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Education

2022 Ph.D., Geography, University of California, Los Angeles
 (advisors: Laurence C. Smith; Dennis P. Lettenmaier)
 2015 M.S. Geography and Geoinformation Science, George Mason University
 (advisors: Matthew Rice; Sven Fuhrmann)
 2011 Grad Cert., School of International Service, American University
 2010 B.A., Political Science, Hampton University

Professional Positions

Fall 2024 Assistant Professor (tenure-track), Department of Earth and Environmental Sciences, University of Michigan
 2023-2024 Joint Postdoctoral Fellowship Appointments: LSA Collegiate Fellowship and the President's Postdoctoral Fellowship, Department of Earth and Environmental Sciences, University of Michigan
 2022 Postdoctoral Researcher, Department of Electrical Engineering, University of Southern California
 2017 Research Intern, Terrestrial Information Systems, NASA Goddard Space Flight Center (NASA-GSFC)
 2016-2017 Research Associate- NASA Applied Remote Sensing Training (ARSET)- Joint Center for Earth Systems Technology (JCET), University of Maryland Baltimore County (UMBC)
 2015-2017 Research Associate- Water Resources- School of Earth, Ocean and Environment, University of South Carolina
 2014-2016 Geospatial Consultant -NASA DEVELOP- Applied Sciences Laboratory, NASA Goddard Space Flight Center (NASA-GSFC)
 2014 Hydrology Intern, Hydrological Sciences Laboratory, NASA Goddard Space Flight Center (NASA-GSFC)

Visiting Positions

2017-Present Visiting Researcher Radar Science and Engineering - Data Production and Analysis, NASA Jet Propulsion Laboratory (NASA-JPL)

Honors and Awards

Year	Award	Amount
2021	Best Student Oral Presentation (3rd) - Canadian Symposium on Remote Sensing	\$250
2020-2022	Future Investigators in NASA Earth and Space Science and Technology (FINESST) <i>"Analysis of Ka-band Radar for SWOT Hydrology"</i>	\$135k
2019	Outstanding Student Presentation Award (OSPA), American Geophysical Union (AGU Fall Meeting) <i>"Surface Water Detection and Retrieval from AirSWOT"</i>	\$200
2018	Research Incubator Award, Earth Science Information Partners (ESIP), <i>"Design, Build, and Deploy a Traveling Water Monitoring Station"</i>	\$5k
2017	Research Fellowship, Earth Science Information Partners	\$2k
2017	NASA- John Mather Nobel Scholarship Award (2nd time winning)	\$3k
2017	Eugene V. Cota-Robles Fellowship, UCLA Tuition and Stipend 1st and 4th Year	\$90k
2016	ASPRS Presidential Citation, American Society of Photogrammetry and Remote Sensing <i>"Developing the New ASPRS Awards Interface and Review Process"</i>	[-]
2015	Geospatial Intelligence (GEOINT) Student Travel Award, United States Geospatial Intelligence	\$500

	Foundation (USGIF)	
2014	NASA- John Mather Nobel Scholarship Award (1st time winning)	\$3k
2014	AGU Student Travel Scholarship, American Geophysical Union Fall Meeting	\$500
2014	ASPRS Geoleague Competition (1st Place, Team)	[-]
2013	GIS Day Mapping Competition (1st Place), George Mason University	[-]

