

Julia W. Fiedler (Julia Fiedler Kannberg)

CONTACT INFORMATION	Scripps Institution of Oceanography University of California San Diego 9500 Gilman Drive La Jolla, CA 92093-0209 USA	<i>Mobile:</i> +1-808-282-8649 <i>Office:</i> +1-858-534-7202 <i>E-mail:</i> jfiedler@ucsd.edu
RESEARCH INTERESTS	Observational Nearshore Physical Oceanography: infragravity waves, wave runup, beach-groundwater interactions, SWASH modeling, science communication and education	
CURRENT ACADEMIC APPOINTMENT	Project Scientist , Scripps Institution of Oceanography <i>Coastal Processes Group</i> , Scripps Institution of Oceanography	July 2021- current
EDUCATION	Postdoctoral Scholar <i>Center for Climate Change Impacts and Adaptations, SIO, La Jolla, CA</i>	June 2018-June 2021
	Ph.D. Physical Oceanography <i>Scripps Institution of Oceanography, La Jolla, CA</i>	May 2018 Advanced to Candidacy 2014
	M.S. Physical Oceanography <i>Scripps Institution of Oceanography, La Jolla, CA</i>	August 2013
	B.S. Global Environmental Science, Mathematics Minor <i>University of Hawaii at Manoa, Honolulu, HI</i>	June 2011
	B.A. Fine Art <i>Yale University, New Haven, CT</i>	June 2003
AWARDS	UC Ship Funds, GOTOSEE Cruise, Summer 2016 Teaching Assistant Excellence Award, SIO, Fall 2015 National Defense Science and Engineering Fellowship, 2012-2015 Wiegel Scholarship for Coastal Studies, CSBPA, 2014 NSF Graduate Research Fellowship, Award Offered 2012, Honorable Mention 2011 UH Manoa SOEST Achievement Tuition Scholarship, Fall 2009, Spring 2010, Fall 2010 UH Manoa Summer Undergraduate Research Award, Summer 2009	
JOURNAL ARTICLES	10. A. Lange, Fiedler, J.W. , M.A. Merrifield, and R.T. Guza, Estimating runup with limited bathymetry, <i>Coast. Eng.</i> 172, 2022 doi:10.1016/j.coastaleng.2021.104055	
	9. Fiedler, J.W. , L. Kim, R. Grenzeback, A.P. Young, and M. Merrifield, Enhanced surf-zone and wave runup observations with drone-LiDAR, <i>J. Atmos. Oceanic Technol.</i> 38 (11), 1967-1978, 2021 doi:10.1175/JTECH-D-21-0027.1	
	8. Merrifield, M.A., M Johnson, R.T. Guza, J.W. Fiedler , A.P. Young, C.S. Henderson, A.M. Z. Lange, W. C. O'Reilly, B.C. Ludka, M. Okihiro, K. Pappas, L. Engeman, J. Behrens, E. Terrill, An early warning system for wave-driven coastal flooding at Imperial Beach, CA, <i>Nat. Haz.</i> (104), 1-22, 2021 doi:10.1007/s11069-021-04790-x	
	7. Fiedler, J.W. , A.P. Young, B.C. Ludka, W.C. O'Reilly, C. Henderson, M.A. Merrifield, R.T. Guza, Predicting site-specific storm wave runup, <i>Nat. Haz.</i> , 104 (1), 493-517, 2020. doi:10.1007/s11069-020-04178-3	
	6. Fan, W., McGuire, J.J., Groot-Hedlin, C.D., Hedlin, M.A.H., Coats, S., and Fiedler, J.W. , Stormquakes, <i>Geophys. Res. Lett.</i> , 46, 2019. doi:10.1029/2019GL084217	
	5. Fiedler, J.W. , P.B. Smit, K.L. Brodie, J.E. McNinch, and R.T. Guza, The offshore boundary condition in surf zone modeling, <i>Coast. Eng.</i> , 143, 2019. doi:10.1016/j.coastaleng.2018.10.014	

