Gregory H. Sinnett

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Education

Ph.D.	Scripps Institution of Oceanography	Physical Oceanography	2018
M.S.	University of Maine	Physical Oceanography	2012
B.S.	University of Maine	Engineering Physics	2004

Research Experience

2018-2019	Post-Doctoral Researcher Supervisor: Falk Feddersen, Ph.D	Scripps Institution of Oceanography
2012-2018	Graduate Research Assistant Supervisor: Falk Feddersen, Ph.D	Scripps Institution of Oceanography
2010-2012	Graduate Research Assistant Supervisor: Neal Pettigrew, Ph.D	University of Maine
2004-2010	Technology Development Engineer	Fairchild Semiconductor

Publications

Journal Publications

Sinnett, G., & Feddersen, F. (2018). "The competing effects of breaking waves on surfzone heat fluxes: Albedo versus wave heating." *Journal of Geophysical Research: Oceans,* 123, 7172–7184. https://doi.org/10.1029/2018JC014284

Sinnett, G., and Feddersen, F. (2018), "Observations of Nonlinear Internal Wave Run-Up to the Surfzone" *J. Phys. Oceanogr.,* **48**, 531–554, https://doi.org/10.1175/JPO-D-17-0210.1

Sinnett, G., and Feddersen, F. (2016), "Observations and Parameterizations of Surfzone Albedo." *Methods in Oceanography*, **17**,319-334. https://doi.org/10.1016/j.mio.2016.07.001

Sinnett, G., and Feddersen, F. (2014) "The surf zone heat budget: The effect of wave heating." *Geophys. Res. Lett*., **41**, doi:101002/2014GL061398

Updated: January 2019

Unrefereed

Sinnett, G., F. Feddersen, D. Lucas, G. Pawlak, E. Terrill, "Non-Linear Internal Waves Pulse Cold Water Into the Shallow Inner-Shelf and Surfzone." VIIIth International Symposium on Stratified Flows.
https://joss.ucar.edu/sites/default/files/meetings/2016/issf/papers/sinnett-gregory-article.pdf

"Circulation and Transport in Casco Bay, Maine" Masters Thesis, University of Maine. Orono Maine. 2012.

Presentations

"A Detailed Nearshore Heat Budget." Eastern Pacific Ocean Conference, Timberline Lodge, Oregon, September 2018.

Sinnett G., and Feddersen F., (2018), A Detailed Nearshore Heat Budget, Abstract [CD12A] presented at 2018 Ocean Sciences Meeting, Portland, OR, 12-16 Feb.

Sinnett G., and Feddersen F., (2017), Observations of Nonlinear Internal Wave Runup into the Surfzone. Gordon Research Conference on Coastal Ocean Dynamics, Maine.

"Observations of Non-Linear Internal Wave run-up into the Surfzone." AGU Fall Meeting, San Francisco, CA, December 2016.

"Observations of Non-Linear Internal Waves Pulsing Cold Water to the Surfzone." Eastern Pacific Ocean Conference, Timberline Lodge, Oregon, September 2016.

"Non-linear internal waves pulse cold water into the shallow inner-shelf and surfzone." VIIIth International Symposium on Stratified Flows, San Diego, California, August 2016.

"Surging Non-Linear Internal Waves Deliver Cold Inner-Shelf Water to the Surfzone" Ocean Sciences Meeting, New Orleans Louisiana, February 2016.

"Observations of Surfzone Albedo." AGU Fall Meeting, San Francisco, CA, December 2014.

"Characterizing Heat Content and Spatio-Temporal Variability of Temperature in the Surf Zone." Ocean Sciences Meeting, Honolulu, Hawaii, February 2014.

"Ocean Currents for 9th Grade." NSF GK-12 Meeting, La Jolla, California, May 2014.

Public Presentations

"Physical Oceanography Near the La Jolla Coast." La Jolla, California Public Library, April 2016. Invited Talk

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Selected Press

Nature News highlight (15 October 2014) "Surf zones warmed from within" http://dx.doi:10.1038/nature.2014.16148

Geophysical Research Letters highlight (16 January 2015) "Wave heating effects on the surf zone heat budget" http://agupubs.onlinelibrary.wiley.com/hub/article/10.1002/2014GL061398/editor-highlight/

EOS highlight (5 February 2015) Research Spotlight "Wave energy affects the surf zone heat budget" doi:10.1029/2015EO023167

Field Experience

DTS Internal Wave Experiment, Scripps Beach, CA 2018

Tested a new Distributed Temperature Sensing (DTS) fiber optic cable system for nearshore physical oceanography applications. Deployed three ~2 km fiber optic cables in precise locations to both experimentally test the new sensing platform and observe the internal wave field onshore of the La Jolla canyon system. The weeklong deployment required multiple science dives and shipboard operations to deploy, test and recover equipment.

Inner-Shelf Dynamics Experiment, Point Sal CA 2017

Eight days aboard the R/V Sally Ann conducting nearshore drifter releases and survey transects. This coordinated experiment across many institutions was designed to develop and improve the predictive capability of a range of numerical models, simulate circulation, density, and the surface wave field across the inner shelf associated with a broad array of physical processes and complex bathymetry.

CSIDE Experiment, Imperial Beach, CA 2015

Multiple dye releases in the surfzone, tracked with a variety of underwater, surface and airborne instruments. Provided science diving, underway CTD, jet ski operations and shore support.

SIO14 Experiment, Scripps Beach, CA 2014 - 2015

Deployed and maintained an array of over 60 instruments in water 0 – 18 m to analyze the nearshore heat budget and associated surfzone dynamics. Logged over 50 science dives and multiple small boat operations.

SIO12 Experiment, Scripps Beach, CA 2012

Recovered and analyzed data from 8 temperature sensors in water 0 – 7 m as well as numerous meteorological equipment to study the nearshore heat budget and wave heating effect in the surfzone.

Research voyages
R/V Sally Ann – Towed ADCP, CTD, drifter deployment, dives, moored instrument deployment/recovery
R/V New Horizons – Mooring recovery/redeployment, CTD stations
R/V Ocean Starr – Mooring recover/redeployment, CTD stations
R/V Connecticut – Mooring recovery/redeployment

AAUS certified science and rescue diver with ~100 scientific dives

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Research Related Service

Journal Peer Reviewer 2016 - present
Methods in Oceanography
Journal of Oceanography

Educational Outreach

Visiting Scientist - High Tech High 2017

NSF GK-12 Visiting Instructor - Kearny High School 2013 - 2014
Developed units containing lectures and labs for AP Environmental Science and Marine Science classes. Units are available at https://earthref.org/SCC/lessons/2013/oceancurrents/

SCOPE Volunteer Scientist 2013 - present
Guest speaker and tour guide to the visiting public at Scripps. ~30 public speaking, demonstration, group engagement or tour activities.