Professor David Philip Marshall

Personal details

Present appointment:	*Professor of Physical Oceanography*,
Address:	Atmospheric, Oceanic and Planetary Physics Department of Physics, University of Oxford Clarendon Laboratory, Parks Road Oxford, OX1 3PU United Kingdom
email:	david.marshall@physics.ox.ac.uk

Degrees

Apr 2007:	*MA* (by special resolution), University of Oxford
Jan 1993:	*PhD in Physical Oceanography*, Imperial College, University of London thesis: *Dynamics of the North Atlantic Subtropical Gyre*
Aug 1989:	*BSc in Physics* (1st class), Imperial College, University of London

Employment

Sep 2024 - present:	*Co-Director*, Interdisciplinary Life and Environmental Science Landscape Award (Graduate Programme) University of Oxford
Aug 2022 - present:	*Programme Director*, Doctoral Training Partnership in Environmental Research (Graduate Programme), University of Oxford
Sep 2018 - Aug 2019:	*Associate Head*, Department of Physics, University of Oxford
Aug 2013 - Jul 2018:	*Head of Sub-Department*, Atmospheric, Oceanic and Planetary Physics, University of Oxford
Apr 2007 - present:	*Professor of Physical Oceanography*, University of Oxford
Sep 2003 - Mar 2007:	*Professor of Oceanography*, University of Reading
Oct 2000 - Aug 2003:	*Reader in Oceanography*, University of Reading
Oct 1994 - Sep 2000:	*Lecturer*, University of Reading
Oct 1992 - Sep 1994:	*Post Doctoral Research Associate*, Massachusetts Institute of Technology

Other appointments

Aug 2016 - Dec 2018:	*Adjunct Professor*, IMAS, University of Tasmania
Oct 2008 - Sep 2012:	*Co-director of 21st Century Ocean Institute*, James Martin 21st Century School, University of Oxford
Apr 2007 - present:	*Professorial Fellow in Oceanography*, St Hugh's College, University of Oxford
Jan 2011 - present:	*Trustee*, The Principal and Fellows of St Hugh's College in the University of Oxford
Sep 1991 - Sep 1992:	*Research Fellow*, Massachusetts Institute of Technology

Honours

Jun 2026:	*Outstanding Supervisor Award*, nominated by ILESLA/BBSRC DTP/NERC DTP DPhil students, University of Oxford
Jul 2024:	*MPLS Divisional Teaching Award*, University of Oxford
Sep 2017:	*Elected Member*, Academia Europaea
Dec 2014:	*Best Lecturers of the Bad Honnef Physics Schools 2014* (1 of 3 student choices)
Aug 2014:	*Elected Fellow*, Institute of Physics
Jul 2014:	*Appleton Medal and Prize*, Institute of Physics
Jul 2011:	*Editors' Citation for Excellence in Refereeing*, Geophysical Research Letters, American Geophysical Union
Sep 2010:	*31st Victor P. Starr Memorial Lecture*, Massachusetts Institute of Technology
Oct 2002:	*Philip Leverhulme Prize*, Leverhulme Foundation
Jun 2002:	*Fellowship (young scientist award)*, Challenger Society
Oct 1994:	*Elected Fellow*, Royal Meteorological Society
Jun 1989:	*P. A. Sheppard Prize in Atmospheric Physics*, Imperial College, University of London
Jun 1989:	*Dora Belasco Prize in Meteorology*, Unisversity of London
Jun 1987:	*Matthews Memorial Prize in Physics*, Imperial College, University of London

Sea-going experience

Aug 2013	-	Sep 2013:	JC090 cruise, mooring recovery and turbulence profiling for OSMOSIS project, aboard RRS James Cook (19 days)

Academic service

External

Nov 2025	-	present:	Proposal evaluation panel member, *ANR CES 01 - Milieux et Biodiversité : Terre Fluide et Solide*, France
Jul 2025	-	present:	*E[5]DTP External Advisory Group*, University of Edinburgh
Jul 2024	-	present:	External advisor, REF2029 UoA7, University of Bangor
Jun 2023	-	present:	Chair, Peer Review Panel, University of Reading-ECMWF Research Programme on *Advancing the Frontiers of Earth System Prediction*
Jun 2021	-	present:	*NEMO Eddy Closure Working Group*
May 2021	-	Jun 2023:	*IPSL (Paris) Scientific Advisory Board*
Jul 2020	-	Jul 2021:	Co-organiser, *Physics of the Ocean* Summer School, Badhonnef (cancelled due to COVID)
Dec 2020	-	Nov 2023:	*National Oceanography Centre Science and Technology Advisory Board*
Sep 2020	-	Jul 2020:	Panel member, *NERC REF* (Evaluation of NERC Centres)
Sep 2018:			Co-Chair, *External Review Panel, Graduate Program in Ocean Science*, Ocean University of China, Qingdao.
Apr 2018	-	Mar 2024:	Programme Board, *CLASS National Capability Programme*, NERC
Mar 2018	-	Mar 2022:	Member, REF 2021 Panel 7 Earth Systems and Environmental Sciences
Mar 2018:			Co-organiser, NERC/Met Office School, *Oceans in Weather and Climate*, Exeter
Jan 2018	-	Mar 2022:	Associate Editor, *Ocean Modelling*
Nov 2017	-	Sep 2020:	Proposal evaluation panel member, *ANR CES 01 - Milieux et Biodiversité : Terre Fluide et Solide*, France
Jul 2017:			Co-organiser, *Physics of the Ocean* Summer School, Badhonnef
Apr 2015:			*Francqui Prize Jury*, Francqui Foundation, Brussels
Mar 2015:			Co-organiser, NERC/Met Office School, *Oceans in Weather and Climate*, Exeter
Oct 2014	-	Sep 2021:	External expert, *NEMO Developers Committee*
Sep 2014:			Chair, *External Review Panel*, Scottish Association for Marine Science
Jul 2013:			Organising committee, *US AMOC/RAPID International Science Meeting*, Baltimore
Apr 2012	-	Sep 2013:	Panel member, NERC REF (Evaluation of NERC Centres)
Oct 2011	-	Sep 2014:	Council, Royal Meteorological Society
Oct 2010	-	Sep 2014:	External examiner, *BSc/MOcean in Oceanography*, University of Southampton
Jun 2010:			NERC *Climate System Theme Evaluation Committee*
Jun 2010	-	Jul 2018:	NERC *National Oceanography Centre Association Board*
Jan 2010	-	Jun 2014:	NERC *Peer Review College*, Pool of Chairs
Dec 2009:			NOAA *CVP Proposal Review Panel,* United States
Sep 2009:			NWO *Climate Feedbacks Proposal Review Panel*, Netherlands
Mar 2009:			NERC *National Oceanography Centre Focus Group*
Jan 2009:			NOAA *AMOC Proposal Review Panel*, United States
Dec 2008	-	Apr 2017:	NERC *High Performance Computing Steering Committee* (chair since Oct 2013)
Dec 2008:			*Ad Hoc Committee*, Woods Hole Oceanographic Institution, United States
Nov 2008:			Scottish Funding Council *International Assessment Panel*.
Jul 2008	-	Dec 2009:	NERC *Peer Review College*
Jun 2008	-	Sep 2008:	Expert Reviewer, *Research Assessment Exercise Panel 17*.
Dec 2007:			*NERC/Microsoft Programme Working Group*
Sep 2007:			Scientific committee, *Unstructured Mesh Ocean Modelling Workshop*, London
Aug 2007:			External review panel, Los Alamos National Laboratory Ocean Climate Modelling Programme
Apr 2007	-	Jul 2020:	*Programme Advisory Group*, RAPID-WATCH Directed Programme, NERC
Mar 2007:			Organising committee, *CLIVAR Subpolar Gyre Workshop*, Kiel
Nov 2006:			Organising committee, *Unstructured Mesh Modelling Workshop*, Miami
Apr 2006:			CFCAS Network Review Committee, Ottawa
Jan 2006	-	Nov 2006:	Writing team and implementation group, NERC RAPID-WATCH directed programme (allocated funding of £16M over 7 years).
Oct 2005:			Organising committee, *Unstructured Mesh Modelling Workshop*, Bremerhaven
Aug 2005	-	Jul 2011:	*Management committee*, Imperial College Ocean Model
Apr 2004:			Convenor, *Small and mesoscale ocean processes and their impact on the large-scale*, European Geophysical Union General Assembly, Nice

