Cathleen E. Jones, Ph.D.

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Education: **Ph.D., Physics, California Institute of Technology**
M.S., Physics, California Institute of Technology
B.S., Physics, Texas A&M University

Research overview: *Advancing an understanding of the Earth through remote sensing. Use of synthetic aperture radar (SAR) polarimetry (PolSAR) and interferometry (InSAR) for studies of natural and anthropogenic hazards with emphasis on land subsidence, security of critical infrastructure, identification of marine pollution and its impact on landforms and ecosystems, and improved coastal resiliency. Current leadership roles in NASA Earth Observing missions as Applications Lead of the NASA NISAR Science Team and Deputy Principal Investigator of Earth Venture-Suborbital Delta-X mission, a cross-disciplinary study of processes controlling land gain and sustainability in the Mississippi River Delta. Work includes measurement of subsidence in deltas and low-lying coastal areas including the Sacramento-San Joaquin Delta and Greater New Orleans; detection of sinkhole precursory ground deformation; and measurement of water level change in wetlands (hydrological connectivity) with InSAR. Other research advancements include development of SAR-based methods to determine oil slick thickness in ocean waters and development of algorithms that enable use of InSAR for detection of small-scale surface changes impacting flood control (levees, dams) and water conveyance infrastructure (aqueducts, pipelines).*

I. History of Employment

Senior Research Scientist and Signal Analysis Engineer 6, Jet Propulsion Laboratory, Radar Science and Engineering Section, Pasadena CA, 2004-present

Adjunct Professor 2, Dept. of Physics and Technology, UiT The Arctic University of Norway, Tromsø, Norway, 2016-present

Senior Test and Applications Engineer, SiWave Inc., Arcadia CA, 2001-2002

Senior Scientist, Tanner Research Inc., Pasadena CA, 2000-2001

Senior Research Associate, Physics Division, California Institute of Technology, 1997-2000

Member Technical Staff, Radar Science and Engineering Division, Jet Propulsion Laboratory, 1996-1997

Assistant Physicist, Medium Energy Nuclear Physics Group, Physics Division, Argonne National Laboratory, 1993-1996

Postdoctoral Appointee, University of Wisconsin, Madison, 1991-1992

II. Earth Science and Applications Research

NASA NISAR Mission Science Team, Applications Lead, https://nisar.jpl.nasa.gov (2016-present)

Deputy Principal Investigator for the NASA Earth Venture-Suborbital Delta-X mission, https://deltax.jpl.nasa.gov (2019-present)

Member, NASA ASAR Science Team. Project is to study the combination of L-band and S-band SAR for oil slick characterization and monitoring the status of California giant kelp. (2019-2024)

Member and Applications Lead, NASA Surface Topography and Vegetation Targeted Observable Study Team. Led the team's applications-related activities. (2019-2022)

Co-Investigator and JPL Lead for a NASA Applied Science Disasters Program ROSES-funded project for oil thickness determination using SAR to support spill response in collaboration with NOAA. (2019-present)

Principal Investigator for a study by the Dept. of Interior Bureau of Safety and Environmental Enforcement (BSEE) to assess the capability of L-band SAR for determining oil slick thickness and volume. (2017-2023)

Principal Investigator for a study funded by Louisiana State University to optimize ground-based geodesy measurements to improve the use of InSAR for measuring subsidence in southern Louisiana. (2019-2024)

Principal Investigator for a NASA Earth Science and Technology Office project to develop and implement a smart tasking urgent response request system that accommodates multi-mission, multi-instrument, and multi-sensor-web architecture. (2019-2021)

Principal Investigator for two studies funded by the California Dept. of Water Resources (DWR) to (1) measure earthen levee and island-wide subsidence in the Sacramento Delta and (2) identify subsidence and seepage of the California Aqueduct using the Uninhabited Aerial Vehicle Synthetic Aperture Radar (UAVSAR) and radar interferometry (InSAR). (2014-2019)

Co-Principal Investigator (with Mike Lamb, Caltech) for the Caltech/JPL President's & Director's Fund study, *Evolution and sustainability of natural and engineered coastal deltaic landscapes*, to develop and validate combined SAR and multi-spectral methods used to prove the viability of the Delta-X study. (2015-2016)

Principal Investigator for a study funded by the California Dept. of Water Resources (DWR) to identify landslides, fault creep and other surface deformation in proximity to the South Bay Aqueduct. (2015-2016)

Principal Investigator for project funded by the Dept. of Homeland Security (DHS) to optimize radar remote sensing for levee health and safety assessment using either airborne and spaceborne synthetic aperture radars and interferometric processing methods in conjunction with end-users. (2012-2017)