Editorial and Professional Service

2022	Co-Organizer and Co-Chair , 3 Sessions in Hydrology, Cryosphere and Near Surface Geophysics, American Geophysical Union (AGU) Fall Meeting <ol style="list-style-type: none"> 1) <i>The Surface Water and Ocean Topography (SWOT) Mission: A New Satellite for Earth's Water Cycle</i> 2) <i>Advances in Active Remote Sensing for Hydrology and Terrestrial Ecosystems</i> 3) <i>Remote Sensing of Earth's Northern Landscapes</i> 	
2022-Present	Member , 2 AGU Hydrology Technical Committees <ol style="list-style-type: none"> 1) <i>Hydrogeophysics</i> 2) <i>Remote Sensing</i> 	
2022-Present	Review Editor , Frontiers in Remote Sensing: Microwave Remote Sensing ---Working to launch a special issue for Women in MRS, with sponsor-supported publication fees	
2022	Organizer and Chair , 2 Sessions for the American Association of Geographers (AAG) Annual Meeting, <ol style="list-style-type: none"> 1) <i>Surface Water Remote Sensing 1</i> 2) <i>Surface Water Remote Sensing 2</i> 	
2022	Co-Organizer and Co-Chair , IEEE International Geoscience and Remote Sensing Symposium (IGARSS) <i>Radar Techniques and Sensor Fusion for Characterizing Arctic Change</i>	
2021	Co-Organizer and Co-Chair , 2 Sessions IEEE International Geoscience and Remote Sensing Symposium (IGARSS) <ol style="list-style-type: none"> 1) <i>Multi-band, Multi-sensor, and Polarimetric Radar Techniques for Permafrost Characterization</i> 2) <i>Remote Sensing in Inland Waters II</i> 	
2021	Organizer and Chair , 2 Sessions for the American Association of Geographers (AAG) Annual Meeting, <ol style="list-style-type: none"> 1) <i>Surface Water Remote Sensing 1</i> 2) <i>Surface Water Remote Sensing 2</i> 	
2017-2019	Member and Community Fellow , "Disasters Cluster" (Natural Disasters Data Preparedness), Earth Science Information Partners (ESIP)	
2016-2018	Member , Website and Media Working Group, American Society of Photogrammetry and Remote Sensing (ASPRS)	
2016-2018	Chair , Early Career Professionals Council, American Society of Photogrammetry and Remote Sensing (ASPRS)	
2015-2018	Coordinator , Scholarship and Awards Program, American Society of Photogrammetry and Remote Sensing (ASPRS)	
2015-2016	Communications Advisor , Early Career Professionals Council, American Society of Photogrammetry and Remote Sensing (ASPRS)	
2015	Member , Organizing Committee, ASPRS Potomac Region "GeoTech" Conference	
2013-2015	Councilor , Communications, Student Advisory Council, American Society of Photogrammetry and Remote Sensing (ASPRS)	

Departmental Service

2020-2021	Member, Draft Writer , UCLA Geography Task Force On Racial and Gender Equity, Inclusiveness, and Support
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Invited Lectures & Talks

Planned 2023	Department of Geoinformatics, Hochschule Munchen University of Applied Sciences (Munich, Germany)
Planned 2023	Department of Physical Geography, Stockholm University
Apr 2023	Department of Geosciences, Virginia Polytechnic University (Virginia Tech)
Mar 2023	Department of Climate and Space Sciences and Engineering, University of Michigan

Mar 2023 Molecular Frontiers Foundation, University of California, Berkeley, Symposium on the Nature of Water
 Dec 2022 Fall AGU Meeting, Chicago “*Anticipating SWOT Water and Wetland Phenomenology using Airborne Ka-band SAR from AirSWOT*”
 Sept 2022 Center for Global Change Science, University of Toronto (online)
 June 2022 The Surface Water and Ocean Topography (SWOT) Science Team Meeting
 Dec 2021 Department of Engineering, University of Virginia

Broader Impacts and Community Outreach

2022 **Invited Speaker*** Girls in Technology (GIT) Washington, DC Metro Area. “Women of NASA/ Women in Physical Science”
 2021 **Invited Guest Lecturer*** Sisters of SAR: A 5 - Day SAR Remote Sensing Course: “Introduction to Interferometric Synthetic Aperture Radar”
 2020 **Letter Writer/Organizer**, UCLA Geography Task Force on Racial and Gender Equity, Inclusiveness and Support
 2018-2020 **Instructor** for R Programming for GIS and Remote Sensing, NASA DEVELOP Software Carpentries Training
 2017 **Invited Speaker*** Girls in Technology (GIT) Washington, DC Metro Area. “Shining Figures: Women of NASA/ Women in Earth Science and GIS”
 2017 **Instructor** for Satellite Precipitation Analysis with GPM data using QGIS, NASA Applied Remote Sensing Training