4. **Fiedler, J.W.**, P.B. Smit, K.L. Brodie, J.E. McNinch, and R.T. Guza, Numerical modeling of wave runup on steep and mildly sloping natural beaches, *Coast. Eng.*, 131, 2018. doi:10.1016/j.coastaleng.2017.09.004
3. **Fiedler, J.W.**, K.L. Brodie, J.E. McNinch, and R.T. Guza, Observations of runup and energy flux on a low slope beach with high-energy, long-period ocean swell, *Geophys. Res. Lett.*, 42, 2015. doi:10.1002/2015GL066124
2. **Fiedler, J.W.**, M.A. McManus, M.S. Tomlinson, E.H. De Carlo, G.R. Pawlak, G.F. Steward, O.D. Nigro, R.E. Timmerman, P.S. Drupp, and C.E. Ostrander, Real-time observations of the February 2010 Chile and March 2011 Japan tsunamis recorded in Honolulu by the Pacific Islands Ocean Observing System. *Oceanography*, 27(2), 186-200, 2014. doi:10.5670/oceanog.2014.34
1. **Fiedler, J.W.** and C.P. Conrad, Spatial variability of sea level rise due to water impoundment behind dams. *Geophys. Res. Lett.*, 37, L12603, 2010. doi:10.1029/2010GL043462

DATASETS

Fiedler, J.W., L. Kim, R. Grenzeback, A.P. Young, and M. Merrifield (2021), Data from: Enhanced surf zone and wave runup observations with hovering drone-mounted LiDAR. *UC San Diego Library Digital Collections*. doi:10.6075/J04F1P9V

CONFERENCE PRESENTATIONS

Fiedler, J.W., A. Young, W.C. O'Reilly, B.C. Ludka, C. Henderson, R.T. Guza, M. Merrifield. Predicting storm wave runup at Imperial Beach, California. Abstract CP52A-06 Presented at: *2020 Ocean Sciences Meeting, San Diego, CA*, February 16-20, 2020.

Merrifield, M.A., L. Engeman, M. Johnson, S. Dedina, C. Helmer, J. Behrens, E. Terrill, A. Young, **J.W. Fiedler**, B.C. Ludka, and C. Henderson. Preparing for coastal flooding: A warning system for Imperial Beach, CA. Abstract SI11A-06 Presented at: *2020 Ocean Sciences Meeting, San Diego, CA*, February 16-20, 2020.

Kim, L., K.L. Brodie, **J.W. Fiedler**, S.N. Giddings, R.T. Guza, M.A. Merrifield, B.C. Ludka, and C. Henderson. Stationary LiDAR observations and modeling of runup, inner-surf zone waves, and beach morphology during energetic storm events. Abstract CP44C-1353 Presented at: *2020 Ocean Sciences Meeting, San Diego, CA*, February 16-20, 2020. Poster abstract.

C. Henderson, M.A. Merrifield, **J.W. Fiedler**, B.C. Ludka, A.P. Young, R.T. Guza. Observations and modeling of wave overtopping at Imperial Beach, California. Abstract CP34C-1256 Presented at: *2020 Ocean Sciences Meeting, San Diego, CA*, February 16-20, 2020. Poster abstract.

Fiedler, J.W., P. Smit, K.L. Brodie, J.E. McNinch, R.T. Guza, Modeling large waves on a low slope beach with SWASH 1D, Abstract 402135. Presented at: *2018 Fall Meeting, AGU, Washington, D.C.*, December 10-14, 2018.

Fiedler, J.W., P. Smit, K.L. Brodie, J.E. McNinch, T Gallien, R.T. Guza, Numerical Modeling of Infragravity Wave Runup on Steep and Mildly Sloping Natural Beaches, Abstract 161704. Presented at: *2016 Fall Meeting, AGU, San Francisco, California*, December 12-17, 2016. Poster abstract.

