EVA L. SCHELLER

Email: eschelle@stanford.edu ♦ Phone: 626-491-8042
Website: https://evascheller.com

EDUCATION

California Institute of Technology
PhD in Geological and Planetary Sciences — 2022
- Primary advisors: Prof. Bethany Ehlmann, Prof. John Grotzinger, Prof. John Eiler

M.Sc. in Geology — 2020

Copenhagen University
B.Sc. in Geology-Geoscience — 2017
- Bachelor's thesis project with Prof. Tod E. Waight

California Institute of Technology
Caltech study abroad program of fall term — Fall 2015

MISSION EXPERIENCE

Mars 2020 Return Sample Science Team member — 2022 – 2025
Mars 2020 SHERLOC Payload Uplink/Downlink Lead — **2021 – 2025**
SHERLOC Science Team collaborator — 2020 – 2025
Mars 2020 Mastcam-Z Payload Downlink Lead — 2021 – 2022
Sample Analysis at Mars Science Team collaborator — 2019 – 2022
CRISM Science Team collaborator — 2017 – 2022
Mastcam-Z Science Team collaborator — 2017 – 2022
Mars 2020 Strategic Process Planning Lead — **2020 – 2021**
Mars 2020 Team Mapping Effort Lead — **2019 – 2020**
Mars 2020 NE Syrtis Landing Site Working Group collaborator — 2017–2018
Mars 2020 Science Team collaborator — 2017– 2025

PROFESSIONAL EXPERIENCE

Stanford University — 2025 – Present
Assistant Professor

Matter Intelligence — 2025 – Present
Scientific Advisor/ academic collaborator

Massachusetts Institute of Technology — 2022 – 2025
Heising-Simons 51 Pegasi B Postdoctoral Fellow

California Institute of Technology — 2017 –2022
NASA Earth and Space Science Fellow

Sustainable Global — Summer 2020
Technical research fellow

Natural History Museum of Denmark, Copenhagen University — 2016-2017
Undergraduate researcher at Section of Geobiology and Mineralogy

Ramboll/Environ — 2016-2017
Student intern

Caltech Summer Undergraduate Research Fellowship — Summer 2016
Undergraduate researcher in the Stolper Group

Geological Survey of Denmark and Greenland — 2014-2015

Assistant geological mapper to the Quarternary mapping of Denmark

GRANTS, FELLOWSHIPS, AND AWARDS

Heising-Simons Foundation 51 Pegasi b Fellowship	**2022**
MIT Distinguished Postdoc Program (finalist, but then declined)	2022
John W. Jarve Seed Fund for Science Innovation	**2021**
(main proposal contributor but not listed as Co-I due to postdoctoral associate status)	
NASA Group Achievement Award, SHERLOC	2021
NASA Group Achievement Award, Mars 2020 mission	2021
NASA Earth and Space Science Fellowship	2018
Henry Shaws Grant for study abroad	2015
Julie Marie Vinter Hansens Grant for study abroad	2015
Copenhagen University Internationalization Grant for study abroad	2015
Marie og M. B. Richters Grant for study abroad	2015
Hotelejer Anders Månsson og hustrus Grant for study abroad	2015
Danske Bank Award for Nærum high school valedictorian	2013
Volunteer Award for services to the Red Cross	2013

PROFESSIONAL SERVICE AND AFFILIATIONS

NASA Review panel	Fall 2025
Workshop for Early Career Geoscience Faculty	Summer 2025
Reviewer for *Geochemical Perspective Letters*	Winter 2024
Astrobiology Ideation Factory	Summer 2023
Reviewer for *Nature Astronomy*	Summer 2022
Reviewer for *Earth and Planetary Science Letters*	Spring 2022
Reviewer for NASA research proposals	Winter 2022
Reviewer for *Nature Geoscience*	Winter 2022
Keck Institute of Space Sciences – Revolutionizing Access to the Martian Surface Workshop	Spring 2021
Lunar and Planetary Science Conference Dwornik judge	Winter 2021
Reviewer for *Icarus*	Summer 2020
Keck Institute of Space Sciences: Graduate student affiliate	2018 – 2022
American Geophysical Union	2020 – Present
Sudbury Impact Field School	Fall 2019
Geological Society of America member	2018 – 2019
Geological Society of Denmark member	2014 – 2017