Course Instruction and Grading (Teaching Assistant-TA and Grader-G, Visiting Lecturer/TA-V)

<u>Year</u>	<u>Term</u>	<u>Course</u>	<u>Format</u>	<u>Role</u>	<u>Title</u>	<u>Credits</u>	<u>Students</u>
2020	Spring Quarter	UCLA-GEOG104	Virtual	TA	Climatology: Boundary Layer Climates	4	95
2019	Winter Quarter	UCLA-GEOG169	Lecture/Lab	G	Introduction to Remote Sensing	4	25
2015	Fall Quarter	Stanford-GEOPHYS199	Lecture/Lab	V	Senior Seminar: Issues in Earth Sciences: Observing Freshwater	3	~12

Research Grants

<u>Year</u>	<u>Fraction of Awards Won/Applied</u>	<u>Dollar Amount Received/Total</u>
2023	NA/4 In Review	NA In Review
2022	2/2	NA In Review
2021	0/0	NA
2020	0/0	NA
2019	1/1	\$135K

Current Grants (PI- Authority Awarded in July 2022)

- 2023-2024 **Co-I**, NASA Commercial Satellite Data Acquisition Program (PI: Sarah Cooley)
“Evaluating the capabilities of ICEYE radar imagery for surface water mapping”
- 2023-2024 **Co-I**, NASA Commercial Satellite Data Acquisition Program (PI: Sarah Cooley)
“Evaluating the capabilities of Capella Space radar imagery for surface water mapping”

Pending Grants (PI- Authority Awarded in July 2022)

- 2023 **PI** - NASA Spaceflight Training
“Aerodynamic Resistance Constellation for Evapotranspiration (ARC-ET)”
- 2024-2027 **Co-I** Department of Energy (PI: Adam Simon)
“A Computational, Experimental, Field, and Spectroscopic Investigation of Adsorption of Rare-Earth ions in Clay-Hosted Deposits as well as Complexation for Potential Extraction”
- 2024-2027 **Co-I** NASA Commercial Satellite Data Scientific Analysis (PI: Mahta Moghaddam)
“Super-Resolved Land Surface Freeze/Thaw Characterization Using Multi-Source Satellite Data and Physics-Informed Deep Learning”
- 2023-2024 **Co-I** NASA Terrestrial Ecology Program (PI: James Kellner)
“Airborne multi-sensor fusion in support of NASA terrestrial ecology”

Past Grants

- 2020-2022 **FI**, NASA Future Investigators in Earth and Space Science and Technology (PI: Laurence C. Smith)
“Analysis of Ka-band Radar for SWOT Hydrology”

Students Advised or Co-Advised

- Rebecca Bowers “Studying the Impacts of Wildfires on Carbon Stocks in North America”
2022-Present “Characterizing Vegetation Structure Using Full-Waveform LiDAR and Optical Data from LVIS and Landsat: Aquatic Vegetation Component”
Brown University: Undergraduate-Junior
- Duncan Jurayj “Characterizing Vegetation Structure Using Full-Waveform LiDAR and Optical Data from LVIS and Landsat: Land Vegetation Component”
2022-Present Brown University: Undergraduate-Junior
- Carolyn Lober “Bias Correction of 20 Years of IMERG Satellite Precipitation Data over Canada and Alaska”
2021-2023 Brown University Senior Thesis
Now: Intern, Flathead Lake Biological Station, Big Sky Watershed Corps, Montana Conservation Corps
- Caitlin Tran “Unsupervised Classification for Landslide Detection from Airborne Laser Scanning”
2017-2019 California State Polytechnic University –Pomona (co-advised with Omar Mora)
Now: Surveyor at BWE Inc.

