

# SEAN HANEY PH.D.

shaney@ucsd.edu

Keck Center, Room 254

8851 Shellback Way

La Jolla, CA 92037

<https://ucsd.academia.edu/SeanHaney>

## EDUCATION

- 2010–2015 **Ph.D., Atmospheric and Oceanic Sciences**, University of Colorado at Boulder.  
Research Advisor: Baylor Fox-Kemper
- 2010–2013 **M.S. Atmospheric and Oceanic Sciences**, University of Colorado at Boulder
- 2005–2009 **B.S. Mathematics**, College of Creative Studies, University of California, Santa Barbara

## FELLOWSHIP AWARDS

- 2012 **Cooperative Institute for Research in the Environmental Sciences (CIRES)**: Graduate Student Research Fellowship. *Graduate level merit fellowship, 50%.*
- 2007 **University of California, Santa Barbara, College of Creative Studies**: Summer Undergraduate Research Fellowship. *Undergraduate level research fellowship, 20%.*

## RESEARCH EXPERIENCE

- 2015– **Postdoctoral Researcher**: Scripps Institution of Oceanography, under W. R. Young. *Interactions between surface and internal gravity waves.*
- 2011–2014 **Graduate Researcher**: CIRES (Boulder, Colorado), under B. Fox-Kemper, UCB Dept. of Atmospheric and Oceanic Sciences. *Studied three-dimensional turbulent process that affect the ocean mixed layer.*
- 2011 **Student**: Community Earth System Model (CESM) Tutorial, National Center for Atmospheric Research (NCAR) Mesa Lab, Boulder, CO. *August 1-5.*
- 2009–2010 **Staff Research Associate II**: Scripps Institution of Oceanography (La Jolla, CA), under B. Cornuelle. *Analysis of the California State Estimate (CASE), a data assimilation project of the California current system.*
- 2007 **Undergraduate Researcher**: University of California, Santa Barbara, under S. James Allen, Institute for Terahertz Science and Technology. *Testing a terahertz detector with a free electron laser.*
- 2006 **Undergraduate Researcher**: University of California, San Diego, under R. Rothschild, Center for Astrophysics and Space Sciences. *Analysis of data collected by the PCA and HEXTE x-ray detectors.*

## RESEARCH CRUISES

- 2016 **R/V Revelle**: Flow Encountering Abrupt Topography (FLEAT), June 2-24. *Palau.*

## TEACHING EXPERIENCE

**Teaching Assistant:** University of Colorado at Boulder, Undergraduate classes 2010-2012 for Dept. Atmospheric and Oceanic Sciences. *Lectured for lab sections, and assisted with lecture courses.*

**Mathematics/Physics Tutor:** University of California, Santa Barbara (Santa Barbara, California), under D. Kiplagat, Campus Learning Assistance Services. *Undergraduate mathemataics and physics tutor.*

## SERVICE EXPERIENCE

**Member:** Atmospheric and Oceanic Sciences, Comps Committee. *Review questions for the ATOC Comps I exam.*

**Member:** Atmospheric and Oceanic Sciences, Curriculum Committee. *Review and update the ATOC curriculum.*

**Judge:** Corden Pharma Colorado Regional Science Fair, Boulder Valley School District. *February 28, 2013.*

**Reviewer for** *Journal of Physical Oceanography, Ocean Modelling, Geophysical Research Letters, Journal of Climate*

## REFEREED PUBLICATIONS

**S. Haney**, B. Fox-Kemper, K. Julien, A. Webb, Symmetric and Geostrophic Instabilities in the Wave-Forced Ocean Mixed Layer: 2015. *Journal of Physical Oceanography*, **45**(12): 3033-3056. doi: <http://dx.doi.org/10.1175/JPO-D-15-0044.1>.

**S. Haney**, S. Bachman, B. Cooper, S. Kupper, K. McCaffrey, L. Van Roekel, S. Stevenson, B. Fox-Kemper, R. Ferrari, Hurricane wake restratification rates of 1, 2 and 3-dimensional processes: 2012. *Journal of Marine Research*, **70**(6): 824-850. doi: <http://dx.doi.org/10.1357/002224012806770937>.

L. P. Van Roekel, B. Fox-Kemper, P. P. Sullivan, P. E. Hamlington, and **S. R. Haney** , The form and orientation of Langmuir Cells for misaligned winds and waves: 2012. *Journal of Geophysical Research-Oceans*, **117**(C05001): 22pp. doi: <http://dx.doi.org/10.1029/2011JC007516>.

## PUBLICATIONS IN PROGRESS

**S. Haney**, W.R. Young, Radiation of internal gravity waves by groups of surface gravity waves: 2016. *Journal of Fluid Mechanics*, in prep.

## OTHER PUBLICATIONS

**S. Haney**, 2015: *Mixing and Restratification in the Upper Ocean: Competing Mechanisms in the Wave-Averaged Boussinesq Equations*, PhD thesis, University of Colorado Boulder, 153 pp.