PUBLICATIONS

(*) I contributed part of main discoveries, (**) I acted as advisor on this project

Submitted

Scheller, E. L. et al. (submitted). Mars' Missing Carbonates, ***Submitted for Science.***

Published

21. Jakubek, R. (…) **Scheller, E. L.** et al. (2025). Spectral Background Calibration of Scanning Habitable Environments with Raman and Luminescence for Organics and Chemicals (SHERLOC) Spectrometer Onboard the Perseverance Rover Enables Identification of a Ubiquitous Martian Spectral Component. ***Applied Spectroscopy,*** 79, 904-918.
20. Adams, D. (…) **Scheller, E. L.** et al. (2025). Episodic warm climates on early Mars primed by crustal hydration, ***Nature Geoscience***, 18.
19. Scheller, E. L. et al. (2024) Inorganic interpretation of luminescent materials encountered by the

Perseverance rover on Mars. ***Science Advances***, 10 (39).

18. (*****)Bosak, T., Shuster, D. L., **Scheller, E. L.** et al. (2024). Astrobiological Potential of Rocks Acquired by the Perseverance Rover at a Sedimentary Fan Front in Jezero Crater, Mars, ***AGU Advances,*** 5.
17. Phua, Y. (…) **Scheller, E. L.** et al. (2024). Characterizing Hydrated Sulfates and Altered Phases in Jezero Crater Fan and Floor Geologic Units. ***JGR Planets,*** 129.
16. Siljestrom, S. (…) **Scheller, E. L.** et al. (2024). Evidence of Sulfate-Rich Fluid Alteration in Jezero Crater Floor, Mars, ***JGR-Planets***, 129.
15. Wogsland, B. V. (…) **Scheller, E. L.** et al. (2023). Science and Science-Enabling Activities of the SHERLOC and WATSON Imaging Systems in Jezero crater, Mars, ***Earth and Space Science***, 10 (11).
14. Sharma, S. (…) **Scheller, E. L.** et al. (2023). Diverse organic-mineral associations in Jezero crater, Mars. ***Nature***, 619, 724-732.
13. **Scheller, E. L.**, Ingalls, M., Eiler, J., Grotzinger, J., and Ryb, U. (2023). The mechanisms and stable isotope effects of transforming hydrated carbonate into calcite pseudomorphs. ***Geochemica Cosmochemica Acta***, 354, 146-164.
12. (*)Corpolongo, A. (…) **Scheller, E. L.** et al. (2023). SHERLOC Raman mineral detections of the Mars 2020 Crater Floor Campaign. ***JGR Planets***, 128, e2022JE007455.
11. **Scheller, E. L.**, Razzell-Hollis, J., et al. (2022). Aqueous alteration processes and implications for organic geochemistry in Jezero crater, Mars. ***Science***, 378, doi: 10.1126/science.abo5204.
10. Bell, J. (…) **Scheller, E. L.** et al. (2022). Geological and Meteorological Imaging Results from the Mars 2020 Perseverance Rover in Jezero Crater. ***Science Advances***, 8, doi: 10.1126/sciadv.abo4856
9. (*)Farley, K. (…) **Scheller, E. L.** et al. (2022). Aqueously-altered igneous and sedimentary rocks on the floor of Jezero crater, Mars. ***Science***, doi: 10.1126/science.abo2196.
8. Razzell-Hollis, J. (…) **Scheller, E. L.** et al., (2022). A Deep-Ultraviolet Raman and Fluorescence Spectral Library of 62 Minerals for the SHERLOC instrument onboard Mars 2020. ***Planetary and Space Science*** 209, doi: 10.1016/j.pss.2021.105356.
7. **Scheller, E. L.**, Grotzinger, J., Ingalls, M. (2021). Guttulatic calcite: A carbonate microtexture that reveals frigid formation temperatures. ***Geology.*** doi: 10.1130/G49312.1
6. **Scheller, E. L.**, Swindle, C., Grotzinger, J., Barnhart, H., Bhattacharjee S., Ehlmann, B. L., Farley, K., Fischer, W. W., Greenberger, R., Ingalls, M., Martin, P. E., Osorio-Rodriguez, D., and Smith, B. P., (2021). Formation of magnesium carbonates on Earth and implications for Mars. ***JGR: Planets*** 126, e2021JE006828
5. (**)Gao, A. F. (…), **Scheller, E. L.** et al. (2021). Generalized Unsupervised Clustering of Hyperspectral Images of Geological Targets in the Near Infrared. ***IEEE Perception Beyond the Visible Spectrum workshop series (PBV)***.
4. **Scheller, E. L.**, Ehlmann, B. L., Hu, R., Adams, D., Yung, Y. (2021). Long-term drying of Mars by sequestration of ocean-scale volumes of water in the crust. ***Science***, 372, 56-62.
3. (*)Stack, K. M. (…) **Scheller, E. L.** et al. (2020). Photogeologic Map of the Perseverance Rover Field Site in Jezero Crater Constructed by the Mars 2020 Science Team. ***Space Science Reviews*** 216, 127.
2. **Scheller, E. L.** and Ehlmann, B. L. (2020). Composition, Stratigraphy, and Geological History of the Noachian Basement Surrounding the Isidis Impact Basin. ***JGR: Planets*** 125, e2019JE006190.
1. **Scheller, E. L.**, Dickson, A. J., Canfield, D. E., Korte, C., Kristiansen K. K., Dahl, T. W. (2018). Ocean redox conditions between the snowballs – Geochemical constraints from Arena Formation, East Greenland. ***Precambrian*** 319, 173-186.