Dissertation Committee Member

University of Michigan

Current NA

External Committee Member

Molly Stroud Virginia Polytechnic Institute and State University (Virginia Tech)
(Ph.D. Expected 2025; Advisor, George Allen)

Publications (* Denotes Mentored Paper)

Published and Under Review

1. **Fayne JV**, Smith LC. “How does wind influence near-nadir Ka-Band radar backscatter and interferometric coherence returns from small inland water bodies?” *In Review*, MDPI Remote Sensing

2. Wang B, Smith LC, Kyzivat ED, **Fayne JV.**, Harlan M, Langhorst T, Feng D., et al. 2023 "Athabasca River Avulsion Underway in the Peace-Athabasca Delta, Canada" *Water Resource Research* <https://10.1029/2022WR034114>
3. Bakian-Dogaheh K., **Fayne JV.**, Chen RH., Yi Y., Kimball JS., Moghaddam M. 2022 "Empirical Models for Predicting Soil Water Dielectric Behavior Using Hydrologic Properties of Permafrost Soils" *Geophysical Research Letters (In Revision)*
4. Goldstein SV, Ryan JC, How PR, Esenther SE, Pitcher LH, Lewinter AL, Overstreet B, Kyzivat EK, **Fayne JV**, Smith LC. 2022 "Proglacial river stage derived from georectified time-lapse camera images, Inglefield Land, Northwest Greenland" *Frontiers in Earth Science: Cryospheric Sciences Methods (In Review)*
5. *Lober C, **Fayne JV**, Smith LC, Hashemi H. 2023. "Bias Correction of 20 Years of IMERG Satellite Precipitation Data over Canada and Alaska", *Elsevier Journal of Hydrology: Regional Studies* <https://doi.org/10.1016/j.ejrh.2023.101386>
6. **Fayne JV**, Smith LC, Liao T-H, Pitcher LH, Denbina M, Chen AC, Simard M, Chen CW, Williams BA. 2023 "Characterizing Near-Nadir and Low Incidence Ka-Band SAR Backscatter from Wet Surfaces and Diverse Land Covers" IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (*In Revision*)
7. Pirmoradian R., Hashemi H., **Fayne JV.** 2022. "Performance Evaluation of IMERG and TMPA daily precipitation products over CONUS (2000-2019)". *Elsevier Atmospheric Research* <https://doi.org/10.1016/j.atmosres.2022.106389>
8. Huang C, LC Smith, Kyzivat ED, **Fayne JV**, Ming Y, Spence C. 2022 "Tracking transient Arctic-Boreal wetland inundation from Sentinel-1 SAR" *GIScience and Remote Sensing*. <https://doi.org/10.1080/15481603.2022.2134620>
9. Kyzivat EK, Smith LC, Tigeros FG, Huang C, Wang C, Langhorst T, **Fayne JV**, Harlan M, Ishitsuka Y, Feng D, Dolan W, Pitcher LH, Pavelsky TM, Butman D, Wickland K, Dornblaster MM, Streigl R, Gleason CJ. 2022. "The Importance of Lake Emergent Aquatic Vegetation for Estimating Arctic-Boreal Methane Emissions." *Journal of Geophysical Research: Biogeosciences*. <https://doi.org/10.1029/2021JG006635>
10. Huang H, Fischella M, Liu Y, Ban Z, **Fayne JV**, Li D, Cavanaugh K, Lettenmaier DP. 2022 "Changes in mechanisms and characteristics of Western U.S. floods over the last sixty years" *Geophysical Research Letters* <https://doi.org/10.1029/2021GL097022>
11. **Fayne JV**, and LC Smith. "Characterization of Near-Nadir Ka-Band Scattering From Wet Surfaces," in *IGARSS 2021 - 2021 IEEE International Geoscience and Remote Sensing Symposium*, <https://doi.org/10.1109/IGARSS47720.2021.9553413>