Principal Investigator / Co-Investigator for five NASA ROSES studies to measure and track the impact of the Deepwater Horizon oil spill in the open ocean and coastal wetlands, and further to develop algorithms that use L-band radar for oil click characterization, involving participation in a Norwegian oil-on-water release exercise in the North Sea. (2010 - 2018)

Principal Investigator for the multi-year UAVSAR Gulf Oil Spill campaign to characterize surface oil and track the extent and impact of the Deepwater Horizon oil spill on the coastal ecosystems of the Gulf of Mexico. (2010-2012)

Principle Investigator for a study funded through NASA ROSES to evaluate the capability of high spatial resolution SAR using the UAVSAR instrument to detect and monitor subsidence of levees and land in the Sacramento-San Joaquin Delta. (2008-2013)

Leader of two Tiger Teams at JPL for the SMAP mission: (1) To develop and validate techniques for L-band RFI avoidance; and (2) to develop methods for SMAP L-band radar non-interference with FAA radars in support of the SMAP mission.

Leader of the team that implemented the automated interferometric processing and product delivery for the UAVSAR project.

Radar data processing and algorithm development in support of a range of radar science topics, including SAR imaging of ocean waves, and modeling landing radars for the Mars Phoenix & Mars Science Laboratory missions.

III. Awards (selected)

- Remote Sensing and Drought Science Service Award, California Dept. of Water Resources (2015)
- Kevin J. Neese Award, Groundwater Resources Association of California, team award to the NASA-JPL Land Subsidence Monitoring Team (2019)
- NASA Exceptional Achievement Medal (2014) – For groundbreaking contributions in the application of InSAR to the study of critical natural and manmade hazards
- NASA Exceptional Achievement Medal (2015) – For creativity and leadership in streamlining the UAVSAR repeat pass interferometry processor.
- Jet Propulsion Laboratory Magellan Award for Leadership or Excellence in a Field of Knowledge (2023)
- Jet Propulsion Laboratory Explorer Award for Scientific and Technical Excellence (2013)
- Jet Propulsion Laboratory Voyager Award (2022, 2020, 2016, 2015); Ranger Award (2014); Mariner Award (2014, 2013, 2009)
- Editors' Citation for Excellence in Refereeing - Water Resources Research, American Geophysical Union (2021)

IV. Professional Affiliation

- American Geophysical Union (AGU), Member
- Institute of Electrical and Electronics Engineers (IEEE), Geoscience and Remote Sensing Society, Member

V. Community Service

- Editor, American Geophysical Union journal "Earth and Space Science" (2021-present)
- Associate Editor, IEEE Trans. on Geoscience and Remote Sensing (2019-2023)
- Organizing committee, International Coordination Group for Spaceborne Synthetic Aperture Radar (SAR) Missions, Thematic Area 2: InSAR (2021-present)
- Subject Matter Expert on Infrastructure (Dams/Levees), Arkansas-White-Red-River Basin Workshop, NASA Western Water Applications Office, Oklahoma City, Oklahoma, June 2024.
- Organizing committee member, National Academies of Sciences' Workshop on Groundwater Recharge and Flow, Washington D.C., June 2019
- Reviewer of the 2023 Louisiana Coastal Master Plan, Subsidence section, for the Coastal Protection and Restoration Agency, State of Louisiana, 2020
- Peer reviewer for multiple journals, including Nature, Science Advances, Proceedings of the National Academy of Sciences, Remote Sensing of Environment, IEEE Trans. Geoscience & Remote Sensing (TGRS), IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing (JSTARS), Physical Review Letters, Journal of Photogrammetry and Remote Sensing, Hydrogeology, Geophysical Research Letters, Water Resources Research
- Session chair/cochair for numerous conferences & workshops, including AGU, EGU, IGARSS
- Proposal reviewer for National Science Foundation, U.S. Geological Survey (USGS), NASA, European Space Agency, German Space Agency (DLR)

VI. Peer-reviewed Publications and Books

h-index = 51 (https://www.researchgate.net/profile/Cathleen_Jones)(Google Scholar)

Book Editor

Chaussard, E., **Jones, C.**, Chen, J., Donnellan, A. (eds) (2024) Remote Sensing for Characterization of Geohazards and Natural Resources, Springer, ISBN 978-3-031-59306-2 (eBook) 978-3-031-59306-5 (print).

