

Kevin T. Du Clos Curriculum Vitae November 9, 2021	Postdoctoral Researcher Oregon Institute of Marine Biology University of Oregon Cell: 858-245-7125 E-mail: duclos@uoregon.edu URL: kevinduclos.com
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Research interests

Biological fluid mechanics, phytoplankton biology and ecology, suspension feeding, scientific programming.

Education

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| 2016 | Ph.D. in Biological Oceanography, University of Maine
Dissertation: Fluid dynamics of active suspension feeding
Advisors: Pete Jumars and Damian Brady |
| 2012 | M.S. in Biological Oceanography, University of Maine
Thesis: Polychaete burrowing behavior in sand and mud
Advisors: Pete Jumars and Sara Lindsay |
| 2007 | B.S. in Microbiology with Photography minor, University of California at San Diego |

Professional appointments

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| 2020–Present | Postdoctoral associate, University of Oregon
Advisor: Kelly Sutherland |
| 2019–2020 | Adjunct instructor, University of South Florida |
| 2017–2020 | Postdoctoral researcher, University of South Florida
Advisor: Brad Gemmell |

Publications (16)

David M Durieux, Kevin T Du Clos, David B Lewis, and Brad J Gemmell. Benthic jellyfish dominate water mixing in mangrove ecosystems. *Proceedings of the National Academy of Sciences*, 118(30), 2021

Nimish Pujara, Kevin T Du Clos, Stephanie Ayres, Evan A Variano, and Lee Karp-Boss. Measurements of trajectories and spatial distributions of diatoms (*Coscinodiscus* spp.) at dissipation scales of turbulence. *Experiments in Fluids*, 62(7):1–15, 2021

Nils B Tack, Kevin T Du Clos, and Brad J Gemmell. Anguilliform locomotion across a natural range of swimming speeds. *Fluids*, 6(127), 2021

Kevin T Du Clos, Lee Karp-Boss, and Brad J Gemmell. Diatoms rapidly alter sinking behavior in response to changing nutrient concentrations. *Limnology and Oceanography*, 66:892–900, 2021

Brad J Gemmell, Kevin T Du Clos, Sean P Colin, Kelly R Sutherland, and John H Costello. The most efficient metazoan swimmer creates a ‘virtual wall’ to enhance performance. *Proceedings of the Royal Society B*, 288(1942):20202494, 2021

- Featured in *The New York Times* and on the *Quirks and Quarks* radio show (CBC).

Sean P Colin, John H Costello, Kelly R Sutherland, Brad J Gemmell, John O Dabiri, and Kevin T Du Clos. The role of suction thrust in the metachronal paddles of swimming invertebrates. *Scientific Reports*, 10:17790, 2020

Sara M Garcia, Olivia H Hawkins, Kevin T Du Clos, and Brad J Gemmell. Sublethal effects of crude oil and chemical dispersants on the eastern oyster: Are later life history stages more vulnerable? *Journal of Marine Science and Engineering*, 8(10):808, 2020

Kevin T Du Clos, Lee Karp-Boss, Tracy A Villareal, and Brad J Gemmell. *Coscinodiscus wailesii* mutes unsteady sinking in dark conditions. *Biology Letters*, 15(3):20180816, 2019

Kevin T Du Clos, John O Dabiri, John H Costello, Sean P Colin, Jennifer R Morgan, Stephanie M Fogerson, and Brad J Gemmell. Thrust generation during steady swimming and acceleration from rest in anguilliform swimmers. *Journal of Experimental Biology*, 222(22), 2019

Kevin T Du Clos, Amy Lang, Sean Devey, Philip J Motta, Maria Laura Habegger, and Brad J Gemmell. Passive bristling of mako shark scales in reversing flows. *Journal of The Royal Society Interface*, 15(147), 2018
- Featured in *The Independent*, *Ars Technica*, *New Scientist News*, and *Fox News* articles.

Kevin T Du Clos and Houshuo Jiang. Overcoming hydrodynamic challenges in suspension feeding by juvenile *Mya arenaria* clams. *Journal of The Royal Society Interface*, 15(138):20170755, 2018

Kevin T Du Clos, Ian T Jones, Tyler J Carrier, Damian C Brady, and Peter A Jumars. Model-assisted measurements of suspension-feeding flow velocities. *Journal of Experimental Biology*, 220:2096–2107, 2017
- Featured in the 2018 *Journal of Experimental Biology* calendar.

Kevin T Du Clos. Visualizing subsurface burrowing by the polychaete *Alitta virens* with particle image velocimetry. *Limnology and Oceanography: Methods*, 12:703–712, 2014

T L Ogden and Kevin T Du Clos. ‘SWeRF—A Method for Estimating the Relevant Fine Particle Fraction in Bulk Materials for Classification and Labelling Purposes’ by Pensis, Luetzenkirchen, and Friede. *Annals of Occupational Hygiene*, 58(6):784–787, 2014

Kevin T Du Clos, Sara M Lindsay, and Peter A Jumars. Spatial distribution of *Alitta virens* and *Clymenella torquata* with respect to rigid boundaries in mud and sand. *Journal of Marine Research*, 71(3):211–226, 2013

Ranhy Bang, Lorraine Marnell, Carolyn Mold, Mary-Pat Stein, Kevin T Du Clos, Corinn Chivington-Buck, and Terry W Du Clos. Analysis of binding sites in human C-reactive protein for Fc γ RI, Fc γ RIIA, and C1q by site-directed mutagenesis. *Journal of Biological Chemistry*, 280(26):25095–25102, 2005