## PRESENTATIONS AND POSTERS

- S. Haney**, W.R. Young, Interactions Between Surface Gravity Wave Groups and Deep Stratification in the Ocean: 2016. *VIII<sup>th</sup> International Symposium on Stratified Flows*, San Diego, USA, August 29 - September 1.
- S. Haney**, W.R. Young, The Wake of Internal Gravity Waves Behind Groups of Surface Gravity Waves: 2016. *Liege Colloquium on Submesoscale Processes: Mechanisms, Implications And New Frontiers*, Liege, Belgium, May 23-27.
- B. Fox-Kemper, N. Suzuki, Q. Li, **S. Haney**, Effects of ocean surface gravity waves: on turbulence, instabilities, and frontogenesis: 2016. *Liege Colloquium on Submesoscale Processes: Mechanisms, Implications And New Frontiers*, Liege, Belgium, May 23-27.
- S. Haney**, B. Fox-Kemper, K. Julien, A. Webb, 2016: Langmuir Turbulence and Symmetric Instabilities in Submesoscale Fronts. *Ocean Sciences Meeting*, New Orleans, Louisiana, February 21-26.
- S. Haney**, B. Fox-Kemper, K. Julien, A. Webb, 2015: Instabilities of the Ocean Mixed Layer in the Wave-Averaged Boussinesq Equations. Invited Talk. *MURI 3D + 1 Workshop*, Scripps Institution of Oceanography, La Jolla, CA, September 28.
- S. Haney**, B. Fox-Kemper, K. Julien, A. Webb, 2015: Baroclinic Instabilities in the Wave-Forced Ocean Mixed Layer. Invited Talk. *CASPO Seminar*, Scripps Institution of Oceanography, La Jolla, CA, February 25.
- S. Haney**, B. Fox-Kemper, K. Julien, 2015: The Influence of Stokes Drift on Baroclinic Instabilities in the Ocean Mixed Layer. Invited Talk. *Boulder Fluids Seminar*, Boulder, CO, January 13.
- S. Haney**, B. Fox-Kemper, K. Julien, 2014: Mixing and Restratification in the Ocean Mixed Layer: Competing Mechanisms. Invited Talk. *Physical Oceanography Dissertation Symposium (PODS) VIII*, Lihue, Kaua'i, HI, October 5-9.
- S. Haney**, B. Fox-Kemper, K. Julien, 2014: Stability of the Ocean Mixed Layer in the Presence of Surface Gravity Wave Forcing. *Ocean Sciences Meeting, Poster Session*, Honolulu, HI, February 23-28.
- N. Suzuki, B. Fox-Kemper, P. E. Hamlington, L. P. Van Roekel, and **S. Haney**, 2014: The surface wave influence on mixed-layer frontal currents and multiscale turbulence. *Ocean Sciences Meeting, Poster Session*, Honolulu, HI, February 23-28.
- S. Haney**, B. Fox-Kemper, K. Julien, 2013: Modifications to Symmetric and Baroclinic instabilities in the Presence of Surface Gravity Waves. *American Physical Society, 66<sup>th</sup> Annual meeting Division of Fluid Dynamics*, Pittsburgh, Pennsylvania, November 24-26.
- S. Haney**, B. Fox-Kemper, K. Julien, 2013: Instabilities in the Stratified, Wave-Forced Ocean Mixed Layer. *19th Conference on Atmospheric and Oceanic Fluid Dynamics, Poster Session*, Newport, Rhode Island, June 17-21.
- S. Haney**, B. Fox-Kemper, K. Julien, 2013: Instabilities in the Stratified, Wave-Forced Ocean Mixed Layer. *33rd Center for Nonlinear Studies (CNLS) Annual Conference: Ocean Turbulence, Poster Session*, Santa Fe, New Mexico, June 3-7.
- S. Haney**, B. Fox-Kemper, S. Bachman, B. Cooper, S. Kupper, K. McCaffrey, S. Stevenson, L. Van Roekel, A. Webb, R. Ferrari, 2012: Hurricane Wake Restratification Mechanisms. *NCAR IMAGe Theme of the Year 2012: Connections between Rotating, Stratified Turbulence and Climate. Poster Session*, Boulder, Colorado, May 14-18.

**S. Haney**, B. Fox-Kemper, S. Bachman, B. Cooper, S. Kupper, K. McCaffrey, S. Stevenson, L. Van Roekel, A. Webb, R. Ferrari, 2012: Hurricane Wake Restratification Mechanisms. *CIRES Rendezvous 2012 Poster Session*, Boulder, Colorado, April 24<sup>th</sup>.

**S. Haney**, B. Fox-Kemper, S. Bachman, B. Cooper, S. Kupper, K. McCaffrey, S. Stevenson, L. Van Roekel, A. Webb, R. Ferrari, 2012: Hurricane Wake Restratification Mechanisms. *American Geophysical Union Ocean Sciences Meeting*, Salt Lake City, Utah, February 20-24.

## OTHER INFORMATION

Member of American Geophysical Union

Languages: English, Fortran, MATLAB, L<sup>A</sup>T<sub>E</sub>X, UNIX

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