Emma Martin

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Institute for Geophysics, University of Texas at Austin, Austin, TX, USA

Objective

Early-career scientist with a passion for marine geosciences, specializing in seismic imaging, geophysical modeling, and tectonic processes. Experienced in geophysical research cruises and the processing of collected seismic data. Seeking to deepen the understanding of geophysical processes and their connection to the global oceanic system.

Education

2024-2029 **University of Texas at Austin, PhD Marine Seismology**
On track for Marine Seismology PhD
Advisor: Dr Shuoshuo Han

2020-2024 **Western Washington University, BS Marine and Coastal Sciences**
Minored in Geology and Honors Interdisciplinary Studies
Advisor: Dr Emily Roland

Research experience

2024 – Present **Graduate Research Assistant,** University of Texas Institute for Geophysics, Austin, TX
Lab: UTIG Marine Seismology
Project: Puerto Rico Subduction Zone MGL2315
Advisor: Dr Shuoshuo Han

- Processed ultra-long streamer reflection profiles using Paradigm workflows
- Analyzed high-resolution bathymetric data to identify seafloor features of interest related to tectonically driven deformation
- Developed original codes for pre- and post-processing of active source seismic streamer data
- Organized and modified figures and information for presentations through poster and oral mediums

September 2025 **Field Based Research Assistant,** Sally Ride, SCRIPPS research vessel
Project: CHINOoK SR2519
Head Researchers: Glenn Spinelli

- Aided in data collection, instrument deployment and recovery, and on board data processing
- Assisted in the deconstruction and packaging of 600 meter seismic streamer and associated airgun array
- Monitored onboard lab monitors and processed SBP-29 subbottom data
- Collaborated with other members of the science party to maintain cruise log and expand research objectives and personal knowledge

2022 - 2024 **Undergraduate Research Assistant,** Western Washington University, Bellingham, WA
Lab: WWU Surf Geophysics Lab

Project: TOUQUES MGL2021
Advisor: Dr Emily Roland and Dr Andrew Gase

- Manually picked and processed first arrival refraction data
- Handled and modified code to run raytracing and tomographic inversions on seismic streamer and OBS data
- Developed original codes for pre- and post-processing of active source seismic streamer data
- Organized and modified figures and information for presentations through poster and oral mediums

September 2022 **Field Based Research Assistant,** Marcus G. Langseth, NSF geophysical research vessel
Project: TOQUES MGL2023
Head Researchers: Dr Emily Roland and Dr Lindsey Worthington

- Aided in data collection, instrument retrieval, and on board data processing
- Assisted in the deconstruction and packaging of Ocean Bottom Seismometers
- Deployed and monitored multiple XBT (eXpendable BathyThermograph) drops well communicating through handheld radio

  Worked independently on CHIRP Sub-Bottom Profiling data processing during and upon return from the research vessel
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Teaching experience

September – December 2023 **Western Washington University,** Bellingham, WA
Teaching Assistant, Marine and Coastal Sciences Department
Professor: Dr Sam Kastner

- Assisted in Marine Physical Processes, an undergraduate lab course, averaging 20 students per semester, covering the physics behind topics such as: tidal exchange, density gradients in the ocean, oceanic gyre movement, Coriolis effect, wave generation and movement, and oceanic current development and movement.
- Coordinated grading and labs with the professor and second teaching assistant
- Assisted students during labs with questions regarding topics, methods, coding, and general understanding
- Set up and monitored tidal gauges in the field in association with class field trips

March – June 2023

Western Washington University, Bellingham, WA
Teaching Assistant, Geology Department,
Professor: Dr Emily Roland

- Assisted in Marine Geology, an undergraduate averaging 30 students per semester, covering geologic topics such as: oceanic crustal formation, oceanic tectonic settings, oceanic depositional systems, coastal erosion and weathering, and marine geochemical processes
- Coordinated grading with the professor and second teaching assistant
- Held office hours and assisted students with assignment topics

Publications

June 2024

Capstone Publication

Martin, E., Gase, A., & Roland, E. (2024). Imaging of the shallow crustal structure across the region of the 2013 Mw 7.5 Craig Earthquake with high-resolution seismic streamer tomography.

Presentations

May 2024

Poster Presentation
"Imaging of the shallow crustal structure across the region of the 2013 M7.5 Craig Earthquake with high-resolution seismic streamer tomography", Seismological Society of America Conference

December 2023

Poster Presentation
"Imaging of the shallow crustal structure across the region of the 2013 M7.5 Craig Earthquake with high-resolution seismic streamer tomography", American Geophysical Union Conference

February 2023

Poster Presentation
"Seismic CHIRP Imaging of Tectonically Influenced Sub-Surface Geology", Western Washington University Scholars Week

Professional training

December 2023

UNOLS Early Career Workshop
San Francisco, CA
Two day workshop put on by the University-National Oceanography Laboratory System(UNOLS) organization focused on early career scientist networking and organization resource introduction

Honors and awards

2024 – present

University of Texas at Austin Graduate Assistantship Award
Monthly stipend and tuition waiver

June 2024

Western Washington University Marine and Coastal Science Outstanding Graduate
Named the most outstanding graduate in the Marine and Coastal Sciences graduating class of 2024

April 2024	**Recipient of Leslie Lingley Memorial Fund Travel Award** Received travel award to assist with travel payments associated with the Seismological Society of America Conference in April 2024
2020-2024	**Western Washington University Honor Roll** 12/2020, 3/2022, 3/2023, 6/2023
May 2023	**Western Washington University Acknowledgement of Academic Achievement**
2021-2024	**Western Washington University Pep Band Section Leader**
2020 - 2024	**Recipient of Western Undergraduate Exchange Merit Scholarship** Awarded tuition scholarship based on academic achievement and merit
2020 - 2024	**Western Washington University Honors College Member**
2019-2020	**National Honors Society for Dance Arts President**
May 2020	**Stevens High School Presidential Scholars Award Recipient and Summa cum laude graduate**

Professional affiliations

2024 - Present	**University of Texas at Austin** Jackson School of Geoscience, Institute for Geophysics
2024 - Present	**Seismological Society of America** 2024 annual conference
2023 - Present	**American Geophysical Union** 2023 annual conference, 2025 annual conference
2023 - Present	**University-National Oceanographic Laboratory System (UNOLS)** R/V Marcus G Langset, R/V Sally Ride
2022 - Present	**National Science Foundation** Awards:
2020 - Present	**Western Washington University** Marine and Coastal Sciences Department, Geology Department, Honors College

Applicable skills

Programming	Python, MATLAB, R, Vi, Unix, Julia
Applications	JupyterLab, Paradigm, MATLAB, RStudio, Sublime, Pluto, ArcGIS, Adobe Illustrate, Inkscape, Word, PowerPoint, Excel
Platforms	Linux, Windows, macOS
Data	Data analytics, data visualization, data processing, statistical analysis, data interpretation