

## Viranga Perera

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### EMPLOYMENT

*Assistant Professor of Instruction*, Department of Physics Jan. 2022 –  
The University of Texas at Austin, TX.

*Postdoctoral Researcher*, Purdue Polytechnic Institute Aug. 2020 – Dec. 2021  
Purdue University, West Lafayette, IN.

*Postdoctoral Researcher*, APL/Department of Earth & Planetary Sciences Jan. 2018 – Jun. 2020  
Johns Hopkins University, Baltimore, MD.

*Teacher (Part-Time)*, Physics Jan. 2013 – Jun. 2013  
Georgiana Bruce Kirby Preparatory School, Santa Cruz, CA.

### EDUCATION

*Doctor of Philosophy*, Geological Sciences (Planetary Science & Science Education) Dec. 2017  
Arizona State University, Tempe, AZ.

*Master of Science*, Earth Sciences (Planetary Science) Mar. 2014  
University of California, Santa Cruz, CA.

*Bachelor of Science*, Physics & Aerospace Engineering (Summa Cum Laude) Jun. 2010  
California State Polytechnic University, Pomona, CA.

### COURSES TAUGHT

- *Engineering Physics I & II* (PHY 303K & PHY 303L)
- *General Physics I & II* (PHY 317K & 317L)
- *Mechanics, Heat, and Sound* (PHY 302K)
- *Our Moon: From Imagination to Exploration* (NSC 110H [UT-Austin] & AS.270.127 [JHU])
- *Laboratory for PHY 302L, 303L & 317L* (PHY 105N)
- *Elementary Physics for Nontechnical Students* (PHY 309L)

### TEACHING CERTIFICATES

Certificate in Effective College Instruction (Association of College & University Educators) May. 2023

### PEER-REVIEWED JOURNAL ARTICLES

12. Dew, M., Hunt, E., **Perera, V.**, Perry, J., Ponti, G. & Loveridge, A. (2024). Group Dynamics in Inquiry-based Labs: Gender Inequities and the Efficacy of Partner Agreements, *Physical Review Physics Education Research*, 20(010121). <https://doi.org/10.1103/PhysRevPhysEducRes.20.010121>

11. Jackson, A. P., **Perera, V.**, & Gabriel, T. S. J (2023). Impact Generation of Holes in the Early Lunar Crust: Scaling Relations, *Journal of Geophysical Research: Planets*, 128(4).  
<https://doi.org/10.1029/2022JE007498>
10. Fortner, S., Manduca, C., Ali, H., Saup, C., Nyarko, S., Othus-Gault, S., **Perera, V.**, et al. (2022). Geoscience Education Perspectives on Integrated, Coordinated, Open, Networked (ICON) Science, *Earth and Space Science*. <https://doi.org/10.1029/2022EA002298>
9. **Perera, V.** (2022). Our Moon: A Multidisciplinary Course to Develop Students' Interest, *Currents in Teaching and Learning*, 13(2), 17-27. [Link](#)
8. Magana, A. J., Thomas, P., Karabiyik, T., Jaiswal, A., **Perera, V.** & Dworkin, J. (2022). Teamwork Facilitation and Conflict Resolution Training in a HyFlex Course During the COVID-19 Pandemic, *Journal of Engineering Education*. <https://doi.org/10.1002/jee.20450>
7. Singh, J.,\* **Perera, V.**, Magana, A. J., Newell, B., Wei-Kocsis, J., Seah, Y. Y., Strimel, G. J. & Xie, C. (2022). Using Machine Learning to Predict Engineering Technology Students' Success with Computer Aided Design, *Computer Applications in Engineering Education*.  
<https://doi.org/10.1002/cae.22489>
6. **Perera, V.**, Strimel, G. J. & Magana, A. J. (2021). Using Aladdin as a Tool to Empower Engineering Learning, *Technology and Engineering Teacher*, 81(2), 36-41.  
<https://www.iteea.org/Publications/Journals/TET/TETOct21.aspx>
5. **Perera, V.**, Mead, C., van der Hoeven Kraft, K. J., Stanley, S., Angappan, R., MacKenzie, S., Barik, A. & Buxner, S. (2021). Considering Intergroup Emotions to Improve Diversity and Inclusion in the Geosciences, *Journal of Geoscience Education*, 69(3), 248-252.  
<https://doi.org/10.1080/10899995.2021.1881863>
4. **Perera, V.**, Jackson, A. P., Elkins-Tanton, L. T. & Asphaug, E. (2018). Effect of Reimpacting Debris on the Solidification of the Lunar Magma Ocean, *Journal of Geophysical Research: Planets*, 123(5), 1168-1191. <https://doi.org/10.1029/2017JE005512>
3. **Perera, V.**, Mead, C., Buxner, S., Lopatto, D., Horodyskyj, L., Semken, S. & Anbar, A. (2017). Students in Fully Online Programs Report More Positive Attitudes toward Science Than Students in Traditional, In-Person Programs, *CBE—Life Sciences Education*, 16(4), ar60.  
<https://doi.org/10.1187/cbe.16-11-0316>
2. **Perera, V.**, Jackson, A. P., Asphaug, E. & Ballouz, R. (2016). The Spherical Brazil Nut Effect and its Significance to Asteroids, *Icarus*, 278, 194-203. <https://doi.org/10.1016/j.icarus.2016.06.014>
1. Garrick-Bethell, I., **Perera, V.**, Nimmo, F. & Zuber, M. (2014). The Tidal-Rotational Shape of the Moon and Evidence for Polar Wander, *Nature*, 512(7513), 181. <http://dx.doi.org/10.1038/nature13639>

