

Jinshi (Peter) Chen

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EDUCATION

Woods Hole Oceanographic Institution, Physical Oceanography Cambridge & Woods Hole, MA
Massachusetts Institute of Technology, Earth, Atmosphere, and Planetary Science Jun. 2019-Present
Ph.D. Candidate

Advisor: Dr. Britt Raubenheimer & Dr. Steve Elgar

Dissertation: *Cross surfzone transport dynamics driven by random breaking waves*

Overall GPA: 5.00/5.00

Cornell University, College of Arts & Sciences Ithaca, NY
Physics, Bachelor of Arts, Magna Cum Laude Aug. 2015-May 2019
Overall GPA: 4.08/4.00 • Major GPA: 4.14/4.00

RESEARCH AREAS

Nearshore processes & circulation • Wave breaking & turbulence • Transport mechanism • Scientific Modeling

PUBLICATIONS

- Chen, J., Raubenheimer, B., & Elgar, S. (2024) Wave and Roller Transformation over Barred Bathymetry, *Journal of Geophysical Research: Oceans*. 129, e2023JC020413
- Chen, J., Raubenheimer, B., & Elgar, S. Anisotropy of Surfzone Turbulence. *under review, Journal of Physical Oceanography*
- Chen, J., Raubenheimer, B., & Elgar, S. Vertical Structure of Undertow over Barred Bathymetry. *In prep.*

PRESENTATIONS

- Chen, J., Trowbridge, J., Raubenheimer, B., & Elgar, S. (2024, February). *Observation of Surfzone Turbulence Anisotropy*. Presented at 2024 Ocean Sciences Meeting.
- Chen, J., Raubenheimer, B., & Elgar, S. (2023, August). *Tidal Effect of Cross-shore Roller Transformation over Barred Bathymetries*. Presented at 2023 Young Coastal Scientists and Engineers Conference-Americas.
- Chen, J., Raubenheimer, B., & Elgar, S. (2022, December). *Cross-shore Roller Transformation over Barred Bathymetries*. Presented at 2022 AGU Fall Meeting.
- Chen, J., Raubenheimer, B., & Elgar, S. (2021, August). *Simulations and Observations of Surfzone Waves and Undertow*. Presented at Coastal Ocean Fluid Dynamics Laboratory (COFDL) talk.
- Chen, J., Raubenheimer, B., & Elgar, S. (2018, November). *Surfzone Setup and Alongshore Currents During Hurricane Matthew*. Poster presented at 71st Annual Meeting of the APS Division of Fluid Dynamics.

FIELD WORK

SINKEX, Field Research Facility, Duck, NC Sept. 2023-Oct. 2023

- Deployed vertically aligned ADVs to measure turbulence (Funded by WHOI OVF Award).
- Assisted mounting field cameras to collect surf zone foam images.

BIASEX, Field Research Facility, Duck, NC

Sept. 2022

- Deployed ADV, ADCP in surf zone.
- Assisted mounting field cameras to collect surf zone foam images.
- Assisted flying drones for remote sensing.

DUNEX, Field Research Facility, Duck, NC

Aug. 2021-Oct. 2021

- Deployed ADV, ADCP and pressure sensors in surf zone (Funded by PADI Foundation Award).

- Assisted mounting field cameras to collect surf zone foam images.
- Assisted collecting sediment samples.
- Provided daily maintenance for in-situ sensors.

SPECIALIZED SKILLS

Software: MATLAB • Mathematica • OpenFOAM • Dedalus • FLUENT • LabVIEW

Programming language: Python • C/C++ • Julia

Laboratory: Particle Image Velocimetry (PIV) • Laser Induced Fluorescence (LIF) • Raman spectroscopy

Field Work: Acoustic Doppler Velocimetry (ADV) • Acoustic Doppler Current Profiler (ADCP) • CTD

HONORS & AWARDS

- MathWorks Fellowship Aug. 2023-Jun. 2024
- Merrill Presidential Scholar May. 2019
- American Physical Society Division of Fluid Dynamics 2018 student travel grant Sept. 2018
- Woods Hole Oceanographic Institution Summer Student Fellowship Jun. 2018-Aug. 2018
- National Marine Figure of the Year 2013 by State Oceanic Administration (SOA), P.R.China Jun. 2014

RESEARCH GRANT AWARDED

- MathWorks Fellowship (~100k) Aug. 2023-Jun. 2024
- Ocean Ventures Fund (~10k) Jun. 2023
- PADI Foundation Grant (~8k) Apr. 2021

MENTORING & TEACHING

Math Review Instructor, MIT-WHOI Joint Program Woods Hole, MA
 • Teach signal processing session for incoming MIT-WHOI Joint Program student. Aug. 2024

Grad Teaching Development Tracks, MIT Cambridge, MA
 • Develop teaching skills through interactive learning modules and literature. Nov. 2022-Feb. 2024

Peer Advisor, Cornell University Ithaca, NY
 • Mentored six freshmen on physics course selections and finding research projects. Aug. 2017-Dec. 2017

Undergraduate Teaching Assistant, Cornell University Ithaca, NY
 • Held discussion sessions for PHYS 1112: Mechanics & Heat. Feb. 2016-May. 2016

AFFILIATIONS

Phi Beta Kappa Honor Society (Mar. 2019-Present) • American Physical Society (Sept. 2018-Present) • American Geophysical Union (Dec. 2022-Present)

ADDITIONAL EXPERIENCE

- **Guest Student**, Woods Hole Oceanographic Institution, Woods Hole, MA Jul. 2016-Aug.2016
- **Leading Student Researcher on Cyanobacteria**, TsingHua University, Beijing, China Sept. 2013-Aug. 2014

CERTIFICATION

- **MIT Grant Writing Certificate** Jun. 2024-Present
- **MIT Research Mentoring Certificate** Apr. 2024-Present
- **MIT Graduate Teaching Certificate** Apr. 2024-Present
- **Scientific Diver**, American Academy of Underwater Sciences Jul. 2021-Present
- **Basic Keelboat**, The United States Sailing Association Aug. 2018-Present