

Curriculum Vitae

Jennifer Susan COLLIER
Professor of Marine Geophysics

Department of Earth Science & Engineering,
Imperial College London,
RSM Building,
Prince Consort Road,
London SW7 2BP, UK

Email: jenny.collier@imperial.ac.uk
Tel: +44- 20 7594 6443
www.imperial.ac.uk/people/jenny.collier
twitter: @geophysicsjenny

Profile

I am a marine geophysicist focused on understanding the processes that form and deform oceanic lithosphere. A central theme throughout my career has been the relationship between tectonics and magmatism. My early work involved mapping the magmatic plumbing beneath mid-ocean ridges and the response of the oceanic lithosphere to loading by ocean islands. More recently I have studied the pattern of magmatism along the continental margins of the Indian and Atlantic Oceans in order to determine the thermal conditions during breakup. Currently I am investigating the link between volatiles in the incoming plate to arc magmatism at the Antilles subduction zone. A second theme of my research is shallow-water processes. I conducted the first ever multibeam bathymetry survey of the UK continental shelf which led to the discovery that catastrophic megafloods separated Britain from Europe. I am also interested in the application of high-resolution side-scan sonar for biological habitat mapping.

Education

1990 Ph.D. Marine geophysics, Cambridge University (NERC studentship)
1986 M.Sc. Exploration geophysics, Durham University (Britoil studentship)
1983 B.Sc. Geology, Bristol University

Positions

2018-date Professor, Imperial College London
2010-2018 Reader, Imperial College London
2002-2010 Senior Lecturer, Imperial College London
1998-2002 Elf Lecturer, Imperial College London
1996-1998 NERC Research Fellow, Cambridge University
1995 Teaching Fellow, Leeds University
1991-1994 University Research Scientist, Oxford University
1983-1985 Systems Analyst, IBM UK Ltd.

Awards & Appointments

2016 Awarded Harold Jeffreys Lecturer by the Royal Astronomical Society
2015 Appointed to NERC's Joint Capital Advisory Group (JCAG)
2015 Appointed to NERC's Science Board
2015 Elected President of the British Geophysical Association
2014 Elected Fellow of the Royal Astronomical Society
2014 Appointed visiting Professor, IPG, Paris
1996 Awarded Natural Environment Research Council (NERC) Fellowship

Research Expedition Leadership

NERC-funded expeditions (Chief Scientist)

- 2017 Volatile cycling at the Antilles subduction zone. *RRS James Cook* cruise JC149.
https://www.bodc.ac.uk/data/information_and_inventories/cruise_inventory/report/jc149.pdf
- 2016 Volatile cycling at the Antilles subduction zone. *RRS James Cook* cruise JC133.
https://www.bodc.ac.uk/data/information_and_inventories/cruise_inventory/report/jc133.pdf
- 2003 Structure of the conjugate Indian-Seychelles margins. *RRS Charles Darwin* cruise CD144.
https://www.bodc.ac.uk/data/information_and_inventories/cruise_inventory/report/5837/
- 2002 Structure of the conjugate Indian-Seychelles margins. *RRS Charles Darwin* cruise CD134B.
https://www.bodc.ac.uk/data/information_and_inventories/cruise_inventory/report/5862/

Other-funders

- 2019 Irish Marine Institute – R/V Celtic Explorer.
- 2003 English Heritage/ALSF - Multibeam survey of the submerged Palaeo-Arun: Reconstruction of Prehistoric landscapes and evaluation of archaeological resource potential.
- 2001 RGS/Shoals of Capricorn - Timelapse imaging of bleached coral reef recovery, Seychelles.
- 2000 SAMS - Seabed imaging for detecting environmental change due to artificial reefs, Loch Linhe, Scotland.
- 1998 RGS/Shoals of Capricorn - Sidescan sonar imaging of bleached coral reefs, Seychelles.

Research Interests

Formation and evolution of passive margins, ocean basins, ocean islands and subduction zones.

The Quaternary history of continental shelves.