INVITED TALKS

Seminar, UC Santa Cruz	2025
Seminar, Harvard University	2024
Seminar, Yale University	2024
Seminar, Brown University	2024
Seminar, Stanford University	2024
Seminar, University of Texas at Austin	2023

Seminar, MIT (Planetary Sciences) 2023
Seminar, MIT 2023
Seminar, Penn State 2022
Seminar, Stony Brook University 2022
Seminar, Georgia Tech 2022
Seminar, University of Pennsylvania 2022
Seminar, Brown University 2022
Conference talk, AGU Fall Meeting (carbonates in modern environments) 2021
Seminar, University of Chicago 2021
Seminar, University of Southern California 2021
Lecture, Astronomical Society of Denmark 2021
Seminar, Lunar and Planetary Science Institute 2021
Seminar, NASA Goddard Institute for Space Studies 2021
Seminar, UC Santa Cruz 2021

FIRST AUTHOR TALKS

Scheller, E. L. et al. Inorganic Interpretation of Luminescent Materials in Jezero Crater's Floor and Delta on Mars. ***LPSC***, Abstract# 1335 2024

Scheller, E. L. et al. SHERLOC investigations of the Jezero delta reveals preservation of organic compounds, ***AGU Annual Meeting,*** Abstract# 1068963 2022

Scheller, E. L. et al. First-Results from the Perseverance SHERLOC Investigation: Aqueous Alteration Processes and Implications for Organic Geochemistry in Jezero Crater, Mars, ***LPSC 53,*** Abstract# 1652 2022

Scheller, E. L. et al., Crustal Hydration of Ocean-scale Water Volumes Controlled Martian Climate and Habitability, ***AGU Annual Meeting***, Abstract# 684085. 2020

Scheller, E. L. et al., Crustal Hydration of Ocean-scale Water Volumes Controlled Martian Climate and Habitability, ***DPS Annual Meeting***, Abstract# 308.05. 2020

Scheller, E. L. et al., Clumped Isotope Thermometry of Hydrated Carbonate Transformation ***Goldschmidt (cancelled due to COVID-19)***, Abstract# 20200016640. 2020

Scheller, E. L. et al., The History of Water on Mars as constrained Through Hydrogen Isotopes, ***Caltech Planetary Science Seminar.*** 2020

Scheller, E. L. et al., The History of Water on Mars as Constrained Through Hydrogen Isotopes ***LPSC 51 (cancelled due to COVID-19)***, Abstract# 2326. 2020