Book Chapters

1. **Jones, C. E.** (2024). Sinkholes, in *Remote Sensing Applications to Characterization of Geohazards and Natural Resources*, ed. E. Chaussard, C. Jones, A. Donnellan, and J. Chen, Springer Nature.
2. **Jones, C. E.**, Farr, T., Liu, Z., Miller, M. (2021). Measuring subsidence in California and its impact on water conveyance infrastructure, in *Advances in Remote Sensing for Infrastructure Monitoring*, ed. V. Singhroy, Springer Books, doi:10.1007/978-3-030-59109-0.
3. Brekke, C., **C. E. Jones** (2020). SAR oil spill imaging, interpretation and information retrieval techniques, in *Maritime Surveillance with Synthetic Aperture Radar*, ed. G. Di Martino and A. Iodice, The Institute of Engineering and Technology, p. 227-267.
4. **Jones, C. E.**, Dudas, J., Bawden, G. W. (2016). Application of remote sensing to assessment of water conveyance infrastructure integrity. In R. L. Anderson and H. Ferriz (Eds.), *Applied Geology in California*, Special Publication 26. Association of Environmental and Engineering Geologists, Star Publishing Company.
5. **Jones, C. E.** (2016). A practical guide to synthetic aperture radar for engineering and environmental geologists. In R. L. Anderson and H. Ferriz (Eds.), *Applied Geology in California*, Special Publication 26. Association of Environmental and Engineering Geologists, Star Publishing Company.
6. **Jones, C. E.,** Minchew, B., Holt, B., & Hensley, S. (2011). Studies of the Deepwater Horizon oil spill with the UAVSAR radar. In Y. Liu et al. (Eds), *Monitoring and Modeling the Deepwater Horizon Oil Spill: A Record-Breaking Enterprise* (Geophys. Monogr. Ser., Vol. 195, pp. 33-50). Washington D. C.: American Geophysical Union.

Peer-reviewed Journal Publications (selected, of 119 total)

1. Simard, M. **C. E. Jones**, S. Belhadj-aissa; P. Biswas; E. Castañeda-Moya; A. Christensen et al. (2025). Delta-X: An airborne remote sensing framework to evaluate land building processes in coastal deltas, *Remote Sensing of Environment*, in review.
2. Fiaschi, S., M. Allison, **C. E. Jones** (2025) Land subsidence in Greater New Orleans: insights into underlying drivers and future storm surge risk, *Science Advances*, in review.