Apr 2004:		Organising Committee, *CLIVAR Atlantic Predictability Workshop*, Reading
Feb 2004	- Jan 2023:	Editorial Board, *Dynamics of Atmospheres and Oceans*
July 2003	- Jun 2005:	NERC *Peer Review College*
Apr 2003	- Jan 2005:	Guest Editor, *Deep Sea Research* Special Issue
Apr 2003:		Convenor, *Small and mesoscale ocean processes and their impact on the large-scale*, European Geophysical Union General Assembly, Nice
Jan 2003	- Jun 2007:	CLIVAR *Atlantic Implementation Panel*
Sep 2002	- Jun 2003:	NERC *Marine Science Peer Review Committee*
Sep 2000	- Mar 2003:	*Nansen Medal Committee*, European Geophysical Society
Apr 2000	- Mar 2003:	*Secretary for Oceanography*, European Geophysical Society
Apr 2000:		Convenor, *The global ocean circulation*, European Geophysical Society General Assembly, Nice
Dec 1999	- Apr 2001:	NERC *Working Group on Rapid Climate Change*
Aug 1999:		Convenor, *Thermocline ventilation*, World Ocean Circulation Experiment International Workshop on the Atlantic, Kiel
Apr 1999:		Convenor, *Small and mesoscale ocean processes and their impact on the large-scale*, European Geophysical Union General Assembly, The Hague
Various dates:		External Examiner for 31 PhD students (Stockholm, University of Tasmania, Utrecht, Brest, McGill, Sydney, UPMC Paris, Cambridge, East Anglia, Keele, Imperial College London, University College London, Liverpool, Louvain-la-Nueve, Oxford, Plymouth, Southampton)
Various dates:		Referee for numerous journals, publishers, funding agencies, tenure decisions/appointments, etc

University of Oxford

Dec 2025	- present:	Governing Body EDI Lead, St Hugh's College
Dec 2025	- present:	*EDI Committee*, St Hugh's College
Dec 2025	- present:	HR *Committee*, St Hugh's College
Sep 2025	- present:	*Risk, Audit and Governance Committee*, St Hugh's College
Mar 2025	- present:	Academic Lead, REF 2029, Department of Physics
Nov 2024	- present:	Co-Director, BBSRC-NERC Interdisciplinary Life and Environmental Science Landscape Award
Dec 2023	- Feb 2026:	*Investment Committee*, St Hugh's College
Oct 2023	- present:	Volunteer Mentor for Departmental Mentoring programme
Oct 2022	- Jul 2025:	Assessor (B1, Fluid Dynamics), Department of Physics
Aug 2022	- present:	Programme Director, NERC Doctoral Training Programme in Environmental Research
Aug 2022	- present:	*Doctoral Training Centre Management Committee*
Apr 2021	- Jun 2024:	*Race Equality Action Plan Working Group,* Department of Physics
Oct 2021	- Sep 2024:	*Academic Committee,* Department of Physics
Oct 2019	- present:	*NERC Doctoral Training Programme Management Committee* (chair since Aug 2022)
Oct 2018	- Jul 2019:	Associate Head, Department of Physics
Dec 2017	- Jun 2018:	Chair, NERC Demand Management Decision Panel
Oct 2017	- Sep 2023:	*Finance Committee*, St Hugh's College
Oct 2016	- Dec 2022:	Governing Body representative, *Alumni Association Board*, St Hugh's College
Oct 2016	- Aug 2019:	*Development Board*, Department of Physics
Jun 2016:		Keynote speaker, *Physics Alumni Garden Party*, Oxford
Apr 2016:		Keynote speaker, *Alumni Weekend in North America*, Washington D.C.
Nov 2015	- Nov 2017:	Co-organiser and Host, AOPP Annual Alumni Event at the Royal Society
Oct 2014	- Jul 2018:	*Nominations Committee*, Department of Physics
Oct 2013	- Jul 2014:	Finals Examiner, Department of Physics
Aug 2013	- Jul 2018:	Head of Sub-Department, Atmospheric, Oceanic and Planetary Physics
Jul 2013	- Aug 2019:	*Physics Management Committee*
Sep 2012	- Feb 2013:	*Halley Chair Appointment Committee*
Oct 2012	- Jan 2013:	*Geochemistry Chair Appointment Committee*
Sep 2009	- Jul 2012:	Convenor, *Atmospheric, Oceanic and Planetary Physics Seminar Series*
Aug 2012:		*Athena SWAN Bronze Award*, Department of Physics
Sep 2010	- Sep 2012:	Chair, *Athena Swan Working Group*, Department of Physics
Nov 2009	- present:	*Hurry Prize Committee*, St Hugh's College
Jul 2009	- Sep 2015:	*Renumeration Committee*, St Hugh's College
May 2009	- Sep 2012:	Chair, *Oxford Supercomputing Centre Management Committee*
Apr 2009	- Sep 2010:	*Personnel Committee*, Department of Physics