12. Pitcher LH, Smith LC, Cooley SW, Zaino A, Carlson R, Pettit J, Gleason CJ, Minear TJ, **Fayne JV**, et al. 2020 "Advancing field-based GNSS surveying for validation of remotely sensed water surface elevation products". *Frontiers in Earth Science*. <https://doi.org/10.3389/feart.2020.00278>
13. Cooper MG, Smith LC, Rennermalm AK, Tedesco M, Muthyala R, Leidman SZ, Moustafa SE, **Fayne JV**. 2020 "First spectral measurements of light attenuation in Greenland Ice Sheet bare ice suggest shallower subsurface radiative heating and ICESat-2 penetration depth in the ablation zone" *The Cryosphere*. <https://doi.org/10.5194/tc-2020-53>
14. **Fayne JV**, Smith LC, Pitcher LH, Kyzivat ED, Cooley SW, Denbina MW, Chen AC, Chen CW, Pavelsky TM. 2020 "Airborne Observations of Arctic-Boreal Water Surface Elevations from AirSWOT Ka-band InSAR and LVIS LiDAR" *Environmental Research Letters*. <https://doi.org/10.1088/1748-9326/abadcc>
15. Hashemi, H, **Fayne JV**, Lakshmi V, Huffman G. 2020 "Very high resolution, altitude-corrected, TMPA-based monthly satellite precipitation product over the CONUS" *Nature Scientific Data* <https://doi.org/10.1038/s41597-020-0411-0>
16. *Tran C, Mora O, **Fayne JV**. 2019 "Unsupervised Classification for Landslide Detection from Airborne Laser Scanning", *Geosciences* <https://doi.org/10.3390/geosciences9050221>
17. **Fayne, JV**, Ahamed, A, Roberts-Pierel, J, Rumsey, A. 2019 "Automated Satellite-Based Landslide Identification Product for Nepal" *Earth Interactions* <https://doi.org/10.1175/EI-D-17-0022.1>
18. Pitcher LH, Pavelsky TM, Smith LC, Moller DK, Altenau EH, Allen GH, Lion C, Butman D, Cooley SW, **Fayne JV**, Bertram M "AirSWOT InSAR Mapping of Surface Water Elevations and Hydraulic Gradients Across the Yukon Flats Basin, Alaska" *Water Resources Research* <https://doi.org/10.1029/2018WR023274>
19. Kyzivat ED, Smith LC, Pitcher LH, **Fayne JV**, Cooley SW, Cooper MG, Topp SN, Langhorst T, Harlan ME, Horvat C, Gleason CJ, Pavelsky TM. 2019 "A High-Resolution Airborne Color-Infrared Camera Water Mask for the NASA ABoVE Campaign" *Remote Sensing*. <https://doi.org/10.3390/rs11182163>
20. Lakshmi, V, **Fayne, JV**, Bolten, JD. 2018 "A comparative study of available water in the major river basins of the world" *Journal of Hydrology* <https://doi.org/10.1016/j.jhydrol.2018.10.038>
21. *Mora, OE, Lenzano MG, Toth CK, Grejner-Brzezinska DA, **Fayne JV**. 2018 "Landslide Change Detection Based on Multi-Temporal Airborne LiDAR-Derived DEMs." *Geosciences: Special Issue of Natural Hazards and Risks Assessment*. <https://doi.org/10.3390/geosciences8010023>
22. Shortridge AM, **Fayne JV**, Rice MT. 2017. "Modeling Uncertainty in Digital Elevation Models." *International Encyclopedia of Geography: People, the Earth, Environment and Technology*. <https://doi.org/10.1002/9781118786352.wbieg1153>
23. **Fayne JV**, Bolten JD, Doyle CS, Fuhrmann S, Rice MT, Houser Paul, R, Lakshmi V. 2016. "Flood mapping in the lower Mekong River Basin using daily MODIS observations." *International Journal of Remote Sensing*. <https://doi.org/10.1080/01431161.2017.1285503>