Fiedler, J.W., S. Crosby, V Tamsitt, B Ludka, Experiential Learning: High School Student Response to Learning Oceanography at Sea, Abstract 161561. Presented at: *2016 Fall Meeting, AGU, San Francisco, California*, December 12-17, 2016.

Rhee, K., **J.W. Fiedler**, S. Crosby, Observations of High-frequency Internal Wave Energy Offshore of Point Loma, California, Abstract 179397. Presented at: *2016 Fall Meeting, AGU, San Francisco, California*, December 12-17, 2016. Poster abstract.

Fiedler, J.W., W.C. O'Reilly, K.L. Brodie, J.E. McNinch, and R.T. Guza, Parameterizing wave runup with an effective peak frequency, Abstract 90472. Presented at: *2016 Ocean Sciences Meeting, New Orleans, Louisiana*, 21-26 February, 2016. Poster abstract.

Fiedler, J.W., K.L. Brodie, J.E. McNinch, and R.T. Guza, Infragravity waves, water table, and runup observations on a nourished Southern California beach, Abstract 14495 Presented at: *2014 Ocean Sciences Meeting, Honolulu, Hawaii*, 23-28 February, 2014.

Fiedler, J.W., K.L. Brodie, J.E. McNinch, and R.T. Guza, Infragravity waves, water table, and runup observations on a nourished Southern California beach. Presented at: *2014 Headwaters 2 Oceans Conference, San Diego, California, 27-29 May, 2014.*

Fiedler, J.W., K.L. Brodie, J.E. McNinch, and R.T. Guza, Surf zone, infragravity wave energy flux, and runup in extreme conditions, Abstract OS11A-1258 Presented at: *2014 Fall Meeting, AGU, San Francisco, California, 15-19 December, 2014.* Poster abstract.

Tomlinson, M.S., E.H. De Carlo, M.A. McManus, G.R. Pawlak, **J.W. Fiedler**, S. Jaramillo, P.S. Drupp, R.E. Timmerman, What have we learned from “routine” IOOS monitoring? Presented at: *2012 Ocean Sciences Meeting, AGU, Salt Lake City, Utah, 20-24 February, 2012.* Poster abstract.

Fiedler, J.W. and C.P. Conrad, Spatial variability of sea level rise due to water impoundment behind dams, Presented at: *2009 Fall Meeting, AGU, San Francisco, California, 14-18 December, 2009.* Poster abstract.

TALKS

Wave runup, forecasting, and enhanced observations with a drone-mounted LiDAR. *UH Manoa ORE Seminar, 21 Apr, 2021.*

Wave runup, forecasting, and enhanced observations with a drone-mounted LiDAR. *Coast2Coast Zoominar, 12 Apr, 2021.*

Panelist, Hydrography Technology and Applications for Coastal Resilience in a Changing Climate. *Blue Tech Week 2020, 17 Nov, 2020.*

Improved Flood Forecasting and Resilient Futures Project. Panelist at: *Wading into Flood Risk: Research Efforts in Imperial Beach and San Diego Bay Coastal Conservancy, State of California Webinar Series, 24 June, 2020.*

Improved Flood Forecasting and Resilient Futures Project. Presented for: *San Diego Coastkeeper, 31 October, 2019.*

Energetic Waves at Agate Beach: Measuring Runup under Extreme Conditions. Presented at: *Hatfield Marine Science Center seminar series, Oregon State University, 12 September, 2013.*

SUBMITTED JOURNAL

C. Henderson, **Fiedler, J.W.**, M.A. Merrifield, R.T. Guza, A. Lange, M. Johnson, and A.P. Young, Observations and Modeling of Overtopping in Imperial Beach, CA, *submitted to Coast. Eng., 2021*

PUBLICATIONS PAPERS IN PREPARATION

Fiedler, J.W., et al., Observations and Modeling of Wave Runup on an embayed beach in Kaneohe, HI, *in prep*