Jul 2008:			Discretionary Increment Committee, Department of Physics
Jan 2008	-	Apr 2009:	*Oxford Supercomputing Centre Advisory Group*
Apr 2007	-	present:	*Governing Body*, St Hugh's College
Various dates:			Internal examiner for 15 DPhil students

University of Reading

Apr 2006	-	Mar 2007:	*Physics Degree Working Group*
Jan 2006	-	Mar 2007:	*Walker Institute Scientific Steering Group*
Feb 2005	-	Jun 2006:	*Theme in Waves* Steering Committee
Dec 2005	-	Apr 2006:	*Physics/Meteorology Degree Working Group*
Jun 2005	-	Mar 2007:	*Departmental Management Group*
Jun 2005	-	Jan 2006:	*Higher Degree Tutor*
Apr 2005	-	Mar 2007:	*Theme in Earth System Science* Management Group
Oct 2003	-	Mar 2007:	*IT Advisory Group*
Oct 2003	-	Mar 2007:	*Research Infrastructure Subcommittee*
Oct 2003	-	Mar 2007:	*Council*, School of Meteorology, Mathematics and Physics
Oct 2003	-	Sep 2006:	*Higher Degree Board*, Department of Meteorology
Jul 2003	-	Jan 2007:	*Computing Manager*, Department of Meteorology
Feb 2002	-	Sep 2002:	*Meteorology Faculty Search Committee*
Oct 2000	-	Mar 2007:	*New Lecturer Mentor*
Oct 2000	-	Jan 2001:	*Laboratory Review Working Group,* Department of Meteorology
Feb 2000	-	Apr 2000:	*Joint Infrastructure Fund Working Group*, Department of Meteorology
Jan 2000	-	Sep 2002:	Faculty of Science *Postgraduate Committee*
Nov 1999	-	Jun 2000:	*New Meteorology Degrees Implementation Group*
Sep 1999	-	Sep 2002:	*Higher Degree Tutor* (to about 50 research students)
Jun 1999	-	Sep 2002:	Chair, *Higher Degree Board,* Department of Meteorology
Jun 1999	-	Sep 2002:	*Higher Degree Forum*, Department of Meteorology
Jul 1998	-	Jun 1999:	*Seminar Coordinator*, Department of Meteorology
Apr 1998	-	Mar 2007:	*Fluids Laboratory Manager*, Department of Meteorology
Apr 1998	-	Sep 2000:	*Laboratory Committee*, Department of Meteorology
Oct 1997	-	Jun 1999:	*House Committee*, Department of Meteorology
Dec 1994	-	Jun 1998:	Chair, *Staff-Student Committee*, Department of Meteorology
Dec 1994	-	Jun 1998:	*Student Feedback Coordinator*, Department of Meteorology
Dec 1994	-	Jun 1998:	*Faculty of Science Joint Committee*
Various dates:			Tutor to 21 Undergraduate Students and 16 Masters Students
Various dates:			Member of 35 PhD thesis committees
Various dates:			Internal Examiner for 15 PhD students

Research contracts

Funded projects

Mar 2025	-	Sep 2029:	*BBSRC-NERC joint Interdisciplinary Life and Environmental Science Landscape Award* (ILESLA) (Co-I) (Note: this is the award for the first cohort of students; four further cohorts will be awarded on an annual basis)	£4 950 891
Nov 2023	-	Mar 2025:	*NERC Diversifying the Talent Pipeline Flexible Funding Award, Chrissie and the Skiddle Witch*	£49 975
Sep 2020	-	Mar 2024:	*SNAP-DRAGON* NERC (CoI)	£1 216 623
Sep 2020	-	Mar 2024:	*SNAP-DRAGON* NERC (CoI)	£1 216 623
Nov 2019	-	Oct 2024:	*SO-CHIC* European Union (CoI, led by Sorbonne Université)	€51 123
Oct 2019	-	Sep 2028:	*Doctoral Training Partnership in Environmental Research* (acting PI, taking over from original PI, David Pyle)	£11 688 857
Oct 2019	-	Sep 2021:	*TICTOC* NERC (acting PI following relocation of original PI, Laure Zanna)	£377 411
Oct 2017	-	Sep 2023:	NERC Industrial Strategy Studentship	£516 828
Sep 2014	-	Sep 2017:	*Implementation and optimisation of geostrophic parameterisations in ocean circulation models* NERC (CoI; led by University of Edinburgh)	£286 937
Sep 2014	-	Oct 2022:	*The Oxford DTP in Environmental Research*	£11 019 097