\*Student-led publication under my supervision

### OTHER PUBLICATIONS

- **Perera, V.** *Driven by Affect to Explore Asteroids, the Moon, and Science Education*, Ph.D. Dissertation Arizona State University (2017).

### WHITE PAPERS

- **Perera, V.** & Buxner, S. *Establishing a Presence on YouTube for Formal and Informal Astronomy Education*, American Astronomical Society Education Task Force (2016).

### PLANETARY SCIENCE CONFERENCE TALKS

- **Perera, V.** & Jackson, A. P. *Using Monte Carlo Simulations to Constrain the Impact of Debris on the Infant Moon*, American Geophysical Union Fall Meeting (December 2018)

- **Perera, V.**, Jackson, A. P., Elkins-Tanton, L. T., Asphaug, E. & Gabriel, T. S. J. *Cratering and Penetration of the Early Lunar Crust*, Bombardment: Shaping Planetary Surfaces and Their Environments (October 2018)
- **Perera, V.**, Jackson, A. P., Elkins-Tanton, L. T. & Asphaug, E. *Re-impacting Debris Facilitated Cooling of the Lunar Magma Ocean*, American Astronomical Society Division for Planetary Sciences (October 2017)
- **Perera, V.**, Jackson, A. P., Elkins-Tanton, L. T. & Asphaug, E. *Effect of Re-Impacts on the Lunar Magma Ocean*, Accretion: Building New Worlds Conference (August 2017)
- **Perera, V.**, Jackson, A. P., Gabriel, T. S. J., Elkins-Tanton, L. T. & Asphaug, E. *Expedited Cooling of the Lunar Magma Ocean Due to Impacts*, Lunar and Planetary Science Conference (March 2017)
- **Perera, V.**, Jackson, A. P., Asphaug, E. & Ballouz, R. *The Spherical Brazil Nut Effect and its Significance to Asteroids*, American Astronomical Society Division for Planetary Sciences (November 2015)
- **Perera, V.**, Movshovitz, N., Asphaug, E. & Thangavelautham, J. *Material Studies of Asteroid Regolith and Accretion Using a Low-Cost CubeSat Laboratory*, International Astronautical Congress (October 2014)
- **Perera, V.** & Garrick-Bethell, I. *Lunar Symmetry: The True Shape of the Moon?*, Lunar and Planetary Science Conference (March 2012)
- **Perera, V.** & Garrick-Bethell, I. *Lunar Asymmetry: Coincidence of the Degree-1 and Degree-2 Features due to a Rayleigh-Taylor Instability and Reorientation*, Lunar and Planetary Science Conference (March 2011)

