on Titan*. Tangerine Dreams: Titan’s Diverse Environments, AGU 2022
- *Testing the urKREEP Hypothesis with Eucrites*. Los Angeles Basin Earth and Planetary Science Student Research Symposium 2016
- *Eruptive Prominence Evolution at Great Distances from the Sun*. Laboratory for Atmospheric and Space Physics REU 2015

SCHNECK CURRICULUM VITAE

ACADEMIC & PROFESSIONAL EXPERIENCE

Cornell University	Ithaca, NY
<i>Cornell Center for Astrophysics and Planetary Science</i>	2026
• Visiting Scholar	
Massachusetts Institute of Technology	Cambridge, MA
<i>Department of Earth, Atmospheric, and Planetary Sciences</i>	2020-2026
• Graduate student advised by Professor J. T. Perron • Ph.D. Thesis: <i>The Coastal Geomorphology of Titan's Lakes & Seas</i>	
University of California, Los Angeles	Los Angeles, CA
<i>Department of Earth, Planetary, and Space Physics</i>	2018-2020
• Research Associate supervised by Professor C. T. Russell	
NASA Lyndon B. Johnson Space Center	Houston, TX
<i>Astromaterials Research and Exploration Science Division</i>	2017
• Planetary geochemistry intern advised by J. W. Boyce	
Southwest Research Institute	Boulder, CO
<i>Solar Physics Division</i>	2015-2016
• Undergraduate intern advised by T. A. Howard	
University of California, Los Angeles	Los Angeles, CA
<i>Department of Earth, Planetary, and Space Physics</i>	2018
• Undergraduate student advised by Professor C. T. Russell • B.S. Honors Thesis: <i>Stopping a Charging Elephant: The Formation and Fate of Interplanetary Magnetic Field Enhancements</i>	

TEACHING/MENTORING EXPERIENCE

MIT Summer Research Program	Summer 2025
<i>Research Supervisor</i>	
• Program description: undergraduate summer research program that aims to increase the representation of minority students in engineering and science at MIT • Student project title: <i>River Basin Reorganization as a Driver of Aquatic Animal Speciation</i>	
MIT	
<i>Teaching Assistant</i>	
• Essentials of Planetary Science • Geomorphology	Fall 2024 Fall 2025
Kaufman Teaching Certificate	Fall 2025
• Description: evidence-based teaching, course and lesson design, assessment, inclusive classroom practices, and microteaching	

SCHNECK CURRICULUM VITAE

PROFESSIONAL ACTIVITIES

SPACE MISSIONS

- *Mars 2020 Perseverance (Mastcam-Z)* – Postdoc collaborator
- *Dragonfly* – Research Associate

SCIENTIFIC CONFERENCES

- (Early Career Convener) AGU 2023: Surface Processes Across the Solar System

PEER REVIEWER

- (student reviewer) *Geophysical Research Letters* (x2)

PUBLIC OUTREACH

- Created lunar geochemistry poster featured on *The Big Bang Theory: The Geology Elevation (episode #1009)*
- Letters to a Pre-Scientist (LPS) 2021-2022
- SPLASH 2021: “The Search for Extraterrestrial Life”
- STEM Week (Boston 826) 2021: “The Astrobiological Potential of Icy Satellites”

OPEN-SOURCE PROJECTS

- **PLANETWAVES**: numerical model of wind-driven waves that can be applied to any planet
- **PYDAR**: access and manipulation of Cassini RADAR data for the flybys of Saturn’s moon Titan
- **NYAMI**: estimating hydraulic geometry from satellite imagery

LAST UPDATED: 10/2026