Environmental geophysics, habitat mapping, marine processes and physical properties of the seabed.

Specialism

Marine geology and geophysics: passive source seismology; controlled source reflection and refraction seismology; high-frequency sidescan sonar; multibeam bathymetry; seismic interpretation; joint inversion; full waveform inversion.

Current research activities

- Determining volatile circulation at the Antilles subduction zone by passive and active source seismology. This is a multidisciplinary NERC Large Grant project awarded in 2014. I led the field programme that comprised two cruises on the *RRS James Cook* in 2016/17. During the experiment we completed 160 ocean-bottom seismometer deployments with an overall data success rate of 96%. We will relate the volatile distribution in the incoming plate to arc volcanism.
- Understanding the thermal structure during continental break-up in the South Atlantic through the analysis of commercial seismic data and numerical modelling. We are using ultra-wide aperture multichannel seismic data to quantify along-strike magmatism.
- Full waveform inversion of time-lapse data from the East Pacific Rise. This project is in collaboration with scientists from IPG, Paris and Lamont. We will invert data from a new 3D seismic survey from the ridge crest to determine magma chamber properties over time and relate them to the known pattern of volcanism.
- Island Britain – analysis of the megaflood in the English Channel. I am part of a team of scientists from 4 nations studying geomorphic features on the floor of the English Channel by high-resolution seabed and sub-surface imagery.

Research Funding (since 2000)**Awards**

- 2018 Backscatter and Biodiversity on Shelf Sea Habitats, Co-I, **Irish Marine Institute**, €375k
- 2014 Volatile recycling at the Lesser Antilles arc: Processes and Consequences, Co-I, **NERC Large Grant**, £535k + £362k OBS equipment loan). In addition I led the two marine cruises – JC133 and JC149 (79 days ship time @50k/day = £4,300k)
- 2013 Magmatism and break-up in the South Atlantic, Co-I, **ION-GX** (Commercial seismic company), £15k
- 2009 Examining the relationship between acoustic backscatter and physical properties of the seabed from the South Coast REC, PI, **Department for Environment, Food and Rural Affairs (Defra)**, £156k
- 2003 Reconstructing Pleistocene ice limits in the central North Sea: Implications for climate change, Co-I, **British Geological Survey (NERC)**, £24k
- 2002 Submerged Palaeo-Arun and Solent Rivers: Reconstruction of Prehistoric landscapes and evaluation of archaeological resource potential, Co-I, **Marine Aggregate Level Sustainability Fund**, £430k
- 2002 Ocean bottom seismic and electromagnetic receivers for multidisciplinary studies in solid earth science, Co-I, **NERC/HEFCE (JREI)**, £170k
- 2002 Interpolated sparsely sampled seismic acquisition, Co-I, **Shell/DTI**, £383k
- 2001 Submerged fluvial valley evolution, PI, **Royal Society**, £10k
- 2001 Seabed imaging sonars for earth, environment, geohazards, coastal engineering and archaeological research, Co-I, **NERC/HEFCE (JREI)**, £524k
- 2001 Evaluating the influence of relatively rapid extension on continental margin formation: geophysical observations of the conjugate Seychelles-India margins, PI, **NERC Standard Grant**, £172k + £50k Tied PhD studentship + £250k OBS equipment loan. In addition I led the two marine cruises – CD134b and CD144 (44 days ship time @50k/day = £2,200k)

Research support awards

Access to the following research facilities was granted by peer-reviewed proposals. Money either paid direct from funder to supplier or funder granted free-access at point of use.