Funding

2021-2024	NSFGEO-NERC Collaborative Research: Novel imaging, physiology and numerical approaches for understanding biologically mediated, unsteady sinking in marine diatoms. PIs: Brad Gemmell, Lee Karp-Boss, and Glen Wheeler. I co-wrote the proposal as a postdoc at USF and will be issued a sub-contract to work on the project as co-PI at the University of Oregon. Amount of subcontract: \$102,756.
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Honors, awards, and fellowships

Jan. 2018	Postdoc Travel Award Office of Graduate Studies, University of South Florida
Aug. 2016	Chase Distinguished Research Assistantship Graduate School, University of Maine
May 2016	Faculty Choice oral presentation School of Marine Sciences Graduate Student Symposium, University of Maine
April 2016	Graduate Research Excellence Award College of Natural Sciences, Forestry, and Agriculture, University of Maine

Invited seminars

May 2021	University of Oregon, Oregon Institute of Marine Biology – Charleston, OR Biomechanics of swimming in diverse marine organisms
March 2020	University of South Florida, Department of Integrative Biology – Tampa, FL Sink or swim: Insight into aquatic locomotion

Jan. 2018 | University of South Florida, College of Marine Sciences – St. Petersburg, FL
Biomechanics of swimming and suspension feeding

Teaching and mentorship

Courses taught

Spring 2019 | Biology Skills – University of South Florida
– Fall 2019 | Primary instructor for three semesters
Spring 2018 | Independent study: Research skills – University of South Florida

Guest lectures

Feb. 2021 | University of South Florida, Mechanical Engineering Department
Biofluids and Bioinspired Design Class
Biomechanics of swimming in sharks and siphonophores
Feb. 2021 | University of Oregon, Institute of Ecology and Evolution
Marine Biology Course
Benthic Communities
Jan. 2019 | University of South Florida, Integrative Biology Department
Marine Biology Course
Adaptations for the chemical and physical environment
Oct. 2018 | University of South Florida, Mechanical Engineering Department
Biological Fluid Mechanics Course
Biomechanics of swimming and suspension feeding
Oct. 2018 | University of South Florida, Integrative Biology Department
Marine Ecosystem Dynamics Course
Coastal processes
June 2014 | Darling Marine Center, University of Maine
MATLAB for Marine Scientists
Image processing

Undergraduate students mentored

2021 | Kayla Nease: Siphonophore morphometrics.
2019 | Hailley Nieves: Effects of crude oil on marine snow communities.
2018 | Hailley Nieves: Thrust and drag forces associated with accelerating lamprey swimming.
Edward Goode: Effects of oil exposure on copepod escape responses.
Received ‘Excellence in Research’ award from USF for project.
2017 | Marcos Martinez: Effects of oil droplet exposure on oyster suspension feeding.
2013–2015 | Ian Jones, Tyler Carrier, and Carolyn Garrity: Quantification of suspension feeding flow using particle image velocimetry (PIV)
2011 | Alexander Borsky: Tracer study of bioturbation activity.

Conference presentations

Jan. 2021 | Society for Integrative and Comparative Biology Meeting – Virtual
Poster presentation: Synchronous swimming in siphonophores yields higher maximum speeds but lower efficiency and higher cost of transport

Jan. 2020	Ocean Sciences Meeting – San Diego, CA Oral presentation: Dynamic Unsteady Sinking Behavior in Marine Diatoms: Rapid Responses to Changing Nutrient Conditions.
Jan. 2020	Gulf of Mexico Oil Spill & Ecosystem Science Conference – Tampa, FL Poster presentation: Microzooplankton Communities Associate with Oiled Marine Snow.
Jan. 2019	Microscale Ocean Biophysics Meeting – Whistler, Canada Poster presentation: Effects of light and nutrients on unsteady diatom sinking.
Jan. 2019	Society for Integrative and Comparative Biology Meeting – Tampa, FL Oral presentation: Flexible scales of the mako shark respond to drag inducing small-scale flow features.
Feb. 2018	Ocean Sciences Meeting – Portland, OR Oral presentation: The Pressure's On, Then Off: Sea Lampreys Rapidly Switch from Push to Pull Thrust When Accelerating from Rest.
Nov. 2016	Microscale Ocean Biophysics Meeting – Eilat, Israel Oral presentation: Suspension-feeding rates of juvenile clams
Feb. 2016	Ocean Sciences Meeting – New Orleans, LA Oral presentation: Particle image velocimetry (PIV) measurements of suspension-feeding velocities
Jan. 2015	Microscale Ocean Biophysics Meeting – Aspen, CO Poster presentation: Modeling pipette capture regions.
Feb. 2014	Ocean Sciences Meeting – Honolulu, HI Poster presentation: Factors affecting refiltration by model filter feeders.
March 2013	Benthic Ecology Meeting – Savannah, GA Oral presentation: Particle image velocimetry for surface visualization of <i>Alitta virens</i> burrowing.
March 2012	Benthic Ecology Meeting – Norfolk, VA Poster presentation: Preferential burrowing of <i>Alitta virens</i> at rigid boundaries in mud but not sand.

Professional service and outreach

October 2021	Organized and taught MATLAB workshop for graduate students, Oregon Institute of Marine Biology, University of Oregon
Fall 2021	Postdoctoral representative, Diversity, Equity, and Inclusion Committee, Biology Department, University of Oregon
Nov. 2020	Postdoc Panel, University of South Florida, Department of Integrative Biology
Jan. 2019	Session co-chair, "Swimming: It's a Drag", Society for Integrative and Comparative Biology Meeting, Tampa, FL
Aug. 2019	Grant proposal reviewer <i>USC Sea Grant Program</i>
May 2016	Darling Marine Center Open House, University of Maine
April 2016	Elementary school presentation on the scientific method, Great Salt Bay Community School, Damariscotta, ME