			(acting PI, taking over from original PI, David Pyle)	
Oct 2013	-	Aug 2019:	*UK-OSNAP* NERC (Oxford PI; led by NOC)	£402 652
Nov 2013	-	Mar 2014:	*Southern Ocean Modelling* Met Office (PI)	£40 000
Oct 2011	-	Mar 2016:	*TEA-COSI* NERC (CoI; led by NOC)	£335 847
Apr 2011	-	Sep 2015:	*OSMOSIS* NERC (Oxford PI; led by University of Reading)	£99 933
May 2011	-	Apr 2012:	*Numerical modelling of ocean circulation using a vorticity-potential method* NERC (PI)	£50 204
Oct 2010	-	Sep 2013:	*New framework for parameterising ocean eddies: energetics, conservation and flow stability* NERC (PI; with Imperial College)	£329 273
Apr 2010	-	Dec 2015:	*UK GEOTRACES* NERC (CoI; led by Earth Sciences)	£1 018 896
Feb 2009	-	Jan 2012:	*Role of ocean eddies in glacial cycles* NERC	£364 436
Oct 2008	-	Mar 2012:	*21st Century Ocean Institute* James Martin 21st Century School	£300 000
Oct 2008	-	Dec 2011:	*Adjoint sensitivity of sea level and inter-basin transports to forcing and circulation anomalies* NERC (PI, with Helen Johnson)	£411 347
Apr 2008	-	Sep 2010:	*Carbon Cycle Modelling, Assimilation and Prediction* NERC (Oxford PI; subcontracted from CEH)	£207 774
Jul 2007	-	Mar 2010:	*DESIRE* NERC (Oxford PI; led by BAS)	£259 718
Aug 2005	-	Sep 2010:	*Next-generation unstructured mesh ocean circulation modelling* NERC (Reading/Oxford PI; led by Imperial College)	£385 029
Apr 2005	-	Sep 2008:	*Attribution of Climate Change Signals in the Atlantic* NERC (PI; with Proudman Laboratory)	£175 987
Oct 2004	-	Sep 2007:	*Separation of Oceanic Boundary Layers* NERC (PI; with Imperial College)	£132 270
May 2003	-	Apr 2009:	*Monitoring array along the western margin of the North Atlantic* NERC (CoI; led by Proudman Laboratory)	£629 375
Jan 2002	-	Dec 2004:	*Participation in MESO* NERC (PI)	£30 752
Jun 2001	-	May 2004:	*North Atlantic ocean-atmosphere interaction* NERC (PI; with Brian Hoskins)	£145 533
Apr 2000	-	Mar 2003:	*Parameterisation of geostrophic ocean turbulence* NERC (PI)	£121 241
Oct 1998	-	Sep 2000:	*Transport of water masses in eastern North Atlantic* NERC (PI)	£25 355
Jul 1997	-	Dec 1998:	*Processes in boundary current separation* Met Office (PI)	£51 176
Jan 1996	-	Jun 2000:	*Semigeostrophic modelling of Gulf Stream and its interaction with bottom topography* NERC (PI)	£118 311
Oct 1995	-	Sep 1998:	*Dynamics of zonal jets* Univ. Reading Research Endowment Fund (PI)	£26 050

Community programme

Jan 2007	-	Dec 2014:	*RAPID-WATCH* Bryden, Marshall, Sutton, Wood, Marotzke, Srokosz	£16M

Research students

Current

Oct 2024	-	present:	Diya Ramful (with James Maddison, Rosie Eaves)
Oct 2024	-	present:	Jasmeen Tatani (with Myles Allen, Stuart Jenkins)
Oct 2023	-	present:	Tristan Pang (with James Maddison)
Oct 2016	-	present:	Ke Zhao

Degree awarded

Sep 2022	-	Mar 2025:	Salah Kouhen (with Hannah Christensen)
Oct 2020	-	Dec 2024:	Rosie Eaves (with James Maddison, Stephanie Waterman)
Sep 2022	-	Jul 2024:	Cheng Qian (with Peter Read)
Oct 2019	-	Feb 2024:	Jamie Rees (MRes, with Irene Moroz, Mike Bell, Peter Read)
Oct 2019	-	Jul 2023:	Kate Maurer (with James Maddison)
Oct 2019	-	Sep 2023:	Andrew Styles (with Mike Bell)
Mar 2019	-	Jan 2023:	James Boneham (with Helen Johnson)
Mar 2019	-	Oct 2022:	Fraser Goldsworth (with Helen Johnson)
Oct 2016	-	May 2022:	Twm Jonathan (with Helen Johnson, Mike Bell)
Oct 2014	-	May 2020:	Laura Cimoli (with Helen Johnson)
Oct 2013	-	Apr 2018:	Geoff Stanley
Oct 2013	-	Dec 2017:	Graeme MacGilchrist (with Helen Johnson)
Oct 2013	-	Jul 2017:	Tomas David (with Laure Zanna)
Oct 2012	-	Sep 2016:	Ed Doddridge
Oct 2012	-	Jan 2016:	Mark Forshaw (MRes; with James Maddison, Helen Johnson)
Oct 2011	-	Jun 2015:	Liam Brannigan (with George Nurser, Alberto Naveira Garabato)
Oct 2008	-	Jan 2013:	Helen Pillar (with Helen Johnson)
Oct 2007	-	Dec 2010:	James Maddison (with Peter Read)
Oct 2006	-	Nov 2011:	Amrita Shravat
Oct 2006	-	Sep 2010:	Sarka Tukova
Oct 2005	-	Sep 2009:	Lesley Allison (with Helen Johnson)
Oct 2004	-	Aug 2008:	Kuniko Yamazaki (with Myles Allen)
Oct 2003	-	Sep 2007:	James Percival (with Nancy Nichols)
Oct 2001	-	Oct 2004:	David Munday
Oct 2000	-	Nov 2003:	Stuart Moore
Jan 1999	-	Dec 2001:	Helen Johnson
Jan 1999	-	Jan 2002:	Jeff Polton
Oct 1996	-	Sep 1999:	Susan Adcock
Oct 1995	-	Jun 1998:	James Stephens
Oct 1994	-	Dec 1997:	Malcolm Roberts

Post-docs

Mar 2024	-	Oct 2024:	Jan Chylik
Apr 2021	-	Mar 2023:	Ryan Patmore
Jan 2021	-	Jan 2024:	Rita Markina
Oct 2017	-	May 2019:	Julian Mak
Apr 2016	-	May 2019:	Yavor Kostov
Oct 2010	-	Jun 2013:	James Maddison
Mar 2009	-	Nov 2010:	Stuart Daines
Feb 2009	-	Jan 2012:	Xiaoming Zhai
Jun 2007	-	May 2008:	Rena Czeschel
Oct 2006	-	Apr 2011:	Jemma Shipton
Oct 2006	-	Sep 2009:	Lucy Bricheno
Sep 2005	-	May 2008:	Lars Czeschel
Oct 2004	-	Dec 2014:	David Munday
Jun 2003	-	Dec 2003:	Manoj Joshi
Jun 2001	-	Dec 2002:	Maarten Ambaum
Oct 1999	-	Sep 2002:	Susan Adcock
Jul 1998	-	Dec 1998:	James Stephens
Jan 1995	-	Apr 2000:	Claire Tansley

Research fellows hosted

Oct 2017	-	Mar 2018:	Ali Mashayek (*NERC Independent Research Fellow*)
Mar 2009	-	Sep 2011:	Laure Zanna (*James Martin Fellow*)
Feb 2009	-	Apr 2010:	Adam Candy (*James Martin Fellow*)
Apr 2005	-	Mar 2007:	Helen Johnson (*Royal Society University Research Fellow*)

