

Christine M. Lee, Ph.D.

NASA Jet Propulsion Laboratory
300-329, 4800 Oak Grove Dr., Pasadena, CA 91109
+1(818) 354-3343 | christine.m.lee@jpl.nasa.gov

Summary of Relevant Experience

Christine Lee is principal investigator on the ECOSTRESS Science and Applications team project as well as for a NASA Applied Sciences project that will increase accessibility and use of remote sensing water quality products by various California water resource agencies in regional investigations of environmental and public health. Christine is also co-investigator for several other projects, including a NASA Ecological Forecasting effort to support Belize coastal management planning and decisions with remote sensing data.

Professional Experience

2019-Present Scientist, Terrestrial Hydrology Group, JPL
2014-2019 Systems Engineer, Applied Science Systems Engineering Group, JPL
2014-Present Research Affiliate, UCLA Institute of the Environment and Sustainability
2012-14 AAAS Science and Technology Policy Fellow, NASA Headquarters, Earth Science, Applied Sciences (Capacity Building and Water Resources)
2010-12 Postdoctoral Researcher, JPL

Project and Program Roles

2019-Present JPL Lead, Applications, Surface Biology and Geology (SBG) Architecture Study
2016-2018 Project Scientist, NASA Western Water Applications Office
2015-Present Science Applications Lead, ECOSTRESS Mission
2014-Present, Associate Program Manager for NASA Water Resources Program

Education

2010, Ph.D. Environmental Engineering UCLA
2006, M.S. Environmental Engineering UCLA
2005, B.S. Chemical Engineering UCLA

Honors

2020, JPL Voyager Award for SBG Applications
2019, NASA Early Career Public Achievement Medal
2019, JPL Voyager Award for Applications in Mission Formulation
2017, JPL Voyager Award for Outstanding Contributions to Water Resources Program at JPL
2012-2014, AAAS Science and Technology Policy Fellowship

Peer-Reviewed Publications

1. Ade C, Hestir EL, **Lee CM**, Assessing Fish Habitat and the Effects of an Emergency Drought Barrier on Estuarine Turbidity Using Satellite Remote Sensing. Submitted. *Journal of American Water Resources Association*.
2. Cooley SA, Fisher JB, Williams C, Halverson G, Peret J, **Lee CM**, Assessing regional drought impact on vegetation and evapotranspiration: a case study in Guanacaste, Costa Rica, *Ecological Applications*, 2018.

3. Zimmer-Faust A, Thulsiraj V, Lee CM, et al. Multi-tiered approach utilizing microbial source tracking and human associated IMS/ATP for surveillance of human fecal contamination in Baja California, Mexico, *Science of the Total Environment*. 2018.
4. Hossain F. et al., A Global Capacity Building Vision for Societal Applications of Earth Observing Systems and Data, Bulletin in American Meteorological Society, 2016.
5. **Lee CM**, Cable ML, Hook SJ, Green RO, Ustin SL, Mandl DJ, Middleton EM. An intro to the NASA Hyperspectral InfraRed Imager mission and preparatory activities, *Remote Sensing of Environment*, 2015.
6. Noell AC, Greenwood A, **Lee CM**, Ponce A. High Density Homogeneous Endospore Monolayer Deposition on Test Surface, *J. Microbiological Methods*. 2013.
7. Mika KB, Ginsburg DW, **Lee CM**, Thulsiraj V, Jay JA. Fecal indicator bacteria levels do not correspond with incidence of human-associated HF183 Bacteroides 16S rRNA genetic marker in two urban Southern CA watersheds. *Water, Air and Soil Pollution*. 2014.
8. Noell AC, Greenwood A, **Lee CM**, Ponce A. High Density Homogenous Endospore Monolayer Deposition on Test Surfaces. *Journal of Microbiological Methods*. 2013.
9. **Lee CM**, Hemmings SN, Searby ND. Using Earth Observations to enhance water resources decision-making and disasters assessment processes in the U.S. and developing world. *IEEE Global Humanitarian Technology Conference*. 2013.
10. Mika KB, et al. Incorporating Service-Learning in Traditional Lecture-Based Environmental Engineering Courses Through Research Bacterial Contamination at a Local Beach. *Global Journal of Engineering Education*. 2012.
11. **Lee CM**, et al. Covalently linked immunomagnetic separation/adenosine triphosphate technique is a rapid and field-portable method for measuring *E. coli* and *Enterococcus* spp in fresh and marine water environments. *J. of Applied Microbiology*. 2010.
12. Boehm AB, et al. Fecal indicator bacteria enumeration in beach sand: A comparison study of FIB extraction methods in medium to coarse sands. *J. of Applied Microbiology*. 2009.
13. Mika KB, et al. Pilot- and bench-scale testing of fecal indicator bacteria survival in marine beach sand near point sources. *J. Applied Microbiology*. 2009.
14. Ramanathan N, **Lee CM**, et al. Sensor-based investigation of biogeochemical control on arsenic mobilization in rural Bangladesh. *American Chemical Society Conf Proceedings*. 2007.
15. **Lee CM**, et al. Persistence of fecal indicator bacteria in Santa Monica Bay beach sediments. *Water Research*. 2006.