#### STEM EDUCATION CONFERENCE TALKS

- **Perera, V.**, Mead, C., van der Hoeven Kraft, K. J., Stanley, S., Semken, S., Husman, J., Angappan, R., MacKenzie, S., Barik, A., & Buxner, S. *Considering Intergroup Emotions to Improve Diversity and Inclusion in the Geosciences*, American Geophysical Union Fall Meeting (December 2019)
- **Perera, V.**, Mead, C., Buxner, S. R., Horodyskyj, L., Semken, S., Lopatto, D. & Anbar, A. *Assessing Attitudes Towards Science During an Adaptive Online Astrobiology Course: Comparing Online and On-Campus Undergraduates*, American Astronomical Society Division for Planetary Sciences (October 2016)
- **Perera, V.**, Buxner, S. R., Horodyskyj, L., Anbar, A., Semken, S., Mead, C. & Lopatto, D. *Investigating Changes in Students' Attitudes Towards Science During an Adaptive Online Astrobiology Course*, American Astronomical Society Division for Planetary Sciences (November 2015)

#### OTHER PLANETARY SCIENCE ABSTRACTS

- Jackson, A. P., **Perera, V.**, & Gabriel, T. S. J. *A Moth-Eaten Blanket: Re-Impacting Debris Punctured Holes in the Early Lunar Crust*, Lunar and Planetary Science Conference (March 2021)
- **Perera, V.**, Schwinger, S., Asimow, P. D., Jackson, A. P., Neal, C. R. & Antoshechkina, P. M. *Developing an Integrated Thermochemical Code for Modeling Lunar Magma Ocean Evolution*, Lunar and Planetary Science Conference (March 2019)
- Jackson, A. P., **Perera, V.**, Elkins-Tanton, L. T. & Asphaug, E. *Puncturing Holes in the Early Lunar Crust with Re-impacting Debris*, Lunar and Planetary Science Conference (March 2019)
- Klima, R. L., Denevi, B. W., Ernst, C. M., Murchie, S. L., Peplowski, P. N., **Perera, V.** & Vander Kaaden, K. *Carbon on Mercury*, American Geophysical Union Fall Meeting (December 2018)
- **Perera, V.** & Jackson, A. P. *Early Lunar Crust Healed Itself After Impacts Punctured Holes*, Bombardment: Shaping Planetary Surfaces and Their Environments (October 2018)

- Klima, R. L., Blewett, D. T., Denevi, B. W., Ernst, C. M., Murchie, S. L., Peplowski, P. N., **Perera, V.** & Vander Kaaden, K. *Carbon on Mercury's Surface—Origin, Distribution and Concentration*, Mercury: Current and Future Science of the Innermost Planet Meeting (May 2018)
- **Perera, V.**, Jackson, A. P., Elkins-Tanton, L. T. & Asphaug, E. *Effect of Re-impacting Debris on the Solidification of the Lunar Magma Ocean*, Lunar and Planetary Science Conference (March 2018)
- Jackson, A. P., **Perera, V.**, Elkins-Tanton, L. T. & Asphaug, E. *Impact Generation of Holes in the Early Lunar Crust*, Accretion: Building New Worlds Conference (August 2017)
- Dunham, E., Desch, S. J., **Perera, V.**, & Schwartz, S. R. *Probing the Internal Structure and Habitability of Icy Worlds Using Haumea*, Astrobiology Science Conference (April 2017)
- Jackson, A. P., **Perera, V.**, Gabriel, T. S. J., Elkins-Tanton, L. T. & Asphaug, E. *Impacts into Thin Crust Overlying a Magma Ocean*, Lunar and Planetary Science Conference (March 2017)
- Dunham, E., Desch, S. J., **Perera, V.** & Schwartz, S. R. *Modeling the Axis Ratios of a Differentiated Haumea to Determine Its Internal Structure*, Lunar and Planetary Science Conference (March 2017)
- Cournède, C., Garrick-Bethell, I., Coe, R., **Perera, V.**, Weiss, B. P. & Nelson, R. *Insights into Early Lunar Paleomagnetism from the Ancient Norite 78235*, Lunar and Planetary Science Conference (March 2017)
- **Perera, V.**, Jackson, A. P., Asphaug, E. & Ballouz, R. *Driving Mechanism of the Brazil Nut Effect in Asteroids*, American Astronomical Society Division for Planetary Sciences (October 2016)
- **Perera, V.**, Lightholder, J., Noviello, J., Cotto-Figueroa, D., Asphaug, E. & Thangavelautham, J. *The Study of Planet Formation and Asteroid Surfaces Using a CubeSat Laboratory*, Low Cost Planetary Missions Conference (June 2015)
- **Perera, V.**, Cotto-Figueroa, D., Noviello, J., Asphaug, E. & Morris, M. *Asteroid Origins Satellite (AOSAT): Science in a CubeSat Centrifuge*, Conference on Spacecraft Reconnaissance of Asteroid and Comet Interiors (January 2015)
- Garrick-Bethell, I., **Perera, V.**, Nimmo, F. & Zuber, M. *The Tidal-Rotational Shape of the Moon and Evidence for Polar Wander*, Lunar and Planetary Science Conference (March 2014)
- Garrick-Bethell, I., **Perera, V.**, Nimmo, F. & Zuber, M. *The Early Shape of the Moon*, American Geophysical Union Fall Meeting (December 2013)