Summer students, visiting students

Daniel Shipley, Talia Tamarin, Catherine Jones, Russell Hay, Bendix Vogel, Helen Pillar, Ronan Paugam, Marlos Goes, Adam Candy, Caroline Bain, Gabriella Villani, Han-Seul Lee, Mads Poulsen, Jonas Blüthgen

Sabbatical visitors

Carl Wunsch, Sarah Gille, Stephanie Waterman, Andy Hogg, Donata Giglio, Bruno Deremble, Brandon Bethel

Supervision award

Jun 2026: *Outstanding Supervisor Award*, nominated by ILESLA/BBSRC DTP/NERC DTP students "to recognise the guidance, encouragement and commitment that supervisors and mentors bring to their students' DPhil journeys". Citation: *"I am nominating David because he is academically supportive, generous with his time, and encourages creative, independent research. He patiently explains difficult concepts, shares new ideas, checks in regularly on progress and wellbeing, gives constructive feedback, and actively advocates for students across the department and wider university."*

Refereed publications

ResearcherID B-6767-2009; ORCID 0000-0002-5199-6579; h-index 43; total citations 6002 (Web of Science)

130. Kouhen, S., B. Storer, D. Marshall, H. Alluie, and H. Christensen, 2026: Local mesoscale kinetic energy flux in the atmosphere. *J. Atmos. Sci.*, submitted.
129. Eaves, R., J. R. Maddison, D. P. Marshall, and S. Waterman, 2026: GM+PV: A new mesoscale ocean eddy parameterization tested in an idealized Arctic Ocean model. *J. Adv. Model. Earth Systems*, submitted.
128. Ni, Q., X. Zhai, C. Wang, D. Chen, and D. P. Marshall, 2026: Doubling of mesoscale eddy inverse energy cascade in the surface ocean over the past three decades. *Nature Comm.,* submitted.
127. Aluie, H., R. Barkan, S. M. Griffies, D. P. Marshall, and B. Storer, 2027: Ocean energy pathways: a multi-scale perspective. *Ann. Rev. Fluid Mech.*, in press.
126. Lee, H. S., J. R. Maddison, J. Mak, D. P. Marshall, and Y. Wang, 2025: Negative sensitivity of Southern Ocean circumpolar transport to increased wind stress controlled by residual overturning. *Tellus A*, 77, 199-220.
125. Roquet, F.., M. J. Bell, A, M. de Boer, D. Ferreira, C. S. Jones, J. H. LaCasce, C. de Lavergne, D. P. Marshall, D. R. Munday, J. Nycander, and M. Ödalen, 2025: Controls of the global overturning circulation of the ocean. *npj Clim. Atmos. Sci.*, 8, 304.
124. Eaves, R. E., J. R. Maddison, D. P. Marshall, and S. Waterman, 2025: An energy and enstrophy constrained parameterization of barotropic eddy potential vorticity fluxes. *J. Phys. Oceanogr.*, 55, doi:10.1175/JPO-D-24-0027.1.
123. Maddison, J. R. , D. P. Marshall, J. Mak, and K. Maurer-Song, 2025: A two-dimensional model for eddy saturation and frictional control in the Southern Ocean. *J. Adv. Model. Earth Systems*, 17, 51, e2024GL110804.
122. Qian, C., P. L. Read, and D. P. Marshall, 2025: Energetic Constraints on Baroclinic Eddy Heat Transport with a Beta Effect in the Laboratory. *Geophys. Res. Lett.*, 52, e2024GL112196.
121. Kouhen, S., B. A. Storer, H. Alluie, D. P. Marshall, and H. M. Christensen, 2024: Convective and orographic origins of the mesoscale kinetic energy spectrum. *Geophys. Res. Lett.*, 51, e2024GL110804.
120. Markina, M., H. L. Johnson, and D. P. Marshall, 2024: Response of subpolar North Atlantic meridional overturning circulation to variability in surface winds on different timescales. *J. Phys. Oceanogr.*, doi:10.1175/JPO-D-23-0236.1.
119. Patmore, R. D., D. Ferreira, D. P. Marshall, M. D. du Plessis, J. A. Brearley, and S. Swart, 2024: Evaluating glider sampling strategies of submesoscale dynamics. *J. Atmos. Ocean Tech.*, doi:10.1175/JTECH-D-23-0055.1.
118. Kostov, Y., M.-J., Messias, H.Mercier, D. P. Marshall, H. L. Johnson, 2024: Surface factors controlling the volume of accumulated Labrador Sea Water. *Ocean Sci.,* 20, 521–547.
117. Goldsworth, F. W., H. L. Johnson, D. P. Marshall, I. A. Le Bras, 2024: Destratifying and restratifying instabilities during down-front wind events: a case study in the Irminger Sea. *J. Geophys. Res. Oceans*, 129, e2023JC020365.
116. Styles, A. F., M. J. Bell, and D. P. Marshall, 2024: Spatial and temporal patterns of Southern Ocean ventilation. *Geophys. Res. Lett.*, 51, e2023GL106716.
115. Mak, J., J. R. Maddison, D. P. Marshall, X. Ruan, Y. Wang, and L. Yeow, 2023: Scale-awareness in an eddy energy constrained mesoscale eddy parameterization. *J. Adv. Model. Earth Systems*, 15, e2023MS003886.
114. Styles, A. F., M. J. Bell, and D. P. Marshall, 2023: The sensitivity of an idealized Weddell Gyre to horizontal resolution. *J. Geophys. Res. Oceans*, 128, e2023JC019711.
113. Ni, Q., X. Zhai, J. H. LaCasce, D. Chen, and D. P. Marshall, 2023: Full-depth eddy kinetic energy in the global ocean estimated from altimeter and Argo observations. *Geophys. Res. Lett.*, 50, e2023GL103114.
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A. Narayanan, A. C. Naveira Garabato, S.-A. Nicholson, A. Novellino, M. Ödalen, S. Østerhus, W. Park, R. D. Patmore, E. Piedagnel, F. Roquet, H. S. Rosenthal, T. Roy, R. Saurabh, Y. Silvy, T. Spira, N. Steiger, A. F. Styles, S. Swart, L. Vogt, B. Ward, and S. Zhou, 2023: Southern Ocean Carbon and Heat Impact on Climate. *Phil. Tran. R. Soc. A*, 381, 20220056.