3. Varugu, B. K., **C. E. Jones**, T. Oliver-Cabrera, M. Simard, D. J. Jensen (2025). Study of hydrologic connectivity and tidal influence on water flow across Louisiana coastal wetlands using rapid repeat InSAR, *Remote Sensing*, 17, 459. https://doi.org/10.3390/rs17030459
4. Mastro, P., A. Pepe, **C. E. Jones** (2024). An adaptive, statistical multiscale phase unwrapping approach to process large swath interferograms, *IEEE TGRS*, 62, 5229217. https://doi.org/10.1109/TGRS.2024.3493596
5. Wang, K., J. Chen, E. Valseth, G. Wells, S. Bettadpur, **C. E. Jones**, C. Dawson (2024). Subtle land subsidence elevates future storm surge risks along the Gulf Coast of the United States, *JGR: Earth Surfaces*, 129, e2024JF007858. https://doi.org/10. 1029/2024JF007858
6. Belhadj-aissa, S., M. Simard, **C. E. Jones**, T. Oliver-Cabrera, A. Christensen (2024). Separation of water level change from atmospheric artifacts through application of Independent Component Analysis to InSAR time series, *Earth and Space Science*, 11, e2024EA003540. https://doi.org/10.1029/2024EA003540
7. Zhang, X., **C. E. Jones**, M. Simard, P. Passalacqua, S. Fagherazzi (2024). Vegetation promotes flow retardation and retention in deltaic wetlands, *Limnology and Oceanography Letters*, *9,* 644-652. https://doi.org/10.1002/lol2.10376
8. An, K., **C. E. Jones**, Y. Lou (2024). Assessment of pre- and post-fire fuel availability for wildfire management based on L-band polarimetric SAR, *Earth and Space Science*, 11, e2023EA002943. https://doi.org/10.1029/2023EA002943
9. Quigley, C., A. M. Johansson, **C. E. Jones**, B. Holt (2024). Distinguishing mineral oil slicks from low wind areas using rapid repeat synthetic aperture radar imagery, *IEEE JSTARS*, 17, 7323-7342. https://doi.org/10.1109/JSTARS.2024.3376980
10. Varugu, B., **C. E. Jones**, K. Wang, J. Chen, R. Osborne, G. Voyiadjis (2024). Optimized GNSS cal/val site selection for expanding InSAR viability in areas with low phase coherence: a case study for southern Louisiana, *IEEE JSTARS*, 17, 4875-4889. https://doi.org/10.1109/JSTARS.2024.3361800
11. Cortese, L., C. Donatelli, X. Zhang, J. A. Nghiem, M. Simard, **C. E. Jones**, M. Denbina, C. G. Fichot, J. P. Herringmeyer, S. Fagherazzi (2024). Coupling numerical models of deltaic wetlands with AirSWOT, UAVSAR, and AVIRIS-NG remote sensing data, *Biogeosciences*, 21, 241-260. https://doi.org/10.5194/bg-21-241-2024
12. Donatelli, C., P. Passalacqua, D. Jensen, T. Oliver-Cabrera, **C. E. Jones**, S. Fagherazzi (2023). Spatial variability in salt marsh drainage controlled by small scale topography, *JGR Earth Surface*, 128(11), e2023JF007219. https://doi.org/10.1029/2023JF007219
13. Jaruwatanadilok, S., X. Duan, B. Holt, **C. E. Jones** (2023). A study of the sensitivity of SAR ocean backscatter to oil slick properties using an electromagnetic scattering model, *IEEE Transactions on Geoscience and Remote Sensing*, 61, 2004516. https://doi.org/10.1109/TGRS.2023.3308010
14. **Jones, C. E.** (2023). An automated algorithm for calculating the ocean contrast in support of oil spill response, *Marine Pollution Bulletin*, 191, 114952. https://doi.org/10.1016/j.marpolbul.2023.114952
15. Zhang, X., **C. E. Jones**, T. Oliver-Cabrera, M. Simard, S. Fagherazzi (2022). Using rapid repeat SAR interferometry to improve hydrodynamic models of flood propagation in coastal wetlands. *Advances in Water Resources*, 159, 104088. https://doi.org/10.1016/j.advwatres.2021.104088
16. Oliver-Cabrera, T., **C. E. Jones**, Y. Zhang, M. Simard (2021). InSAR phase unwrapping error correction for rapid repeat measurements of water level change in wetlands, *IEEE Transactions on Geoscience and Remote Sensing*, 60, 5215115. doi:10.1109/TGRS.2021.3108751
17. Jones, J., **C. E. Jones**, D. Bekaert (2021). InSAR, a new tool for monitoring the old problem of land subsidence in the San Joaquin Valley, California. *Journal of the American Water Resources Association*, 58(6), 995-1001. doi: 10.1111/1752-1688.12942
18. De Laurentiis, L., **C. E. Jones**, B. Holt, F. Del Frate, G. Sciavon (2020). Deep learning for mineral and biogenic oil slick classification with airborne synthetic aperture radar data. *IEEE Transactions on Geoscience and Remote Sensing*, 59(10), 8455-8469. doi:10.1109/TGRS.2020.3034722
19. Pepe, A., P. Mastro, **C. E. Jones** (2020). Adaptive multi-looking for multi-temporal differential SAR interferometric data stack using directional statistics, *IEEE Transactions on Geoscience and Remote Sensing*, 59(8), 6706-6721. doi: 10.1109/TGRS.2020.3030003
20. Miller, M., **C. E. Jones**, S. Sangha, D. Bekaert (2020). Rapid drought-induced land subsidence and its impact on the California Aqueduct. *Remote Sensing of Environment*, 251, 112063. doi:10.1016/j.rse.2020.112063
21. Espeseth, M., **C. E. Jones**, B. Holt, C. Brekke, S. Skrunes (2020). Oil spill response-oriented information products derived from a rapid repeat time-series of SAR images, IEEE *JSTARS*, 13, 3448-3461. doi: 10.1109/JSTARS.2020.3003686