24. **Fayne JV**, Fuhrmann S, Rice MT, and Rice RM. 2015. "Exploring Alternative Map Products To Enhance Transportation Option Awareness." *Cartography And Geographic Information Science* 1-13. <https://doi.org/10.1080/15230406.2015.1053826>.

In Process (to be submitted within 2023, in order of planned submission)

1. **Fayne JV**, Smith LC. "Radar Scattering from Water Surfaces"
2. **Fayne JV**, Smith LC. "Diverse Utility of Remotely Sensed Water Surface Elevations"
3. **Fayne, JV**, Scholl, V, Pahlevan N. "Melt Ponds and Thinning Ice in the Arctic Beaufort and Chukchi Seas: Historic Analysis using Landsat Data"
4. **Fayne, JV**, Lakshmi, V, Giroto, M. "Estimating High Spatial Resolution Terrestrial Water Storage from Surface Observations: A Study of 11 Major River Basins using the GRACE Proxy Global Terrestrial Water Analysis Method"

In Process

5. **Fayne JV**, Zhao Y., et al., "Waveform LiDAR Derived Vegetation Structure"
6. **Fayne JV**, Moghaddam M., et al., "Vegetation Water Content and Soil Moisture Profiles from Multi-Frequency Radar Observations"

Other Publications

1. Ahamed A, Bolten JD, Doyle CS, **Fayne JV**. 2017 "Near real-time flood monitoring and impact assessment systems", Remote Sensing of Hydrological Extremes https://doi.org/10.1007/978-3-319-43744-6_6
2. Clayton A, **Fayne JV**, Green C, Tomlin J. 2017. "Utilizing NASA Earth Observations to Map Temporal and Spatial Patterns of Annual Bromes for Prairie Management and Invasive Species Control in the Northern Great Plains" Weber, Samantha, ed. Connections Across People, Place, and Time: Proceedings of the 2017 George Wright Society Conference on Parks, Protected Areas, and Cultural Sites. Hancock, Michigan: George Wright Society. <http://www.georgewright.org/proceedings2017>
3. **Fayne JV**, Bolten JD, Lakshmi V, Ahamed A. 2016 "Optical and Physical Methods for Mapping Flooding with Satellite Imagery", Remote Sensing of Hydrological Extremes https://doi.org/10.1007/978-3-319-43744-6_5
4. Lakshmi, V, Bindlish R, **Fayne JV**, Huffman G, Jackson T, Kirschbaum D, Skofronick-Jackson G, and Yueh S, Mapping the 2015 South Carolina flood using SMAP and GPM, GEWEX Newsletter, Vol. 26, No. 2, pp. 6-10, 2016 https://www.gewex.org/gewex-content/files_mf/1463600503May2016.pdf
5. Rice MT, Paez FI, Rice RM, Ong EW, Qin H, Seitz CR, **Fayne JV**, Curtin KM, Fuhrman S, Pfoer D, Medina RM. 2014. "Quality Assessment and Accessibility Applications of Crowdsourced Geospatial Data: A Report on the Development and Extension of the George Mason University Geocrowdsourcing Testbed" Defense Technical Information Center Report <http://www.dtic.mil/dtic/tr/fulltext/u2/a615952.pdf>
6. Rice MT, Curtin KM, Pfoer D, Rice RM, Fuhrman S, Qin H, Vese RD, Ong EW, **Fayne JV**, Paez FI, Seitz CR, Rice MA, Yu M, Ober SJ, Rice CA. 2015. "Social Moderation and Dynamic Elements in Crowdsourced Geospatial Data: A Report on Quality Assessment, Dynamic Extensions and Mobile Device Engagement in the George Mason University Geocrowdsourcing Testbed" Defense Technical Information Center Report <http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=AD1001943>
7. **Fayne JV**. 2014. George Mason University Cloth Bike Map. Fairfax. George Mason University

Published Datasets

1. Lober, C, **Fayne JV**. 2022. "Bias-Corrected IMERG Monthly Precipitation Data for Canada and Alaska, 2000-2020." ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/2097>
2. Kyzivat ED, Smith LC, Pitcher LH, **Fayne JV**, Cooley SW, Cooper MG, Topp S, Langhorst T, Harland ME, Gleason CJ, Pavelsky TM. 2020 "ABOVE: AirSWOT water masks from color-infrared imagery over Alaska and Canada, 2017" ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1643>
3. **Fayne JV**, Hashemi H. 2019, "High-Resolution Altitude Corrected Precipitation based on TMPA and other sources L4 Monthly 1 km x 1 km V1", Edited by David Silberstein, Greenbelt, MD, Goddard Earth Sciences Data and Information Services Center (GES DISC), <https://doi.org/10.5067/8115OXI2F5SB>
4. **Fayne, JV**, Smith LC, Pitcher LH, and Pavelsky TM. 2019. "ABOVE: AirSWOT Ka-band Radar over Surface Waters of Alaska and Canada, 2017". ORNL DAAC, Oak Ridge, Tennessee, USA. <https://doi.org/10.3334/ORNLDAAC/1646>