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5. Marshall, D., 1996: Topographic steering of large-scale ocean currents. *Topography effects in ocean circulation*, Toulon, France. M. Crepon, Ed..
4. Marshall, D., 1995: Subduction of tracers in the Southern Ocean. *Sigma*, 15, 8-9.
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Teaching

Lecture courses

Nov 2022	-	present:	*Numerical Methods* Graduate lectures on Numerical Methods in Climate and Earth Science
Oct 2022	-	Jun 2025:	*Grand Challenge Seminars* Coordination of graduate-organised panel discussions
Oct 2022	-	Nov 2024:	*The Earth System: Physical Climate* Coordination and delivery of 2 days intensive training on climate physics
Jan 2020	-	Jul 2026:	B7/*S7 Classical Mechanics* Advanced lectures on Lagrangian and Hamiltonian mechanics
Jan 2020:			*C5 Atmospheric Physics* Lectures on geophysical fluid dynamics
May 2018 :			*C5 Atmospheric Physics* Lectures on observing and modelling weather and climate
Jan 2015	-	present:	*Large-Scale Ocean Circulation* Graduate Lectures on Physical Oceanography
Oct 2015	-	Mar 2017:	*Proposal writing, surface energy exchange* Ad-hoc teaching for the Doctoral Training Programme
Oct 2010	-	Jun 2015:	*B1 Flows, fluctuations and complexity* Lectures on fluid dynamics and dynamical systems, tutorials/collections for *St Peters, Mansfield, Balliol, Merton Colleges*
Oct 2007	-	May 2012:	*C5 Atmospheric Physics* Lectures on geophysical fluid dynamics, ocean circulation and climate
Oct 2004	-	Dec 2006:	*MT37F Oceanography* Undergraduate lectures
Oct 2003	-	Mar 2007:	*MT24A Atmosphere and Ocean Dynamics* Undergraduate lectures, laboratory demonstrations, problems classes
Oct 2003	-	Dec 2003:	*MT721 Atmospheric Analogues* *U*ndergraduate fluids laboratory
Oct 2000	-	Oct 2004:	*MSc Tutorials* Small-group tuition/problem solving
Apr 1998	-	Jul 2002:	*MT301 Fluid Motion* Undergraduate lectures, laboratory demonstrations, problems classes
Oct 1996	-	Apr 1997:	*MSc Tutorials* Small-group tuition, problem solving
Jan 1996	-	Dec 2001:	*MTB17 Atmospheric Analogues* Postgraduate fluids laboratory
Apr 1995	-	Jul 2002:	*MT623 Ocean Science* Undergraduate lectures
Apr 1995	-	Jun 1995:	*MT301 Fluid Motion* Undergraduate laboratory demonstrations
Jan 1995	-	Mar 1999:	*MT831 Ocean Dynamics* Undergraduate lectures
Jan 1995	-	Mar 1997:	*MTB21 Oceanography* Postgraduate lectures

Other teaching

Sep 2025:	Lecturer, *NCAS Climate Summer School*, Cambridge
May 2025:	Lecturer, *SO-CHIC/OCEAN-ICE Southern Ocean Summer School*, Cargese, Corsica
Sep 2023:	Lecturer, *NCAS Climate Summer School*, Cambridge
Jul 2023:	Co-organiser and lecturer, *Physics of the Ocean* Summer School, Badhonnef
Sep 2019:	Lecturer, *NCAS Climate Summer School*, Cambridge
Mar 2018:	Co-organiser and lecturer, *Oceans in Weather and Climate* School, Exeter
Sep 2017:	Guest lecturer, *NCAS Climate Summer School*, Cambridge
Jul 2017:	Co-organiser and lecturer, *Physics of the Ocean* Summer School, Badhonnef
Jun 2016:	Invited Lecturer, *European Earth System and Climate Modelling School*, Helsinki
Sep 2015:	Guest lecturer, *NCAS Climate Summer School*, Cambridge
Mar 2015:	Co-organiser, NERC/Met Office School, *Oceans in Weather and Climate*, Exeter
Jul 2014:	Invited lecturer, *Physics of the Ocean* Summer School, Badhonnef
Feb 2013:	Invited Lecturer, *Waves and Instabilities in Geophysical and Astrophysical Flows Winter School*, Les Houches

Jun 2012:	Invited Lecturer, *European Earth System and Climate Modelling School*, Kos
Sep 2011:	Guest lecturer, *NCAS Climate Summer School*, Cambridge
Sep 2009:	Guest lecturer, *NCAS Climate Summer School*, Cambridge
Sep 2007:	Principal lecturer, *Netherlands CCR Summer School,* Les Diablerets
Sep 2007:	Guest lecturer, *UJCC-NCAS Climate Modelling Summer School*, Cambridge
Aug 2006:	Invited faculty and lecturer, *Summer School in Modern Mathematical Methods in Physical Oceanography*, Breckenridge, Colorado
Jul 2004:	Invited lecturer, *Oceanography, Lakes and Rivers* Summer School, Lisbon
Sep 2003:	Principal lecturer, *Netherlands CCR Summer School,* Les Diablerets
Sep 2001 - Sep 2006:	Core Lecturer, *Geophysical and Environmental Fluid Dynamics* Summer School, University of Cambridge
Jul 2001:	Visiting Fellow, *Summer School in Geophysical Fluid Dynamics*, Woods Hole
Sep 2000:	Invited lecturer, *NERC Summer School, Geophysical and Environmental Fluid Dynamics*, Cambridge
Jul 2000:	Invited lecture, *CARTUM Summer School*, Bidston
Various dates:	Supervisor, 23 MPhys/BSc dissertations, 17 MSc dissertations/team projects

Evidence of teaching quality

Jul 2024:	*Mathematical, Physical and Life Sciences Divisional Teaching Award*, University of Oxford
Dec 2014:	*Best Lecturers of the Bad Honnef Physics Schools 2014* (1 of 3 student choices)
Jun 2014:	Shortlisted, OUSU student-led teaching award for *Best Lecturer in Mathematical, Physical and Life Sciences Division*, University of Oxford
Feb 2003:	Nominated, *Award for Teaching Excellence,* University of Reading

On the most recent student evaluation forms (March 2026):

- 100% agreed and 89% strongly agreed that the lectures were engaging
- 100% agreed and 89% strongly agreed that the lectures were well structured
- 100% were satisfied with the course overall