22. Espeseth, M., C. Brekke, **C. E. Jones**, B. Holt, A. Freeman (2019). The impact of system noise in polarimetric SAR imagery on oil spill observations, *IEEE Transactions on Geoscience and Remote Sensing*, 58(6), 4194-4214. doi:10.1109/TGRS.2019.2961684
23. Garcia-Pineda, O., G. Staples, **C. E. Jones**, C. Hu, B. Holt, V. Kourafalou, G. Graettinger, L. DiPinto, E. Ramirez, D. Streett, J. Cho, G. Swayze, S. Sun, D. Garcia, F. Haces-Garcia (2020). Classification of oil spill by thicknesses using multiple remote sensors, *Remote Sensing of Environment*, 236, 111421. https://doi.org/10.1016/j.rse.2019.111421
24. Bekaert, D. S. P., **C. E. Jones**, K. An, M.-H. Huang (2018). Exploiting UAVSAR for a comprehensive analysis of subsidence in the Sacramento Delta, *Remote Sensing of Environment*, 220, 124-134, doi:10.1016/j.rse.2018.10.023.
25. Ayoub, F., **C. E. Jones**, Lamb, M., Holt, B., Shaw, J., Mohrig, D., & Wagner, R. W. (2018). Inferring surface currents within submerged, vegetated deltaic islands and wetlands from multi-pass airborne SAR, *Remote Sensing of Environment*, *212*, 148-160, doi:10.1016/j.rse.2018.04.035.
26. **Jones, C. E.**, B. Holt (2018). Experimental L-band airborne SAR for oil spill response at sea and in coastal waters, Sensors, 18(2), 641, doi:10.3390/s18020641.
27. Duan, X., & **C. E. Jones** (2017). Coherent microwave scattering model of marsh grass, *Radio Science*, *52*(12), 1578-1595, doi:10.1002/2017RS006325.
28. Bekaert, D. S. P., Hamlington, B. D., Buzzanga, B., **Jones, C. E.** (2017). Spaceborne synthetic aperture radar survey of subsidence in Hampton Roads, Virginia (USA), *Scientific Reports*, *7*:14752, DOI:10.1038/s41598-017-15309-5.
29. Espeseth, M., S. Skrunes, **C. E. Jones**, C. Brekke, B. Holt, A. Doulgeris (2017). Analysis of Evolving Oil Spills in Full-Polarimetric and Hybrid-Polarity SAR, *IEEE Transactions on Geoscience and Remote Sensing, 55*(7), 4190-4210, DOI:10.1109/TGRS.2017.2690001.
30. Rangoonwala, A., **C. E. Jones**, Chi, Z & Ramsey III, E. (2016). Operational Shoreline Mapping with High Spatial Resolution Radar and Geographic Processing. *Photogramm. Eng. Remote Sens*, *83*(3), 237-246, doi:10.14358/PERS.83.3.237.
31. Deverel, S., S. Bachand, S. Brandenberg, **C. E. Jones**, J. Stewart, & P. Zimmaro (2016). Factors and processes affecting Delta levee system vulnerability, *San Francisco Estuary and Watershed Science*, *14*(4), jmie_sfews_33460. Retrieved from: http://escholarship.org/uc/item/36t9s0mp.
32. Rangoonwala, A., **C. E. Jones**, & Ramsey III, E. (2016). Wetland shoreline recession in the Mississippi River Delta from petroleum oiling and cyclonic storms, *Geophysical Res. Lett., 43*(22), 11652-11660, doi:10.1002/2016GL070624.
33. **Jones, C. E.**, K.-F. Dagestad, O. Breivik, B. Holt, J. Rohrs, K. H. Christensen, M. Espeseth, C. Brekke, S. Skrunes (2016). Measurement and modeling of oil slick transport, *J. Geophysical Res.-Oceans, 121,* 7759-7775, doi:10.1002/2016JC012113.
34. Ramsey, E., Rangoonwala, A., and **Jones, C. E**. (2016). Marsh canopy structure changes and the Deepwater Horizon oil spill, *Remote Sensing of Environment*, *186*, 350-357, doi: 10.1016/j.rse.2016.08.001.
35. Latini, D., Del Frate, F., **Jones, C. E.** (2016). Multi-frequency and polarimetric quantitative analysis of the Gulf of Mexico oil spill event comparing different SAR systems. *Remote Sensing of Environment*, *183*, 26-42, doi:10.1016/j.rse.2016.05.014.
36. Shaw, J. B., Ayoub, F., **Jones, C. E.**, Lamb, M., Holt, B. Wagner, R. W., Coffey, T., Chadwick, J. A., Mohrig, D. (2016). Airborne radar imaging of subaqueous channel evolution in Wax Lake Delta, Louisiana, USA, *Geophysical Research Letters*, *43*, 5035-5042, doi:10.1002/2016GL068770.
37. **Jones, C. E.**, An, K., Blom, R. G., Kent, J. D., Ivins, E. R., Bekaert, D. (2016). Anthropogenic and geologic influences on subsidence in the vicinity of New Orleans, Louisiana, *J. Geophysical Res.-Solid Earth*, *121*, 3867-3887, doi:10.1002/2015JB012636.
38. Sharma, P., **Jones, C. E.**, Dudas, J., Bawden, G., S. Deverel (2016). Monitoring of subsidence with UAVSAR on Sherman Island in California's Sacramento-San Joaquin delta. *Remote Sensing of Environment*, *181*, 218-236, doi:10.1016/j.rse.2016.04.012.
39. Ramsey, E., Rangoonwala, A., and **Jones, C. E.** (2015). Marsh canopy leaf area and orientation calculated for improved marsh structure mapping. *PE&RS*, *81(10),* 807-816, doi: 10.14358/PERS.81.10.807.
40. Ramsey, E., Rangoonwala, A., **Jones, C. E.** (2015). Structural classification of marshes with polarimetric SAR: Highlighting the temporal mapping of marshes exposed to oil. *Remote Sensing*, *7*, 11295-11321, doi:10.3390/rs70911295.