Conference Presentations (Presenting, First-Author Only)

1. **Fayne JV** et al., Vegetation Water Content and Soil Moisture Profiles from Multi-Frequency Radar Observations, IEEE International Geoscience and Remote Sensing Symposium, Pasadena, July 2023
2. **Fayne JV** et al., Multi-Scale DEM and Image Analysis for Hydrogeomorphology Studies, The Southern California Geomorphology Symposium, Santa Barbara, California May 2023
3. **Fayne JV** et al., Utilizing multiple-frequency SAR observations for monitoring hydrological and ecological characteristics: A study of UAVSAR and AirSWOT airborne data from ABoVE, AGU Annual Meeting 2022
4. **Fayne JV** et al., Anticipating SWOT Water and Wetland Phenomenology using airborne Ka-band SAR from AirSWOT (Invited), AGU Annual Meeting 2022
5. **Fayne JV** et al., Diverse Utility of SWOT Water Extent, Elevation, and Backscatter Measurements, AGU Annual Meeting 2022
6. **Fayne JV** et al., Characterizing Wetlands Using Ka-band Radar and the KaPS/KaRWL Model, 43rd Canadian Symposium on Remote Sensing, Montreal City/Online, July 2022
7. **Fayne JV** [sole author]. Towards a Methodology for Monitoring Topographic Change and Slope Instability using Remotely Sensed Canopy Geometry, The Southern California Geomorphology Symposium, Irvine, California, April 2022
8. **Fayne JV** et al., Impacts of the atmosphere on Ka-band radar backscatter returns from land and water surfaces, AGU Annual Meeting, New Orleans/Online, December 2021
9. **Fayne JV** et al., Characterizing AirSWOT Ka-band SAR Backscatter to Support SWOT Surface Water Extent Retrievals, AGU Annual Meeting, New Orleans/Online, December 2021
10. **Fayne JV** et al., Characterization of Near-Nadir Ka-Band Scattering from Wet Surfaces, IEEE International Geoscience and Remote Sensing Symposium, Brussels/Online, July 2021
11. **Fayne JV** et al., The Quantification of Near-Nadir Ka-band Surface Scattering Characteristics, 42nd Canadian Symposium on Remote Sensing, Yellowknife/Online, June 2021
12. **Fayne JV** et al., Changes in mechanisms and intensity of Western US floods, 1960-2013, European Geophysical Union (EGU) General Assembly, Online, April 2021
13. **Fayne JV** et al., Radar Scattering from Water Surfaces: Introduction to the SWOT Mission, AAG Annual Meeting, Online, April 2021
14. **Fayne JV** et al., Airborne Observations of Ka-band Radar Backscatter from AirSWOT Enable Vegetation and Water Detection, AGU Annual Meeting, Online, December 2020
15. **Fayne JV** et al., Airborne observations of Ka-band radar backscatter from AirSWOT enable vegetation and water detection in the Peace Athabasca Delta, 41st Canadian Symposium on Remote Sensing, Yellowknife/Online, June 2020
16. **Fayne JV** et al., Airborne Arctic-Boreal Water Surface Elevation Observations from AirSWOT Ka-band InSAR and LVIS LiDAR, AGU Annual Meeting, San Francisco, December 2019
17. **Fayne JV** et al., Building an Operational Network to Validate Novel Inland Water Swath Altimetry, Earth Science Information Partners (ESIP) Winter Meeting, Bethesda MD, January 2019
18. **Fayne JV** et al., Surface Water Detection and Elevation Retrieval from AirSWOT Airborne Ka-band Radar Interferometry, AGU Annual Meeting, Washington, DC, December 2018
19. **Fayne JV** et al., Differentiating wetland and open water surfaces using optical and SAR remote sensing, the 39th Canadian Symposium on Remote Sensing, Saskatoon, June 2018
20. **Fayne JV** et al., Historic Analyses of Thinning Ice and Melt Pond Identification in the Arctic Beaufort and Chukchi Seas, AGU Ocean Sciences Meeting, Portland Oregon, February 2018
21. **Fayne JV** et al., Updates on AirSWOT Flight Data Processing for SWOT Calibration & Validation, American Society for Photogrammetry and Remote Sensing (ASPRS) – International LiDAR Mapping Forum (ILMF), Denver, February 2018
22. **Fayne JV** et al., Landslide Detection in the Carlyon Beach, WA Peninsula: Analysis of High-Resolution DEMs, AGU Annual Meeting, New Orleans, December 2017
23. **Fayne JV** et al., Predicting groundwater fluctuations in major global river basins: Case study of California and Mekong River Basins, Baltimore, March 2017
24. **Fayne JV** et al., Predicting the variability of water resources in eleven global river basins using multivariate and decision tree analysis with satellite data, AGU Annual Meeting, San Francisco, December 2016
25. **Fayne JV** et al., Decreased Freshwater Storage Leading to the Intrusion of Saltwater and Organic Compounds, AAG Annual Meeting, Boston April 2016
26. **Fayne JV** et al., Predicting Water Resource Variability in the Major River Basins of the World Using Satellite and Model Data, ASPRS IGTF, Fort Worth TX, April 2016
27. **Fayne JV** et al., Estimation of Variability in Water Resources in the Major River Basins of the World Using Satellite Data, AGU Annual Meeting, San Francisco, December 2015
28. **Fayne JV** et al., Real-Time Multi-Scale Mapping for Emergency Management, International Cartographic Conference, Rio de Janeiro, August 2015
29. **Fayne JV** et al., Validating Flood Mapping Products Using Elevation Model Comparison and Spectral Reflectance, United States Geospatial Intelligence Foundation (USGIF) GEOINT Symposium, Washington DC, June 2015