Examples of student feedback:

- *Genuinely brilliant lecturer, explained everything really well and made the course very interesting.*
- *Amazing lecturing, really interesting content.*
- *Genuinely the best lecturer I've had! Great pace and very clear explanations. I love the sections on history, it makes the course much easier to conceptualise and more engaging.*
- *The enthusiasm of the lecturer really helps make the material engaging! And I like the people focused structure of the course, especially in highlighting women of physics.*
- *I found the way that the course felt like a journey through classical mechanics really interesting, and the interludes about the history surrounding the subject was also very interesting. The lecturer was very engaging and explained everything very clearly.*
- *Great presentation with the backstory of the relevant concepts showing how classical mechanics evolved into quantum mechanics.*
- *I really enjoyed these lectures! They were really interesting and easy to follow. I liked how we'd learn about some of the history behind concepts, instead of just the physics. I also think the part about Schrödinger was well handled, and I really appreciated that we were actually told about what he did.*
- *Really good, very clear and made things easy to follow, great lecture notes! Best lecturer I had.*
- *I really like the historical aspects he introduces and maintains as a theme. He is very clear on what we are currently doing and the path the lecture will take/is taking. Great lectures overall.*
- *I just want to tell you that you have done a great job at teaching us Fluids, Flows and Complexity! The way you teach is very engaging, and your lecture notes supplement your lectures very well. The pedagogy is just excellent and it plays a great role in keeping us interested in the subject (which I, honestly, was not very keen in studying initially as I am more interested in modern physics). On behalf of all the third years - THANK YOU VERY MUCH!*
- *The course was very interesting and surprisingly difficult!*
- *Thank you for … being a kind and caring personal tutor and a top class lecturer – your enthusiasm is contagious!*
- *Thank you for being a fantastic tutor and lecturer!*
- *Thanks ... for your brilliant teaching, through which I discovered my interest in oceanography.*
- *Brilliant teaching and approachable. Overall, the best module so far! Thank you!*
- *Excellent lecture technique keeps everyone interested, and easy to follow, even the hard maths.*
- *Made the subject interesting and engaging, the problem classes were especially good for a challenge.*
- *Thank you for … being a kind and caring personal tutor and a top class lecturer – your enthusiasm is contagious!*

- *The lecturer, lectures, and demonstrations were brilliant. The Fluid Motion lectures have been my best lectures ever.*
- *Always tries to connect mathematics and theory with the real world - this helps understanding.*
- *Supervision was excellent - getting us to think through what was going on.*
- *I enjoyed all of it - thank you!!*
- *Thanks so much for running the numerical methods course, it was absolutely a highlight for me!*
- *David is an amazing lecturer, very approachable and happy to answer questions.*
- *David is the best, I'm so grateful to have him as both my course lead and teacher! I can't explain how under-confident I felt in my coding ability coming into this degree. My previous uni didn't teach coding modules well and I always felt so out of my depth. The way David taught this module was perfect for me. Great amount of maths, physical application, and links to how to code it up in real life. My knowledge for numerical modelling has expanded so much thanks to David, and I feel so much more confident now, so thank you :)*
- *Thank you David and Martin for the summer school, it was the most amazing experience I've ever had in science!!*
- *I probably should say something deliberately cheesy, like "it was an amazing experience, that brought together ocean science professionals and enthusiasts from all over the world" (which is all true), but for real, my expectations were absolutely beat. Beat by the level of organisation, professionalism and diversity of content that was meticulously put together for us. On a personal level, I came as a highly insecure masters student, but after all somehow got validation as a scientist, speaker and politics enthusiast, and this school made me rethink my priorities for sure! In the end it's all about people, and I'm thankful to everyone who came and made the School such a piece of joy to live through.*

Examples of contributions to teaching and learning development and leadership:

- Redesign of the advanced *Classical Mechanics* course to both tell the story of how Physics developed from Newtonian mechanics to quantum mechanics, and to explore some of the contributions and lives of the individuals that took us along that journey. Awarded a *2024 MPLS Teaching Award* specifically for highlighting the barriers faced by the greatest female mathematical Physicist, Emmy Noether, and the contributions of a few colleagues to promote and facilitate her career in the face of strident opposition.
- Development of a new Physics course (compulsory for MPhys students) on Fluid Dynamics and Dynamical Systems theory, with problem sets and detailed solutions/notes for tutors. The Head of Physics at Imperial College requested details of this course with a view to proposing something similar there.
- Complete redesign of the Reading Meteorology fluids dynamics teaching at Part 2 level as part of the revamping of the BSc Meteorology degrees in 2002. Implemented a single, extended module across two terms, consisting of an equal split each week between *lectures* with printed notes and numerous computer animations/examples and movies of real fluid flows, *fluid laboratory demonstrations* including rotating and stratified flows, *hands-on problem solving*; also involving a range of assessments including an open-book multiple-choice test to assess a wide range of different skills across the module and encourage attendance at problem classes. The module consistently ranked as one of the most popular across the entire degree in student feedback.
- Managed the revitalisation of the Reading Meteorology Fluid Dynamics Laboratory, including introducing a wide range of new experiments to bring the laboratory up-to-date with current research. This facility offers students vital hands-on experience of real fluid flows, helping them to relate the abstract concepts they learn about in lectures to the real world. The laboratory includes a number of rotating turntables and particle-tracking computer software.
- Contributed to 30 summer schools, sometimes mentoring student participants following the schools.

EDI activities

- Increased the number of applicants to the *NERC Research Experience Placement* summer projects from 5 (in 2023, the year before I took over leadership of the DTP) to 109 in 2024. Just over half of these applicants flagged one or more of the criteria associated with under-represented groups. This increase was achieved through a combination of targeted advertising, and offering fully-funded accommodation to remove an obvious barrier to access. Two of the 8 students in the 2024 cohort are now enrolled within the NERC DTP and UKRI Intelligent Earth CDT at Oxford. In 2024, we made these REPs available exclusively to those from under-represented groups and were again very successful. From 2025, we are embedding our summer placements within the wider University of Oxford UNIQ+ programme.
- Launched a residential *Applications Workshop* for candidates from under-represented groups in 2023 and repeated in 2024.. This was an all-expenses paid three day residential workshop for students from under-represented groups to spend some time in Oxford, find out more about the application process, and meet academics and students. Sessions included introductions to what DTPs and CDTs actually are, what assessors are looking for in an application, "imposter syndrome" a practical interview workshop, as well as information about paid summer internship schemes and how to build a CV. The response has been overwhelmingly positive, with several students describing the workshop as "life changing". One of

