

Kayli Matsuyoshi

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Education

2023–PRESENT	Doctor of Philosophy, Physical Oceanography , Scripps Institution of Oceanography, University of California, San Diego. UC-GPA: 3.961 Advisors: Luc Lenain
2019–2023	Bachelor of Science, Oceanic and Atmospheric Sciences, Minor in Mathematics , University of California, San Diego. UC-GPA: 3.948 Honors: Magna Cum Laude, High Distinction

Research Interests

Air-sea interaction, submesoscale processes, wind-wave-current coupling, remote sensing, autonomous instrument platforms, satellite oceanography, high latitude dynamics.

Research Experience

2021–2023	Undergraduate Research Assistant , Air-Sea Interaction Laboratory, Scripps Institution of Oceanography (SIO) Advisor: Luc Lenain Developed motion-compensation algorithms for wave glider-collected current measurements, evaluated fog-monitoring instrumentation for the Seaworker Autonomous Surface Vehicle (ASV), and assisted instrument deployments, operation, and maintenance.
JUN–AUG 2022	NSF Undergraduate Research Fellow , Graduate School of Oceanography, University of Rhode Island (URI) Advisor: Meng (Matt) Wei Worked with the URI GSO Wei Lab and NOAA Tides & Currents to strengthen the Global Navigation Satellite System-Interferometric Reflectometry (GNSS-IR) method to measure sea level rise.
JUN–AUG 2021	Laboratory Assistant , Climate, Atmospheric Sciences, and Physical Oceanography (CASPO), Scripps Institution of Oceanography Advisor: Matthew Mazloff Assisted research in developing Matlab and Python Machine Learning models to predict Arctic sea-ice motion and dynamics using data from Ice-Tethered Profilers (ITPs) and satellites.

Publications

Hodges, B. A., Grare, L., Greenwood, B., **Matsuyoshi, K.**, Pizzo, N., Statom, N. M., Farrar, J. T., & Lenain, L. (2023). Evaluation of Ocean Currents Observed from Autonomous Surface Vehicles. *Journal of Atmospheric and Oceanic Technology*, 40(10), 1121-1136. <https://doi.org/10.1175/JTECH-D-23-0066.1>.

Hoffman, L., Mazloff, M. R., Gille, S. T., Giglio, D., Bitz, C. M., Heimbach, P., & **Matsuyoshi, K.** (2023). Machine Learning for Daily Forecasts of Arctic Sea Ice Motion: An Attribution Assessment of Model Predictive Skill. *Artificial Intelligence for the Earth Systems*, 2(4), 230004. <https://doi.org/10.1175/AIES-D-23-0004.1>.

Abstracts and Presentations

Matsuyoshi, K., Lenain, L., Freilich, M., & Pizzo. N. Stokes drift and current coupling at the submesoscale. Poster Presentation at the 2025 International Ocean Vector Winds Science Team Meeting.

Matsuyoshi, K., Lenain, L., Pizzo. N., Dorman, C., Mackinnon, J., Merrifield, M., Formby-Fernandez, A., Statom, N. M., & Grare, L. Development of new observational technology to improve marine fog predictions. Poster Presentation at the 2023 Scripps Undergraduate Research Symposium.

Matsuyoshi, K. & Wei M. Improving the Global Navigation Satellite System-Interferometric Reflectometry (GNSS-IR) method to measure sea level rise. Presented at the Graduate School of Oceanography 2022 SURFO Final Presentations.

Fellowships

National Science Foundation (NSF) Summer Undergraduate Research Fellowship in Oceanography (SURFO), Graduate School of Oceanography, University of Rhode Island, 2022.

Honors

Scripps Undergraduate Honors Program, from Fall Quarter 2022 to Spring Quarter 2023. Graduated with High Distinction in Oceanic and Atmospheric Sciences.

Latin Honors at the University of California, San Diego, graduated Class of 2023, awarded Magna Cum Laude.

Provost Honors at the University of California, San Diego, awarded all academic quarters from Fall Quarter 2019 to Spring Quarter 2023.

Service and Outreach

FALL 2025	SIO Math Workshop Lecturer Teach lessons on complex analysis and Fourier series to incoming Scripps Institution of Oceanography graduate students.
SPRING 2025–FALL 2025	Scripps Student Symposium High School Student Outreach Invite high school students from the San Diego area to attend the annual Scripps Student Symposium and organize networking activities and engagement.
FALL 2024–SPRING 2025	Physical Oceanography Seminar Organizer Invite professors and researchers from Scripps and outside institutions to speak in front of an audience, facilitate open discussions about their presented work and set up networking opportunities.
FALL 2024–PRESENT	Air-Sea Interaction Lab Reading Group Leader Organize student-lead biweekly discussions of selected papers focused on air-sea interactions and formulate questions and slides pertaining to the topics mentioned in published studies.
FALL 2024–PRESENT	Physical Oceanography Doctoral Student Mentor Support SIO Physical Oceanography PhD students through one-on-one meetings, answering questions on panels, and providing academic guidance.
FALL 2024–PRESENT	Mentoring Program for Undergraduates at Scripps Mentor two undergraduate students at UCSD in the environmental systems program through quarterly one-on-one meetings, speak on panels about undergraduate research opportunities.

Skills

Software	Matlab, Python, ArcGIS, gfortran, Github, Google Drive, Java
Technical	General lab procedures, Data collection and analysis, Microsoft Office (Word, Excel, PowerPoint), Google Workspace (Docs, Sheets, Slides, Form), Group supervision
Languages	English (Fluent), Japanese (Intermediate)