30. **Fayne JV** [*sole author*]. Improving the Longevity of LiDAR Datasets by Defining Potential Areas of Rapid Change, the International LiDAR Mapping Forum (ILMF), Denver, February 2015
31. **Fayne JV** et al., Validating Flood Mapping Products Using a Digital Elevation Model Comparison Technique, AGU Annual Meeting, San Francisco, December 2014
32. **Fayne JV** et al. [*team*], Mapping Ecosystem Services Change in Coastal Belize Based on Landsat Data, ASPRS Annual Conference, Louisville, March 2014
33. **Fayne JV** [*sole author*]. Indonesia: A Transit Study, George Mason University GIS Day, Fairfax VA, November 2013

Reviewing and Refereeing Activity

Journal Reviews

AGU Earth and Space Science, Hydrological Sciences Journal, Hydrology and Earth System Science, Applied Meteorology and Climatology, MDPI Remote Sensing

Proposal Reviews

National Aeronautics and Space Administration

Field Experience

2013 WOEIP West Oakland Environmental Indicators	Gentrification Processes and Land Ownership in West Oakland with UC Berkeley Department of City and Regional Planning	West Oakland, California
2015 SMAPEX-15 Soil Moisture Active Passive	SMAPEX-15 Field Validation of 5cm-Depth Satellite Soil Moisture Products	Yanco, New South Wales, Australia
2018 SWOT Surface Water and Ocean Topography	Calibration and Validation Pre-Planning and Methodology Development Surveys	Saskatoon, Saskatchewan; Peace Athabasca Delta, Alberta, Canada
2019 SWOT Surface Water and Ocean Topography	Calibration and Validation Pre-Planning and Methodology Development Surveys	Peace Athabasca Delta, Alberta, Canada
2018-2019 UAVSAR, AirSWOT, and SWOT	Calibration and Validation Methods Development and Testing; Marsh Dynamics Assessment	Carpinteria Salt Marsh; Piute Ponds, California

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