- 2017 NERC – 63-days ship time *RRS James Cook* JC146. @50k/day = £3,150k
- 2016 NERC – 16-days ship time *RRS James Cook* cruise JC133. @50k/day = £800k
- 2014 ION-GX, Long-offset seismic data, estimated cost £5,000k
- 2014 Landmark - University Grant - Software licenses for seismic processing, interpretation and visualisation software. Commercial value \$500k
- 2005 NERC – 5 days of time on ICPMS geochemical analysis facility - estimated cost - £5k
- 2004 Landmark - University Grant - Software licenses for seismic processing, interpretation and visualisation software. Commercial value \$500k
- 2004 NERC – 2-days ship time *RRS Charles Darwin* cruise CD156. @50k/day = £100k
- 2003 NERC – 32-days ship time *RRS Charles Darwin* cruise CD144. @50k/day = £1,600k
- 2003 EU – Infrastructure and capacity award – 32 x Geomar OBS/H for 2 months, estimated cost £600k
- 2001 NERC- 10-days ship time *RRS Charles Darwin* cruise CD134B. @50k/day = £500k
- 2000 Royal Geographical Society – *Shoals of Capricorn* expedition, fieldwork costs for 3 week sidescan sonar survey in Seychelles. @5k/day = £105k
- 2000 Dunstaffnage Marine Laboratory (NERC centre, now SAMS) – fieldwork costs for 1 week sidescan sonar survey in Scotland. @5k/day = £35k
- 1998 Royal Geographical Society – *Shoals of Capricorn* expedition, fieldwork costs for 6 week sidescan sonar survey in Seychelles. @5k/day = £105k

Scientific Service**Community leadership (Committee member unless otherwise stated)**

- 2015-date NERC Science Board

2015-2019	NERC Joint Capital Advisory Group (JCAG)
2015-2018	British Geophysical Association – President
2013-2016	Royal Astronomical Society – Solid Earth Geophysics Forum
2012-15	NERC - Peer Review College
2005-08	NERC - Marine User’s Group
2004-07	NERC - Peer Review College
1999-04	Geological Society, London - Marine Studies Group
1998-00	Royal Geographical Society, London - Shoals of Capricorn

International Research Grant Panels:

2016	Canada Foundation for Innovation (CFI) – Marine science proposal evaluation
2013	USA National Science Foundation – Marine science proposal evaluation, Washington
2010-13	Norwegian Research Council – Earth science proposal evaluation, Oslo
2008	German Research Council – Marine facilities review, Marum, Bremen

Journal Editor:

2018-date	Geophysical Journal International
2014-date	Royal Society – Open Science

Conference convening:

2017	Co-convenor “TSG-VMSG-BGA Joint Assembly”. A 2-day national meeting, Liverpool.
2016	Co-convenor “Seismix 2016”. A 1 week international meeting, Aviemore, Scotland
2016	Co-convenor “New Advances in Geophysics”. A 2-day international meeting, London

PhD examining:

I have been the external examiner of twelve PhD theses:

- Institut de Physique du Globe, Paris, France (Arnulf, 2011; Wang, 2014; Qin, 2015)
- University of Ghent, Belgium (Garcia-Moreno, 2017)
- University of Southampton (Barker, 2004; Pinson, 2010; Moukos, 2013, Haughton 2019)
- UCL (Harrison, 2007)
- Royal Holloway (Keir, 2007; Perez-Diaz, 2016, Ros, 2018)
- University of Cambridge (Jones, 2003)

Undergraduate degree programme External examining:

2019	Reviewer of new degree programme, University of Southampton
2018-date	Leicester University
2006-09	Royal Holloway, University of London

University Administration

College

2016-date	NERC Strategy and Management Group
2015-date	Engineering Faculty Horizon Scanning Forum
2013-16	NERC SSCP DTP Management Committee
2002	Graduate Training Committee

Department

2016-date	NERC Committee (Demand Management and Fellowships)
2013-date	Research Committee
2012	Lectureship Appointment Committee
2010-13	MSc Petroleum Geophysics - Deputy Course Director
2002-06	Staff-student Committee
2002-06	Final year undergraduate Co-ordinator
2001-05	Graduate School Committee
2001-02	Steering Group Committee

Invited Seminars (last 6 years only)