41. Ramsey, E., Meyer, B. M., Rangoonwala, A., Overton, E., **Jones, C. E.**, & Bannister, T. (2014). Oil source-fingerprinting in support of polarimetric radar mapping of Macondo-252 oil in Gulf Coast marshes. *Marine Pollution Bulletin*, *89*(1), 85-95.
42. Ramsey, E., Rangoonwala, A., Chi, Z., **Jones, C. E.**, & Bannister, T. (2014). Marsh Dieback, loss, and recovery mapped with satellite optical, airborne polarimetric radar, and field data. *Remote Sensing of Environment, 152*, 364-374.
43. **Jones, C. E.,** R. G. Blom (2014). Bayou Corne, Louisiana, sinkhole: Precursory deformation measured by radar interferometry. *Geology*, *42*(2), 111-114. https://doi.org/10.1130/G34972.1
44. Brekke, C., B. Holt, **C. E. Jones**, S. Skrunes (2014). Discrimination of oil spills from newly formed sea ice by synthetic aperture radar. *Remote Sensing of Environment*, *145*, 1-14.
45. Minchew, B., **C. E. Jones**, B. Holt (2012). Polarimetric analysis of backscatter from the Deepwater Horizon oil spill using L-band synthetic aperture radar. *IEEE Transactions on Geoscience and Remote Sensing, 50*(10), 3812-3830.
46. Ramsey III, E., A. Rangoonwala, Y. Suzuoki, **C. E. Jones** (2011). Oil detection in a coastal marsh with polarimetric Synthetic Aperture Radar (SAR). *Remote Sens*, *3*(12), 2630-2662.

VII. Selected Presentations (presenter only)

(*invited*) Microwave Remote Sensing for Mapping Floods and their Impact, AGU Fall Meeting, Washington DC, Dec. 2024.

(invited) Updates on OPERA and NISAR, Gulf Sea Level Variation and Rise Grant All Hands Meeting, National Academies of Sciences, Engineering, and Medicine, Washington, DC, Aug. 2024.

(invited) NISAR Applications & Disaster Response, ESA(European Space Agency)/NASA Joint Programme Planning Group, Washington, DC, June 2024.

(*invited*) Exploring River Deltas with NASA Data: The Delta-X Mission, NASA Earthdata Webinar, June 2024.

(*invited*) The Many Applications of the NISAR Mission, Kerala Global Science Festival, Thiruvananthapuram, India, Jan. 2024.

(*invited speaker and panelist*) Remote Sensing of Levees and Land Subsidence, Workshop on Managing Subsided Lands in the Sacramento-San Joaquin Delta, Delta Independent Science Board, Sacramento, CA, Oct. 2023.

(*invited*) Update on the NASA-ISRO NISAR Mission, Earth Observatory of Singapore, Singapore, Sept. 2023.

(*invited*) Delta-X: How Can Deltas Survive a Century of Rising Seas?, Climate and Ocean Variability, Predictability and Change (CLIVAR) Summit, Seattle, WA, Aug. 2023.

An Automated Algorithm for Calculating the Ocean Contrast with Application to Estimation of Oil Slick Thickness, IEEE International Geoscience and Remote Sensing Symposium (IGARSS) 2023, Pasadena, CA, July 2023.

(*invited*) Slick Thickness Characterization Based on Low Noise, Polarized Synthetic Aperture Radar: A Study Using the NASA UAVSAR Instrument, Blue Technology Center of Excellence Webinar, U.S. Coast Guard, June 2023.

(*invited*) Update on the NASA-ISRO NISAR Mission, Norwegian Space Agency, Oslo, Norway, May 2023.

Automation of Slick Detection Classification for Improved Monitoring with SAR, SEASAR 2023, Svalbard.

(*invited*) Applications and Opportunities of NASA's Upcoming NISAR Mission, Applied Earth Observations Innovation Partnership (AEIOP) Webinar, Dec. 2022.

(invited) Hazard Assessment with SAR: What to Expect from the NISAR Mission, EGU 2022, Vienna, Austria, May 2022.

(*invited*) The NISAR Mission's Capabilities for Natural Hazard Monitoring, IGARSS 2021 (virtual), July 2021.

(*invited speaker and panelist)* An Automated Smart Tasking System to Support NASA Urgent Response, 2021 Earth Science Technology Forum (virtual), July 2021.

(*invited)* InSAR Evaluation in Support of Louisiana Regional Geospatial Modeling, Louisiana State University Center for GeoInformatics National Spatial Reference System Outreach Event (virtual), June 2021.

(*invited*) A Study of the Capabilities and Limitations of L-band SAR for Oil Thickness Measurement, 13th European Conference on Synthetic Aperture Radar (EUSAR), March 2021.

Mapping Wetland Hydrological Connectivity in the Wax Lake Delta Using Rapid Repeat SAR Images, AGU 2020 Fall Meeting (virtual), Dec. 2020.

(invited keynote) The U.S. research landscape in a CIRFA perspective, Centre for Integrated Remote Sensing and Forecasting for Arctic Operations Annual Meeting (virtual), Oct. 2020.

