R. Tucker Sylvia
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Education

M.S. Oceanography, 2017, Graduate School of Oceanography, University of Rhode Island

B.S. Geology and Geological Oceanography, 2014, University of Rhode Island, College of Environmental and Life Sciences, Department of Geosciences

Research Experience

2014-2017 Viscous Fluid Dynamics Laboratory, URI Graduate School of Oceanography

Graduate Research Assistant

- Analog laboratory modeling of subduction induced mantle flow using physical tank models. Investigating the extent and variability of subduction induced flow patterns, mantle wedge diapirism and heterogeneity, gravitational instability and lithospheric drips.
- As part of Chris Kincaids Lab I was lucky to participate in various fluid dynamics studies ranging from coastal-estuarine instrument deployments studying shellfish larval dispersal to numerical geodynamic simulations of mantle convection processes.
- My graduate work has given me the tools to investigate natural fluid systems using complimentary data-driven, numerical, and analogue modeling techniques.

Thesis

- Sylvia, R. T., and Kincaid, C. R., Interactions of buoyant upwellings with subduction induced mantle wedge flow, 2017.

Abstracts

- van Dam, L., et al., Mapping mantle complexity in 4-d geodynamical models of circulation beneath migrating mid-ocean ridges (PICO), Abstract TS11.2/GD10.2/GMPV10.2 presented at 2018 General Assembly, EGU, Vienna, Austria, 13 April.

- van Dam, L., et al., Migrating Toward Fully 4-D Geodynamical Modles of Asthenospheric Circulation and Melt Production at Mid-Ocean Ridges (Oral), Abstract DI14A-01 presented at 2017 Fall Meeting, AGU, New Orleans, Lousianna, 11 December.

- Sylvia, R. T., and Kincaid, C. R., Thermal Evolution of Diapirs with Complex Mantle Wedge Flow (Oral), Abstract T51I-08 presented at 2016 Fall Meeting, AGU, San Francisco, California, 16 December.

- Sylvia, R. T., and Kincaid, C. R., Complex interactions between diapirs and 4-D subduction driven mantle wedge circulation (**Invited**), Abstract V53G-07 presented at 2015 Fall Meeting, AGU, San Francisco, California, 18 December.

- Sylvia, R. T., Kincaid, C. R., Behn, M. D., and Zhang, N., Laboratory experiments on subduction-induced circulation in the wedge and the evolution of mantle diapirs (Poster), Abstract V33B-4840 presented at 2014 Fall Meeting, AGU, San Francisco, California, 17 December.

Areas of Interest:

- Marine geology and geophysics
- Geodynamics
- Subduction zone processes
- Physical oceanography
- Estuary dynamics
- Coastal erosion and coastal zone management
- Analog and numerical modeling
- Remote sensing
- Seafloor mapping
- Subsurface imaging
- Submarine margins (active and passive, historic and modern)
- Submarine volcanism
- Computer vision and image processing
- Computer science and STEM education

Skills:

- Time series analysis
- Scientific visualization
- Computer programming (Python, MATLAB, Java)
- System administration and IT (Linux, Windows, Mac)
- Geologic mapping
- Observational experiment design
- Coastal and offshore instrument deployment and recovery
- Optical petrography (thin sections and smear slides)
- Mechanical repair (engines, hydraulics, electrical)
- Piloting boats (power and sail)

Certifications:

- Red Cross First Aid and CPR
- OSHA HAZWOPER 40hr. (Hazardous Waste Operations and Emergency Response)
- US Sailing Level 1 Instructor and Basic Keelboat Instructor
- Basic USCG boaters safety

Work Experience

2018 - present Proceptive Insights, Jamestown, RI, **Freelance Technical and Educational Consultant**

- Provide technical consulting to the Viscous Fluids Lab at URI-GSO in the design and fabrication of new research apparatuses.
- Design and implement digital motion control systems.
- Document apparatus capability and design methodology for next wave of students.
- Provide on-site troubleshooting and repair services.
- Work with local non-profit organizations in developing marine science curriculum for public schools.
- Travel to local schools to assist teachers with using new marine science curriculum.
- Interact with students ages 8-18 helping develop intuition and understanding of oceanographic concepts.

2018 Middletown High School, Middletown, RI, **Sailing Coach**

- Coach a small public high school sailing team in the competitive NESSA regional fleet.
- Help young sailors improve technical and theoretical knowledge of sailing and racing.
- Organize and run all on the water activities.

2017-present Sail Newport, Newport, RI, **Sailing Instructor**

- Safely provide clients with basic knowledge of concepts and terms to maneuver small keel boats within Newport harbor and Narragansett Bay.
- Instruct individuals of all ages and skill level, developing personalized learning goals and lesson plans.
- Providing feedback on organization education objectives.
- Managing a team of instructors and working within a large and diverse group.

2014-2017 University of Rhode Island Graduate School of Oceanography, Narragansett, RI
Graduate Research Assistant - Viscous Fluid Dynamics Lab **and** Marine Geological Samples Lab

- Maintain clean and functional mixed use lab spaces.
- Develop and run independent laboratory experiments.
- Design and plan observational experiments; deploy coastal oceanographic instrumentation (ADCP's, CTD's, drifters, moorings, tilt current meters).
- Describe and catalog marine rock and sediment core samples, split cores, fill external sample requests.
- Maintain sample databases (in house and NGDC).

2015 **Teaching Assistant** – OCG-131 Volcanoes and the Environment with Dr. Steve Carey

- Lecture to large auditorium of undergraduate students with diverse backgrounds.
- Convey scientific concepts in meaningful and intuitive fashion to non STEM students.
- Grade student work, provide timely and constructive feedback, and track student progress.

2009-2013 Sail To Prevail, Inc., Newport, RI and Nantucket, MA **Sailing Instructor and Program Director**

- Safely provide clients with basic knowledge of concepts and terms to maneuver small keel boats within Newport harbor and Narragansett Bay, and Nantucket harbor.
- Adjust standard routine to accommodate for various individuals and situations creatively and professionally.
- Manage time to maintain schedule as well as observe weather patterns to plan timely and navigable courses.
- Constantly observing the work environment, paying special attention to risk management.
- Perform general maintenance and repair of fleet of boats including rigging, cleaning, fiberglass repair, safe docking and storage of boats, driving with a trailer, launching using a crane, hoist or ramp, and mechanical repair.
- Daily workplace upkeep, trash removal, watering flowers, keeping tidy work area and professional appearance.

2007-2015 Lim-Bir, Inc., Jamestown, RI **Arboriculture Technician**

- Prune and remove trees from the ground or aerially by using a bucket truck or climbing and aerial rigging techniques.
- Safely operate and maintain fleet of equipment including trucks, chainsaws, tractors, mowers, blowers, chippers.
- Stack and remove brush, split and stack wood.

2001-2013 Tuc-Mol Properties, LLC, Jamestown, RI **Landscaper and Handyman**

- Mow and trim lawns, weed flower beds, driveways, and walkways.
- Interior and exterior painting; cleaning and remodeling.
- Snow removal.
- Moving furniture and appliances.
- Household maintenance: clogged drains, frozen pipes, fixing doors and locks, general plumbing, carpentry, and electrical work.

References Available Upon Request