- 2018 Cambridge University (Dept. Earth Sciences) “Island Britain”
- 2017 AGU, New Orleans: Keynote in Subduction session.
- 2016 GFZ,Potsdam: “Seaward-dipping reflector formation: New insights from long-offset seismic reflection data from the South Atlantic”
- 2016 Cambridge University (QSG): “Streamlined islands and the English Channel megaflood hypothesis”
- 2014 IPG Paris: “Continental break-up in the Indian Ocean: beyond the "hotspot-volcanic margin model”.
- 2014 IPG Paris: “Volatile recycling in the Lesser Antilles arc Processes and Consequences”.
- 2012 AGU, San Francisco: Keynote in Rifted margin session.
- 2012 ETH Zurich: “Beyond hotspots: the importance of rift history for volcanic margin generation”.
- 2012 University of Bristol: “Beyond hotspots: the importance of rift history for volcanic margin generation”.
- 2012 University of Oxford: “Island Britain: acoustic imaging of catastrophic flood terrains in the English Channel”.

Memberships of Professional Organisations

European Geophysical Society; American Geophysical Union, Fellow of the Royal Astronomical Society

PhD Student Supervision

Stuart Humber

Project: High-resolution side-scan imagery for characterising shallow tropical marine habitats.

Funding: GeoTek UK, Ltd, Marine Conservation Trust, and Grundy Education Trust.

Dates: 1999-2004

First destination: Max Fordham LLP (engineering company)

Mohammed Al’Mazroey:

Project: Precise fluid characterisation at the Oseberg Gas/Oil Field using pre-stack and post-stack attributes.

Funding: Petroleum Development of Oman.

Dates: 1999-2003

First destination: Petroleum Development of Oman (national oil company)

Victoria Sansom:

Project: Structure of the Seychelles margin.

Funding: NERC tied studentship.

Dates: 2002-2006

First destination: GX Technology (seismic contractor)

Christine Lane (with T. Minshull):

Project: Rifted margin formation on the northwest Indian Ocean.

Funding: BP case studentship.

Dates: 2002-2006

First destination: GX Technology (seismic contractor)

James Hammond (with M. Kendall):

Project: Imaging the upper mantle beneath the Seychelles: Architecture of a microcontinent.

Funding: Departmental studentship.

Dates: 2003-2007

First destination: NERC fellow at Imperial College London, then Lecturer at Birkbeck College, University of London

Alistair Graham (with L. Lonergan):

Project: Quaternary history of the North Sea from 3D seismic data
Funding: British Geological Survey joint-studentship
Dates: 2003-2007
First destination: British Antarctic Survey (academic research), then Lecturer, Exeter University

Kerry Bushe:

Project: The Hampshire Basin.
Funding: English Heritage
Dates: 2004-2008
First destination: RPS Group PLC (seismic contractor)

Francesca Oggioni:

Project: Breaching of the Dover Strait.
Funding: Department
Dates: 2009-2013
First destination: CGG (seismic contractor)

Chandra Taposeea:

Project: Numerical modelling of the opening of the South Atlantic
Funding: Department/Self
Dates: 2012-2017
First destination: InsardSAT UK (satellite imaging)

Carl McDermott:

Project: The volcanic passive margins of the South Atlantic
Funding: Department/ION GX
Dates: 2014-date
First destination: Exxon

Robert Allen:

Project: Volatile recycling at the Lesser Antilles arc
Funding: NERC DTP
Dates: 2016-date

Zsofia Zalai:

Project: The volcanic passive margins of the South Atlantic
Funding: Presidents scholarship
Dates: 2018-date

Post-doctoral Staff

Andrew Palmer-Felgate:

Project: Submerged Palaeo-Arun.
Funding: English Heritage grant
Dates: 2003-2004.
First destination: Senior Project Manager at Verizon

Jonathan Pye:

Project: Submerged Palaeo-Arun.
Funding: English Heritage grant
Dates: 2003-2004.

First destination: Senior Geophysics at Premier Oil

John Armitage:

Project: Numerical modelling of continental breakup.

Funding: NERC grant (Seychelles-India rifting)

Dates: 2008.