Other Publications

16. **Lee CM**, Fisher JB, Hook SJ, ECOSTRESS Maps Vegetation Health Around the World. Accepted. *AGU Eos Transactions*.
17. Doorn BD, Melton FS, Bolten JD, **Lee CM**, Brennan S. NASA Water Resources Annual Review Summary 2016, 2017, 2018, 2019,
18. **Lee CM**, et al, Applying Earth Observations for Water Resources Challenges, Ch. 6, *Earth Science Satellite Applications*, Springer Remote Sensing/Photogrammetry, 2016.
19. Bolten JB, **Lee CM**, Houser P. Satellite Data for Water Resources Management, AGU Eos Transactions American Geophysical Union, 2015.
20. **Lee CM**, Orne T., Schaeffer B. How can remote sensing be used for water quality? Bridging the operational and applications communities to address WQ challenges. AGU Eos. 2014.
21. Mathew R and **Lee CM**. Leveraging local resources to implement a community-oriented sustainable computer education project in Los Angeles. *IEEE Wiley, Ch. 17. Service Learning in Computer and Information Sciences*. 2012.
22. Ros-Giralt J, et al. Using Labdoo to Bridge the Digital Divide: A New Form of International Cooperation. *IEEE Wiley, Ch. 17. Service Learning in Computer and Information Sciences*. 2012.

Professional Service

Guest Associate Editor, Journal of American Water Resources Association (JAWRA), 2020
Freshwater Harmful Algal Blooms Committee, CADWR, 2020
Remote Sensing for Water Quality Technical Committee, American Society of Civil Engineers, 2020
Convener and Co-chair, AGU Fall Meeting, Remote Sensing for Water Resources, 2012-present
Journal Reviewer, *Remote Sensing*, *AGU GeoHealth*, *Environmental Research Letters*.
Reviewer, NASA Earth science solicitations

Mentorship

2020-, M.S. Committee Member, Jonathan Vellanoweth, Nuclear Power Plant Thermal Discharge in Coastal Ecosystems
2020-, Advisor to Gurjot Kohli, UC Berkeley, Comparing Evapotranspiration Estimates in Riverside County in Partnership with Eastern Municipal Water District
2019-, M.S. Committee Member, Mariam Ayad, Remote Sensing of Coastal Stormwater and Sewage Plumes, Cal State Los Angeles.
2019-, Co-advisor to Emelly Ortiz, Stormwater Plumes in Southern CA
2019-, Advisor to Sol Kim, UC Berkeley, Data Science for the 21st Century Project, Belize Water Quality
2018-2019, Science Advisor NASA DEVELOP Belize Water Resources I and II
2017, M.S. Committee Member, Savannah Cooley, Clark University, Assessing regional drought impacts on vegetation and evapotranspiration: a case study in Guanacaste, Costa Rica
2017, Science Advisor NASA DEVELOP San Francisco Bay-Delta Water Resources I and II
2016, Science Advisor NASA DEVELOP ECOSTRESS Agriculture I and II