Scheller, E. L. et al., Clumped Isotope Thermometry of Hydrated Carbonate Transformation ***Caltech Geoclub***. 2019

Scheller, E. L. and Ehlmann, B. L., Composition and Impact Deformation of Noachian Basement West of Isidis, ***Mastcam-Z Team Meeting***. 2019

Scheller, E. L. and Ehlmann, Isidis Megabreccia Composition, Size, and Formation History, ***LPSC 50***, 2019, Abstract #2033. 2019

Scheller, E. L. and Ehlmann, B. L. Composition and Impact Deformation of Noachian Basement Surrounding the Isidis Basin, Mars, ***GSA Annual Meeting,*** Abstract #322778. 2018

Scheller, E. L. et al., Composition, Impact Deformation, and Geological History of Noachian Basement in the Surrounding of the Isidis Impact Basin, ***Mars 2020 4th Landing Site Workshop***. 2018

Scheller, E. L. and Ehlmann, B. L. , Composition and Impact Deformation of Noachian Basement West of Isidis, ***LPSC 49***, Abstract #1385. 2018

Scheller, E. L. et al. Ocean Redox Conditions between the Snowballs – Geochemical Constraints from Arena Formation, East Greenland. ***Goldschmidt***, Abstract #2018002204. 2018

FIRST AUTHOR POSTERS

Scheller, E. L. et al. Key perseverance sampling locations for the Ancient Martian Crust and implications for Mars Science, ***LPSC 55*** 2024

Scheller, E. L. et al. Inorganic Interpretation of Luminescent Materials in Jezero Crater's Floor and Delta on Mars. ***AGU Annual Meeting***, Abstract# 3225 2023

Scheller, E. L. et al., How hydrated carbonate pseudomorphs track frigid paleoclimatic conditions: Paragenesis and clumped isotope systematics, ***AGU Annual Meeting,*** Abstract# 806224 2021

Scheller, E. L. et al., Crustal Hydration of Ocean-scale Water Volumes Controlled Martian Climate and Habitability, ***LPSC 52.*** 2021

Scheller, E. L. et al., A Novel Approach To Integrated Time Series Analysis of Anthropogenic Gas Emissions, ***AGU Annual Meeting***, Abstract # 683693. 2020

Scheller, E. L. and Ehlmann, B. L., Stratigraphy and Geological History of the Noachian Basement on the Western Rim of Isidis Basin, ***LPSC 50***, Abstract #1515. 2019

Scheller, E. L. and Waight, T., Mineral Chemistry of the Hohonu Dike Swarm. 2017
Nordic Magma Chamber Processes Meeting

TEACHING

Stanford professor, Introduction to Mineralogy	Coming 2027
Stanford professor, Planetary Optical Remote Sensing	Coming 2026
Caltech Teaching Assistant, Ge151: Planetary Surfaces	2019
Caltech Teaching Assistant, Ge157c: Remote Sensing for Environmental and Geological Applications	2018
My Academy professional tutor for college, high school, and middle school	2014-2017
Taught maths, chemistry, physics, English, Danish, and natural geography	
Nærum High School professional chemistry A levels tutor	2012 - 2013

OUTREACH AND VOLUNTEER WORK

Expert interviews at newspapers (Times Magazine, MIT Review, National Geographic, BBC, ABC, etc.), TV news stations (BBC World & Danish National News), podcasts (Strange New Worlds, We Martians), and youtube videos (NASA – ask a scientist series, JPL, geopop)	2021 – Present
LPSC: LPSC Live outreach panelist	2022
Caltech: Convocation speaker	2021
Scholastic: Science advisor to the Real World Math: Space Exploration book by Scholastic	2020 – Present
Caltech Graduate Student Council member (international student council and the athletics committee)	2019 – Present
Caltech: Volunteer online tutor	2020 – Present
Caltech: International orientation leader	Fall 2020
Future Engineers: Judge for the Mars 2020 naming contest	2019
Letters to a Pre-scientist: Mentor of middle schoolers from low-income families	2018
Danish Youth Science Association: Organizer of lecture series in science topics	2015-2016
Danish Red Cross: Founder and manager of the youth section of Red Cross Lyngby	2011-2014