(invited keynote) L-band InSAR for Critical Infrastructure and Hazard Applications: NASA's Present and Future Programs, Centre for Observation and Modelling of Earthquakes, Volcanoes and Tectonics (COMET) Annual Meeting (virtual), June 2020.

(invited) The ups and downs of low-lying coastal land elevation, EGU 2019, Vienna, Austria, April 2019.

(invited) Studies of Louisiana's coastal waters and wetlands using rapid repeat radar imaging, Tulane University, Feb. 2019.

Application of airborne SAR to extreme flooding: A case study of the southeast Texas rivers during Hurricane Harvey emergency response, AGU Fall Meeting 2018, Washington D.C., Dec. 2018.

(invited plenary speaker) Synthetic Aperture Radar: A Tool for Remote Sensing of Infrastructure, Utilis Innovation Summit, San Diego, CA, Dec. 2018.

(invited) Oh, that sinking feeling: Observations of landscape change in the Mississippi River delta, Geological Society of America Annual Meeting, Indianapolis, IN, Nov. 2018.

(invited) SAR observations of water quality, CEOS Freshwater from Space Expert Workshop, Delft, Netherlands, Nov 2018.

(invited) Sinkhole detection from the ground, air and space, U. S. Congressional Hazards Caucus and Hazard Caucus Alliance Briefing, Washington D.C., May 2018.

(invited) Studies of Louisiana's deltas and wetlands using SAR, AGU 2017, New Orleans, La., Dec. 2017.

(invited) Overview of the NASA-ISRO SAR mission and its application to critical infrastructure monitoring, Dept. of Homeland Security Joint Nuclear Critical Infrastructure Partnership Advisory Council, Wash. D.C., Dec. 2017.

(invited) Measurement of subsidence in the Central Valley and its impact on the California Aqueduct using UAVSAR, EarthScope Hydro-geodesy Applications Workshop, Scripps, San Diego, CA, Oct. 2017.

(invited) Sink or Swim? Using radar to protect California's water supply, Von Karman Lecture, JPL Lecture Series, Pasadena, CA, Oct. 2017.

(invited) From drought to flood: InSAR-based monitoring of California's levees & aqueducts, Earth Observing Seminar/Retreat for Students and Postdocs, Tromso, Norway, Sept. 2017.

(invited) Land subsidence measurements using airborne radar: Impact to water conveyance infrastructure in the San Joaquin Valley, Subsidence Workshop, California State Univ./Fresno, Fresno, CA, Aug. 2017.

From drought to flood: Utilizing SAR to assess the status of levees and aqueducts, IGARSS 2017, Fort Worth, TX, July 2017.

(invited) Land subsidence measurements using airborne radar: Impact to water conveyance infrastructure. Western States Water Council, Rohnert Park, CA, June 2017.

Use of SAR remote sensing for critical infrastructure applications, NISAR Critical Infrastructure Applications Workshop, Wash. D.C., June 2017.

(invited) Land subsidence measurements using airborne radar: Impact to water conveyance infrastructure. Association of California Water Agencies, Monterey, CA, May 2017.

(invited) Levee monitoring and other coastal applications of radar remote sensing. Presentation to the United Nations Development Program, JPL, May 2017.

(invited) Land subsidence measurements using airborne radar: Impact to water conveyance infrastructure, presentation to the California Council on Science and Technology, JPL, May 2017.

(invited) Measurement of subsidence in New Orleans and the Mississippi River delta using radar interferometry (InSAR). Tulane Engineering Forum, New Orleans, La., 20 Apr. 2017.

Shoreline recession in Barataria Bay from the Deepwater Horizon oil spill. Gulf of Mexico Oil Spill and Ecosystem Science Conference, New Orleans, La., February 2017.

Using InSAR time series to identify geologic hazards associated with the Hayward and Calaveras faults along the South Bay Aqueduct. AGU Fall Meeting, San Francisco, Ca., Dec. 2016.

(invited) Airborne Radar Remote Sensing of California's Aqueducts and Levees, Univ. California Los Angeles, Civil and Environmental Engineering Dept. 200 seminar series, 1 Nov. 2016.

(invited) Measurement and Modeling of the Transport and Evolution of Oil Slicks on Open Water, UiT The Arctic University of Norway, Center for Integrated Remote Sensing and Forecasting for Arctic Operations (CIRFA), Tromsø, Norway, 13 October 2016.

(invited) Radar Remote Sensing of Subsidence in the Sacramento-San Joaquin Delta, Delta Independent Science Board, Workshop on Delta Levee Science, Davis, CA, 14 July 2016.

(invited) Monitoring Water Infrastructure with Airborne Radar, Metropolitan Water District, Los Angeles, CA, 13 June 2016.