the attendees in 2023 is now enrolled on the Oxford DTP, another on a different Oxford DPhil programme, and others have secured PhD places elsewhere (such as ANU). Large elements of these workshops have now been rolled out across the university through the UNIQ+PASS programme.
- Secured funding for a DTP student-led climate musical, *Chrissie and the Skiddle Witch*, on a national tour (February-April 2025) and associated workshops. The tour targeted state-school pupils who don't normally access science outreach events or theatre by visiting a range of venues such as schools, libraries, community centres, rural village halls, and local theatres. My role in this project was purely as facilitator to identify and secure funding for the project.
- Proactive member of my department's *Race Equality Action Plan Working Group*
- Led my department's first successful Athena Swan award (Bronze, 2021), introducing a number of new initiatives, including sponsored nursery places, rescheduling of meetings to core hours, workload monitoring.

Professional affiliations
Elected member, Academia Europaea
Fellow, Institute of Physics
Fellow, Challenger Society for Marine Science
Fellow, Royal Meteorological Society
Life Member, American Geophysical Union
Former Member, American Meteorological Society
Former Member, European Geophysical Union

Invited conference/keynote talks

Jul 2022:	Invited participant, Workshop on *Southern Ocean*, Bornö, Sweden
Jun 2022:	Invited speaker, Gordon Research Conference on Ocean Mixing, Massachusetts
Oct 2019:	Zhoushan Conference on Ocean Eddies and Fronts*,* Zhejiang Ocean University
May 2019:	Invited speaker, Peking University*,* Beijing
Oct 2018:	Invited participant, Workshop on *Loss of Balance,* Hamburg
Oct 2018:	Invited speaker, Workshop on *Western Boundary Current Dynamics,* Qingdao
Jul 2018:	Invited participant, Workshop on *Eddy Parameterisation*, Bornö, Sweden
Jan 2018:	Invited participant, Programme on *Mathematical Aspects of Physical Oceanography*, Erwin Schrödinger International Institute for Mathematics and Physics, Vienna
Sep 2017:	Invited speaker, *Southern Ocean Workshop*, Stockholm
May 2017:	Invited speaker, *Energy Transfers in Atmosphere and Ocean Workshop*, Hamburg
Feb 2016:	Invited speaker, *American Geophysical Union Ocean Sciences*, New Orleans
Nov 2015:	Invited speaker, Workshop on *Stochastic Modelling in Geophysical Fluid Dynamics, Data Assimilation, and Non-Equilibrium Phenomena*, London
Sep 2015:	Invited speaker, *Thermohaline Circulation Workshop*, Stockholm
Apr 2015:	Invited speaker, *Energy Transfers in Atmosphere and Ocean Workshop*, Hamburg
Mar 2015:	Invited speaker, *Theoretical Advances in Planetary Flows and Climate Dynamics*, Les Houches
Feb 2015:	Invited speaker, *Southern Ocean Dynamics and Biogeochemistry,* Caltech
Dec 2014:	Invited speaker (2 sessions), *AGU Fall Meeting*, San Francisco
Jul 2014:	Invited speaker, Workshop on *Watermass Transformation*, Bornö, Sweden
Jul 2013:	Invited Speaker, *US AMOC/UK RAPID International Science Meeting*, Baltimore
May 2011:	Invited participant, *Royal Society Workshop, Beyond the Conveyor*, Kavli Institute
Sep 2010:	*Victor Starr Memorial Lecture*, Massachusetts Institute of Technology
Apr 2009:	Invited speaker, *CLIVAR Workshop on Parameterization of Eddies in Ocean Models*, Exeter
Feb 2009:	Invited speaker, DFG Workshop on *Role of the Southern Ocean in the Global Carbon Cycle*, Kiel
Sep 2008:	Invited speaker, *Can we forecast the ocean circulation?* Challenger Society workshop, Bangor
Apr 2008:	Invited speaker, *Yale University Climate Forum*, Yale University
Apr 2008:	Invited speaker, *British Applied Mathematics Symposium*, Manchester
Sep 2007:	Invited speaker, *CLIVAR workshop on Ocean Model Development,* Bergen, Norway
Sep 2004:	Keynote speaker, *Challenger Society Marine Sciences Conference,* Liverpool
May 2004:	Invited speaker, *American Geophysical Union Spring Meeting,* Montreal
Apr 2004:	Invited speaker, *European Geophysical Union General Assembly,* Nice
Jun 2003:	Invited speaker, *International Union of Geodesy and Geophysics General Assembly* , Saporro
Jul 2002:	Invited speaker, *4th Annual Meeting of the CLIVAR Atlantic Implementation Panel,* Bermuda
Mar 2001:	Invited speaker, *European Geophysical Society General Assembly,* Nice
Jan 2001:	Invited speaker, *'Aha Huliko'a Workshop: From Stirring to Mixing in a Stratified Ocean,* Honolulu
Aug 1999:	Invited speaker, *World Ocean Circulation Experiment Atlantic Workshop,* Kiel
Apr 1999:	Invited speaker, *Royal Society Discussion Meeting, Ocean Bottom Pressure Variability,* London
Sep 1998:	Invited speaker, *Programme Océan Multidisciplinaire Méso Echelle workshop*, Paris
May 1998:	Invited speaker, EUROCLIVAR conference, *North Atlantic Climate Variability*, Florence

Sep 1995: Invited speaker, Workshop on *Topography Effects in Ocean Circulation*, Toulon

International seminars

Erwin Schrödinger International Institute, University of Vienna; California Institute of Technology; Courant Institute, New York University; Geophysical Fluid Dynamics Laboratory, Princeton; Harvard University; IFREMER, Brest; Jet Propulsion Laboratory, Pasadena; KMNI, Utrecht; Lamont-Doherty Earth Observatory, Colombia University; Massachussetts Institute of Technology; Nanjing University; Nanjing University of Information, Science and Technology; Ocean University, Qingdao; Pabna University of Science and Technology, Bangladesh; Peking University; University of California, Los Angeles; University of Georgetown, Guyana; University of Hamburg; Utrecht University; University of Stockholm; Federal University of Santa Catarina, Florianapolis, Brazil; Woods Hole Oceanographic Institution