TEACHING AND MENTORING EXPERIENCE

Relevant Coursework

- The College Classroom, Fall 2015
- SIO 209 Seminar: Earth and marine science teaching techniques, Fall 2015
- SIO 209 Seminar: Communicating science to informal audiences, Fall 2014

Mentoring: SWASH model, Data processing

- Athina Lange, PhD student
- Cassandra Henderson, PhD student
- Lauren Kim, PhD student

Spring 2020 - present
Summer 2019 - present
2018 - 2021

Mentoring: General physical oceanography

- Kaitlin Rhee, high school student,
Resulted in poster presentation at "Bright STaRS" session, AGU 2016

July-December 2016

Teaching Assistant, SIO 30: The Oceans

- Ran and designed two one-hour discussion sections per week for an introductory-level oceanography lecture course (20 instruction hours), with approximately 20 students per section.

Fall 2015

- Co-Instructor, SIO: Physics of the Ocean World* **Summer 2015, Summer 2016**
- Designed and taught a 3-week curriculum (75 instruction hours) for an introductory college-level physical oceanography course for high school students through the Academic Connections program at UCSD
- Co-Instructor, Upward Bound, with University of San Diego* **July 2015, 2016**
- Designed 2 days of lecture and lab for high school seniors focusing on nearshore processes
- Tutoring, UH Manoa* **Spring 2010**
- Tutor for Aquatic Pollution and Global Environmental Change

FIELD EXPERIENCE	<p>RUBY2D, Torrey Pines State Beach, Fall 2021</p> <p>ATV safety training, renewed 2021</p> <p>FAA sUAS Pilot License, 2021</p> <p>SCARP, Torrey Pines State Beach, Winter 2019-2020</p> <p>GOTOSEE, R/V Sproul, <i>Chief Scientist</i>, Point Loma, California, July 2016</p> <p>CSIDE, Imperial Beach, California, Fall 2015</p> <p>EWAB, Agate Beach, Oregon, Fall 2013</p> <p>Cardiff State Beach Lidar Project with USACE, Winter 2012-2013</p> <p>SCBPS Beach Surveys, San Diego County, California, 2011-present</p> <p>Scientific Instrument Tech, HiOOS nearshore sensors, 2010-2011</p> <p>Scientific Diving Certification, 2012-2017</p>
SKILLS	MATLAB, UNIX, python, Adobe Illustrator, Adobe InDesign
PROFESSIONAL MEMBERSHIPS	<p>American Geophysical Union (AGU), Member, 2009–present</p> <p>The Oceanography Society, Member, 2014–present</p>
PROFESSIONAL TRAINING	<p>Effective Leadership and Teamwork in the Workplace, Fall 2019</p> <p>Project Management for the Collaborative Workplace, Spring 2020</p>
OUTREACH	<p>Skype a Scientist 2020</p> <p>San Diego Community Outreach Program for Education (SCOPE) 2013- 2017</p> <p>Committee for Humanity and Public Service (CHiPS) 2012 - 2017</p> <ul style="list-style-type: none"> • Co-president 2012-2014 <p>Science Demonstration Leader</p> <p>Avanzamos Conference at UCSD, 2014</p> <p>Science Expo Day at PETCO Park, San Diego, 2015</p> <p>Expanding Your Horizons at University of San Diego, 2015, 2016</p> <p>STEM Career Night at Birch Aquarium, 2015, 2016, 2019</p> <p>Speaker/Panelist</p> <p>STEM Camp, Mira Costa College, 2015.</p> <p>STEM Career Night at Birch Aquarium, 2015, 2016</p> <p>Beach Science program with the Birch Aquarium, 2015, 2016</p> <p>Tutoring at Rosa Parks Elementary, 2014</p>
SERVICE	<p>Chair: Ocean Sciences Meeting 2022, <i>Nearshore Processes</i></p> <p>Reviewer: J. Geophys. Res. Oceans, Ocean Dyn., J. of Phys. Ocean., J. of Mar. Sci. and Eng.</p> <p>Reviewer: NOAA, Oregon SeaGrant</p>