#### OTHER STEM EDUCATION ABSTRACTS

- Jaiswal, A., Lyon, J. A., **Perera, V.**, Magana, A. J., Gundlach, E. & Ward, M. D. *Work-in-Progress: Evaluating Student Experiences in a Residential Learning Community: A Situated Learning Perspective*, American Society for Engineering Education Conference (July 2021)
- Jaiswal, A., Thomas, P. J., Karabiyik, T., **Perera, V.** & Magana, A. J. *Assessing the Impact of Transition from Face-to-Face to Online Instruction on Team Cooperation*, American Society for Engineering Education Conference (July 2021)
- **Perera, V.**, Che, G., Davis, K., Semken, S., Groppi, C. & Walker, C. *My child just built a radio and we hear music!*, American Geophysical Union Fall Meeting (December 2018)
- **Perera, V.**, Mead, C., Buxner, S. R., Horodyskyj, L., Semken, S., Lopatto, D. & Anbar, A. *Gauging Students' Attitudes Towards Science to Improve Science Pedagogy*, Astrobiology Science Conference (April 2017)
- **Perera, V.**, Mead, C., Buxner, S. R., Horodyskyj, L., Semken, S., Lopatto, D. & Anbar, A. *Assessing Student Attitudes Towards Science in an Adaptive Online Astrobiology Course: Comparing Online and On-Campus Undergraduates*, American Geophysical Union Fall Meeting (December 2016)
- Buxner, S. R., Anbar, A., Semken, S., Mead, C., Horodyskyj, L., **Perera, V.**, Bruce, G. & Schönstein, D. *A Guide for Scientists Interested in Researching Student Outcomes*, American Astronomical Society Division for Planetary Sciences (November 2015)

### SEMINARS/COLLOQUIA

- Michigan State University (Department of Earth & Environmental Sciences) Oct. 2021  
*Facts Are Not Enough: Merging Cognitive and Non-cognitive Factors in Education*

### PUBLIC TALKS

- Schrödinger's Pint (Darwin's Piano Bar, Austin, TX.) Jun. 2023  
*How did we get a moon?*

### REVIEWER

- *Active Learning in Higher Education* (1 paper since 2025)
- *Journal of Geophysical Research-Planets* (1 paper since 2024)
- *History of Intellectual Culture* (1 paper since 2024)
- *Physical Review Physics Education Research* (1 paper since 2023)
- *PeerJ* (1 paper since 2021)
- *American Society for Engineering Education Annual Conference* (7 abstracts & 1 paper since 2020)
- *Computer Applications in Engineering Education* (1 paper since 2020)
- *Science Advances* (1 paper since 2020)
- *Journal of Geoscience Education* (2 papers since 2019)
- *Geophysical Research Letters* (1 paper since 2017)

### RESEARCH STUDENTS

Jasmine Singh (undergraduate), Purdue University Sp. 2021

### PROFESSIONAL SERVICE

Advisor, LPI Exploration of the Moon & Asteroids by Secondary Students (ExMASS) program 2021-2022  
Reviewer, NASA ROSES Review Panels 2020  
Executive Secretary, NASA ROSES Review Panel 2018

### UNIVERSITY SERVICE

Committee Member, Physics Teaching Excellence Committee Aug. 2022–  
Committee Member, Physics Foundational Affairs Committee Jan. 2022–  
Member, CNS Community of Practice on Inclusive Teaching Sep. 2022–  
Member, CNS Academic Technology Council Dec. 2022–

### PROFESSIONAL DEVELOPMENT

UT Austin CNS TIDES Course Design Institute (2-Day Workshop) May 2022  
Johns Hopkins Teaching Institute (3-Day Workshop) May 2018

### FUNDING

- UT Austin Center for Teaching & Learning Teaching Innovation Grant (Su. 2022)
- JHU Dean's Science Teaching Postdoctoral Fellowship (Fa. 2019)