First destination: Senior Research Fellow, IPG, Paris

Christopher McGonigle:

Project: Analysis of backscatter data for seabed habitat mapping.

Funding: ALSF grant

Dates: 2009-2010.

First destination: Lecturer, University of Ulster

Richard Davy:

Project: Velocity imaging of the Antilles subduction zone.

Funding: NERC grant

Dates: 2017-date.

Post-doctoral fellow mentoring

James Hammond:

Project: Seismic analysis of the East African super-plume.

Funding: NERC Fellow

Dates: 2011-2015.

First destination: Lecturer, Birkbeck College, University of London

Ross Parnell-Tuner

Project: Global analysis of crustal formation in the oceans

Funding: Imperial JRF

Dates: 2016- 17

First destination: Researcher WHOI, then Staff scientist, Scripps Oceanographic Institute, California

Adam Booth:

MSc geophysics teaching fellow

Dates: 2012-2015.

First destination: Lecturer, University of Leeds

Publications

My Google-Scholar page is here <http://scholar.google.co.uk/citations?user=6GFAdSAAAAAJ&hl=en>

Peer-reviewed

- Garcia-Moreno, D., S. Gupta, J. S. Collier, F. Oggioni, K. Vanneste, A. Trentesaux, K. Verbeeck, W. Versteeg, H. Jomard, T. Camelbeeck and M. D. Batist, 2019. "Middle–Late Pleistocene landscape evolution of the Dover Strait inferred from buried and submerged erosional landforms." **Journal of Quaternary Science** 203: DOI 209-232. 10.1016/j.quascirev.2018.11.011
- McDermott, C., L. Lonergan, J.S. Collier, P. Bellingham & K. McDermott, 2018. Characterisation of seaward-dipping reflectors along the S. American Atlantic margin and implications for continental breakup, **Tectonics** 37: DOI 3303-3327. 10.1029/2017TC004923
- Bosence, D.W.J., J.S. Collier, S. Fleckner, A. Gallois & I.M. Watkinson, 2018. Discriminating between the origins of remotely sensed circular structures; carbonate mounds, diapirs or periclinal folds? Purbeck Limestone Group, Weymouth Bay, UK, **Journal of the Geological Society**. DOI: 10.1144/jgs2017-155:
- Allen, R.W., C. Berry, T.J. Henstock, J.S. Collier, F.J.Y. Dondin, A. Rietbrock, J.L. Latchman & R.E.A. Robertson, 2018. 30 Years in the Life of an Active Submarine Volcano: A Time-Lapse Bathymetry Study of the Kick-'em-Jenny Volcano, Lesser Antilles, **Geochemistry Geophysics Geosystems**, 19, 715-731. DOI: 10.1002/2017GC007270:
- Collier, J.S., C. McDermott, G. Warner, N. Gyori, M. Schnabel, K. McDermott & B.W. Horn, 2017. New constraints on the age and style of continental breakup in the South Atlantic from magnetic anomaly data, **Earth and Planetary Science Letters**, 477, 27-40. DOI: 10.1016/j.epsl.2017.08.007:
- Armitage, J.J. & J.S. Collier, 2017. The thermal structure of volcanic passive margins, **Petroleum Geoscience**. DOI: 10.1144/petgeo2016-101:
- Gupta, S., J.S. Collier, D. Garcia-Moreno, F. Oggioni, A. Trentesaux, K. Vanneste, M. De Batist, T. Camelbeeck, G. Potter, B. Van Vliet-Lanoe, & J.C. Arthur, 2017. Two-stage opening of the Dover Strait and the origin of island Britain, **Nat Commun**, 8, 15101. DOI: 10.1038/ncomms15101:
- Westhead, R.K., D.J. McCarthy, J.S. Collier & D.J. Sanderson, 2017. Spatial variability of the Purbeck–Wight Fault Zone—a long-lived tectonic element in the southern UK, **Proceedings of the Geologists' Association**. DOI: 10.1016/j.pgeola.2017.08.005:
- Sanderson, D.J., J.K. Dix, K.R. Westhead & J.S. Collier, 2017. Bathymetric mapping of the coastal and offshore geology and structure of the Jurassic Coast, Weymouth Bay, UK, **Journal of the Geological Society**, 174, 498-508. DOI: 10.1144/jgs2016-070:
- Taposeea, C.A., J.J. Armitage & J.S. Collier, 2016. Asthenosphere and lithosphere structure controls on early onset oceanic crust production in the southern South Atlantic, **Tectonophysics**. DOI: 10.1016/j.tecto.2016.06.026:
- Schlaphorst, D., J.M. Kendall, J.S. Collier, J.P. Verdon, J. Blundy, B. Baptie, J.L. Latchman, F. Massin, & M.P. Bouin, 2016. Water, oceanic fracture zones and the lubrication of subducting plate boundaries—insights from seismicity, **Geophysical Journal International**, 204, 1405-1420. DOI: 10.1093/gji/ggv509:
- Garcia-Moreno, D., K. Verbeeck, T. Camelbeeck, M. De Batist, F. Oggioni, O.Z. Hurtado, W. Versteeg, H. Jomard, J.S. Collier, S. Gupta, A. Trentesaux, & K. Vanneste, 2015. Fault activity in the epicentral area of the 1580 Dover Strait (Pas-de-Calais) earthquake (northwestern Europe), **Geophysical Journal International**, 201, 528-542. DOI: 10.1093/gji/ggv041:
- Collier, J.S., F. Oggioni, S. Gupta, D. Garcia-Moreno, A. Trentesaux & M. De Batist, 2015. Streamlined islands and the English Channel megaflood hypothesis, **Global and Planetary Change**, 135, 190-206. DOI: 10.1016/j.gloplacha.2015.11.004:
- Hammond, J.O.S., J.M. Kendall, J.S. Collier & G. Rumpker, 2013. The extent of continental crust beneath the Seychelles, **Earth and Planetary Science Letters**, 381, 166-176. DOI: 10.1016/j.epsl.2013.08.023:

