

William M. Durham

- CONTACT INFORMATION Dept. of Physics and Astronomy (+44) 0114 22 24537
University of Sheffield w.m.durham@sheffield.ac.uk
Hounsfield Road <http://mackdurham.group.shef.ac.uk/>
Sheffield, S3 7RH
United Kingdom
- ACADEMIC POSITIONS from 2016 to present:
- Lecturer of Biological Physics, Dept. of Physics and Astronomy, University of Sheffield
- Member, Imagine: Imaging Life Initiative, University of Sheffield
- Research Associate, Department of Zoology, University of Oxford
- from 2012 to 2016:
- Departmental Lecturer, Department of Zoology, University of Oxford
- Long Term Fellow, Human Frontier Science Program
- EDUCATION **Massachusetts Institute of Technology**, Cambridge, MA USA
- Ph.D., Civil and Environmental Engineering, 2012
Thesis: *Phytoplankton in flow*.
Advisor: Prof. Roman Stocker
- S.M., Civil and Environmental Engineering, 2006
Thesis: *The effect of fluid acceleration on sediment transport in the surf zone*.
Advisor: Prof. Ole S. Madsen
- Clemson University**, Clemson, SC USA
- B.S., Civil Engineering, 2004
- JOURNAL PUBLICATIONS Walsh, E., Feuerborn, A., Wheeler, J., Tan, A., **Durham, W. M.**, Foster, K.R., Cook, P. (2017) Microfluidics with fluid walls. *Nature Communications*. 8.
- Coyte, K. Z., Tabuteau, H., Gaffney, E. A., Foster, K. R.*, **Durham, W. M.*** (2017) Reply to Baveye et al.: Useful models are simple and extendable. *Proceedings of the National Academy of Sciences, USA*.
- Coyte, K. Z., Tabuteau, H., Gaffney, E. A., Foster, K. R.*, **Durham, W. M.*** (2017) Microbial competition in porous environments can select against rapid biofilm growth. *Proceedings of the National Academy of Sciences, USA*.
- Oliveira, N. M., Foster, K. R.*, **Durham, W. M.*** (2016) Single-cell chemotaxis during biofilm formation. *Proceedings of the National Academy of Sciences, USA*.
- Oliveira, N. M., Martinez-Garcia, E., Xavier, J., **Durham, W. M.**, Kolter, R., Kim, W., Foster, K. R. (2015) Biofilm formation as a response to ecological competition. *PLoS Biology*. 13.
- De Lillo, F., Cencini, M., **Durham, W. M.**, Barry, M., Stocker, R. Climent, E., Boffetta, G. (2014) Turbulent fluid acceleration generates clusters of gyrotactic microorganisms. *Physical Review Letters*. 112.

JOURNAL
PUBLICATIONS
(continued)

Durham, W. M., Climent, E., Barry, M., De Lillo, F., Boffetta, G., Cencini, M., Stocker, R. (2013) Turbulence drives microscale patches of motile phytoplankton. *Nature Communications*. 4.

Durham, W. M., Tranzer, O., Leombruni, A., Stocker, R. (2012) Division by fluid incision: biofilm patch development in porous media. *Physics of Fluids*. 24. (for the Milton Van Dyke Award in the Annual Gallery of Fluid Motion)

Durham, W. M., Stocker, R. (2012) Thin phytoplankton layers: characteristics, mechanisms, and consequences. *Annual Review of Marine Science*. 4.

Durham, W. M., Climent E., Stocker, R. (2011) Gyrotaxis in a steady vortical flow. *Physical Review Letters*. 106.

Marcos[†], Seymour, J. R.[†], Luhar, M.[†], **Durham, W. M.**[†], Mitchell, J. G., Macke, A., Stocker R.[†] (2011) Microbial alignment in flow changes ocean light climate. *Proceedings of the National Academy of Sciences, USA*. 108.

[†] denotes shared first authorship

Seymour, J. R., Ahmed, T., **Durham, W. M.**, Stocker R. (2009) Chemotactic response of marine bacteria to the extracellular products of *Synechococcus* and *Prochlorococcus*. *Aquatic Microbial Ecology*. 59.

Stocker, R. and **Durham, W. M.** (2009) Tumbling for stealth? *Science*. 325.

Durham, W. M., Kessler, J. O., and Stocker, R. (2009) Disruption of vertical motility by shear triggers formation of thin phytoplankton layers. *Science*. 323.

PAPERS IN
CONFERENCE
PROCEEDINGS

Madsen, O. S. and **Durham, W. M.** (2007) Pressure-induced subsurface sediment transport in the surf zone. *Proceedings of Coastal Sediments, American Society of Civil Engineering*.

Durham, W. M. and Gallagher, S. (2006) Bozeman bicycle network plan. *Proceedings of 10th National Conference on Transportation Planning for Small and Medium-Sized Communities*.

TEACHING

Microscopy and Spectroscopy, Fall 2017, University of Sheffield.

Optics, Fall 2017, University of Sheffield.

Physics with LabView, Spring 2017, University of Sheffield.

Experimental Physics II, Spring 2017, University of Sheffield.

Experimental Evolution, Hilary Term 2012, 2013, 2014, 2015, 2016, Oxford University.

Graduate Teaching Assistant, Introductory Fluid Dynamics, Spring 2005, MIT.

OTHER
ACTIVITIES

Co-organized mini-symposium on “Fluid Active Matter” at the International Congress of Theoretical and Applied Mechanics. 2016. Montreal, Canada.

Reviewed manuscripts for PNAS, Journal of Fluid Mechanics, Physics of Fluids, Hydrobiologia, New Journal of Physics, Journal of Plankton Research, Limnology and Oceanography: Fluids and Environments, Lab on a Chip, Marine Ecology Progress Series, eLife

Reviewed grants proposals from Marine Science and Technology Foundation, National Science Foundation (USA), Commonwealth Scientific and Industrial Research Organization (Australia), Human Frontiers Science Program

Over 35 invited talks at conferences, workshops, departmental visits, and etc.