

Wagner, Gregory LeClaire

Postdoctoral researcher

CONTACT	<div>✉ wagner.greg@gmail.com</div> <div>🌐 http://glwagner.github.io</div> <div>☎ (781) 710-0871</div>		Gregory Wagner 77 Massachusetts Avenue, Bldg 54-1615 Cambridge, Massachusetts 02142
EDUCATION	PhD (2016)	Mechanical and Aerospace Engineering, University of California, San Diego	
	MSE (2010)	Aerospace Engineering, University of Michigan, Ann Arbor	
	BSE (2009), <i>Magna Cum Laude</i>	Aerospace Engineering, University of Michigan, Ann Arbor	
INTERESTS	Fluid dynamics, physical oceanography, turbulence, mixing, waves, biological physics		
RESEARCH EXPERIENCE	Postdoctoral Associate at the Massachusetts Institute of Technology since 2016 <ul style="list-style-type: none">Realistic and idealized modeling of turbulence, diapycnal mixing, and transport over rough, sloping and heterogeneous bathymetry (with Raffaele Ferrari and Glenn Flierl)		
	PhD at University of California, San Diego 2010–2016 <ul style="list-style-type: none">Dissertation titled “On the coupled evolution of oceanic internal waves and quasi-geostrophic flow” (with William R. Young)Mixing and swimming in stratified and unstratified low Reynolds number flow (with Eric Lauga and William R. Young)Theory of friction-based locomotion (with Eric Lauga)		
	Fellow at the WHOI program in Geophysical Fluid Dynamics Summer 2013 <ul style="list-style-type: none">Project on granular fluid dynamics and granular flow in a rotating drum (with Neil Balmforth)		
	Undergraduate Research at the University of Michigan 2008–2010 <ul style="list-style-type: none">Electrostatic simulations in complex geometries for controlling particle charge in a micro/nanoparticle electrostatic propulsion system (with Tom Liu)Numerical simulation of one-dimensional combustion (with Matthias Ihme)		
INDUSTRY EXPERIENCE	Product Engineer, Accio Energy, Inc., Ann Arbor, Michigan January–June, 2010 <ul style="list-style-type: none">Development of novel wind energy technology utilizing windy advection of charged dropletsModeling of force balances and droplet cloud electric fields, experimental design		
TEACHING	Teaching Assistant, Fluid Dynamics II (grad) Winter 2014 Teaching Assistant, Introduction to Mathematical Physics (undergrad) Spring and Fall 2015		
ACTIVITIES	<ul style="list-style-type: none">Flow Encountering Abrupt Topography (FLEAT) cruise, Palauan Pacific, June 2016Arctic Mix cruise looking for waves and mixing in the Beaufort Sea, Sept 2015Fellow, WHOI Program in Geophysical Fluid Dynamics, Summer 2013<i>Softflow</i>: workshop in Biological Complex Fluids, Cargese, France, July 2012Social Coordinator, UCSD Graduate Student Association, 2013–2014President, Students for the Exploration and Development of Space, University of Michigan, 2010		
AWARDS	<ul style="list-style-type: none">NOAA Climate and Global Change Postdoctoral Fellowship, 2016–20182016 Outstanding Teaching Assistant Award, Dept of Mech and Aerospace Engineering, UCSDUCSD Focht-Powell Graduate Student Fellowship, 2010–2013University of Michigan James B. Angell Scholar, 2009University of Michigan Dean’s List, Winter ’06, Winter ’07, Fall ’08, Winter ’09		

PUBLICATIONS

1. **An asymptotic model for the propagation of internal tides through quasi-geostrophic flow**
Gregory L. Wagner, Gwenäel Ferrando, and William R. Young
submitted to the Journal of Fluid Mechanics
2. **A three-component model for the coupled evolution of near-inertial waves, quasi-geostrophic flow, and the near-inertial second harmonic**
Gregory L. Wagner and William R. Young
Journal of Fluid Mechanics, **2016**, 802
3. **A tale of two spicy seas**
Jennifer A. MacKinnon, Jonathan D. Nash, Matthew H. Alford, Andrew J. Lucas, John B. Mickett, Emily L. Shroyer, Amy F. Waterhouse, Amit Tandon, D. Sengupta, Amala Mahadevan, M. Ravichandran, Robert Pinkel, Daniel L. Rudnick, Caitlin B. Whalen, Marion S. Alberty, J. Sreelekha, Elizabeth C. Fine, D. Chaudhuri, and **Gregory L. Wagner**
Oceanography, 2016
4. **Available potential vorticity and wave-averaged quasi-geostrophic flow**
Gregory L. Wagner and William R. Young
Journal of Fluid Mechanics, **2015**, 785
5. **Mixing by microorganisms in stratified fluids**
Gregory L. Wagner, William R. Young, and Eric Lauga
Journal of Marine Research, **2014**, 72
6. **Bubble-Propelled Micromotors for Enhanced Transport of Passive Tracers**
Jahir Orozco, Beatriz Jurado-Sanchez, **Gregory Wagner**, Wei Gao, Rafael Vazquez-Duhalt, Sirilak Sattayasamitsathit, Michael Galarnyk, Allan Cortes, David Santillan, Joseph Wang
Langmuir, **2014**, 30(18)
7. **Crawling scallop: Friction-based locomotion with one degree of freedom**
Gregory L. Wagner and Eric Lauga
Journal of Theoretical Biology, **2013**, 324
8. **Specific Charge Control for Micro/Nano-Particle Electrostatic Propulsion**
T. Liu, G. L. Wagner, A. Gallimore, B. Gilchrist, and P. Peterson
AIAA-2009-5090, 45th AIAA/ASME/SAE/ASEE Joint Propulsion Conference, Denver, CO, 2-5 August 2009