(invited) Radar-based Levee Health Monitoring Methods, Dams Sector Meeting, Joint Levee Sub-Sector Meeting Knoxville, TN, 14-16 June 2016.

(invited) (1) Using Airborne SAR Observations to Monitor Critical Water Infrastructure & *(2)* Using InSAR Date to Monitor Land Subsidence, Western States Water Council, San Diego, CA, 6-7 June 2016.

Subsidence of the Sacramento Delta (California), 2nd International Workshop on Coastal Subsidence, Venice, Italy, 30 May – 1 June 2016.

Anthropogenic and geologic influences on subsidence in the vicinity of New Orleans, Louisiana (USA), 2nd International Workshop on Coastal Subsidence, Venice, Italy, 30 May – 1 June, 2016.

(invited) Using Aircraft-Based InSAR for Monitoring Critical Water Infrastructure, National Water Research Institute Drought Response Workshop, Irvine, CA, 16-17 May 2016.

(invited) Localized subsidence in the vicinity of New Orleans derived from high resolution InSAR, Data Flow Conference, Baton Rouge, LA, 9-10 May 2016.

(invited) Radar remote sensing for identifying and characterizing oil spills in coastal and open waters, 10th National Monitoring Conference, National Water Quality Management, Tampa, FL, 3-5 May 2016.

(invited) From drought to flood: Radar-based monitoring of California's aqueducts and levees, "One Water LA" Educational Initiative, LAUSD and MWD, 14 April 2016, televised on PBS.

(invited) Characterizing surface deformation and its impact to critical infrastructure with UAVSAR, UNAVCO Science Meeting, Boulder, CO, 29 March 2016.

(invited) Airborne remote sensing of infrastructure, Geotechnical and Structural Instrumentation, Monitoring, and Information Engineering Short Course, Colorado School of Mines, 16-18 March 2016.

(invited) When BAD STUFF happens: An overview of UAVSAR hazard applications, NASA HQ Brown Bag Seminar, Washington D.C., 10 March 2016.

(invited) Oil slick characterization using synthetic aperture radar, Coast Guard Interagency Committee on Oil Pollution Research, Arlington, VA, 9 March 2016.

(invited) Update on land subsidence monitoring – UAVSAR California Aqueduct, Ca. Dept. of Water Resources briefing to water agencies, Sacramento, CA, 23 February 2016.

VIII. Teaching / Mentoring

- Postdoctoral Scholars
  - Bhuvan Varugu, Jet Propulsion Laboratory, 2021-2024 (currently at Ca. Dept. of Water Resources)
  - Cornelius Quigley, UiT The Arctic University of Norway, 2021-2023 (currently at Helmholtz-Zentrum Dresden-Rossendorf (HZDR))
  - Talib Oliver-Cabrera, Jet Propulsion Laboratory (JPL), 2019-2022 (currently at JPL)
  - Karen An, Jet Propulsion Laboratory, 2020-2022 (currently at JPL)
  - Megan Miller, Jet Propulsion Laboratory, 2018-2021 (currently at CGG, Inc.)
  - David Bekaert, Jet Propulsion Laboratory, 2015-2016 (currently at JPL)
  - Priyanka Sharma, Jet Propulsion Laboratory, 2014-2015 (currently at JPL)
  - James Fedchek, Argonne National Laboratory, 1995-1996 (currently at National Bureau of Standards and Technology)
- Graduate Students
  - Jakub Petricek, UiT The Arctic University of Norway, Ph.D. advisor, 2025 - ongoing
  - Rory Escobedo, Tulane University, M.S. advisor, 2022 - 2023 (currently at USACE)
  - Martine Espeseth, UiT The Arctic University of Norway, Ph.D. advisor, 2015 - 2019 (currently at Kongsberg Satellite Services, Oil Spill Detection Service)

- Karen An, UCLA Geography Dept., external Ph.D. advisor with Dr. Yongwei Sheng, 2017-2019 (currently at JPL)
- Alfredo Estevao de Barros Leite, Federal University of Rio de Janeiro, JPL Visiting Student Researchers Program, 2024-2025
- Pietro Mastro, Institute for the Electromagnetic Survey of the Atmosphere (CNR-IREA), Italy, JPL Visiting Student Researchers Program, 2023
- Leonardo De Laurentiis, Tor Vergata Univ., Rome, JPL Visiting Student Researchers Program, 2017 & 2019 (currently at European Space Agency Centre for Earth Observation)
- Daniele Latini, Univ. Rome Tor Vergata, JPL Visiting Student Researchers Program, 2013 (currently at Univ. Rome Tor Vergata)
- Brent Minchew, Caltech, Seismological Laboratory, JPL Summer Student Internship, 2010 (currently at MIT)

- Lecturer, California Institute of Technology, Physics Dept., 1996-1998