- Hammond, J.O.S., J.S. Collier, J.M. Kendall, G. Helffrich & G. Rumpker, 2012. Plume scar in the mantle lithosphere beneath the Seychelles revealed by seismic imaging, **Earth and Planetary Science Letters**, 355, 20-31. DOI: 10.1016/j.epsl.2012.08.020:
- Collier, J.S. & S.R. Humber, 2011. Fringing reefs of the Seychelles inner granitic islands, Western Indian Ocean **In Seafloor Geomorphology As Benthic Habitat**, Ed P.T. Harris and E.K. Baker. Elsevier: Amsterdam. p. 339-347. DOI: 10.1016/B978-0-12-385140-6.00021-9
- Armitage, J.J., J.S. Collier, T.A. Minshull & T.J. Henstock, 2011. Thin oceanic crust and flood basalts: India-Seychelles breakup, **Geochemistry Geophysics Geosystems**, 12. DOI: 10.1029/2010gc003316:
- Armitage, J.J., J.S. Collier & T.A. Minshull, 2010. The importance of rift history for volcanic margin formation, **Nature**, 465, 913-917. DOI: 10.1038/nature09063:
- Collier, J.S., T.A. Minshull, J.O.S. Hammond, R.B. Whitmarsh, J.M. Kendall, V. Sansom, C.I. Lane & G. Rumpker, 2009. Factors influencing magmatism during continental breakup: New insights from a wide-angle seismic experiment across the conjugate Seychelles-Indian margins, **Journal of Geophysical Research-Solid Earth**, 114. DOI: 10.1029/2008jb005898:
- Minshull, T.A., C.I. Lane, J.S. Collier & R.B. Whitmarsh, 2008. The relationship between rifting and magmatism in the northeastern Arabian Sea, **Nature Geoscience**, 1, 463-467. DOI: 10.1038/ngeo228:
- Collier, J.S., V. Sansom, O. Ishizuka, R.N. Taylor, T.A. Minshull & R.B. Whitmarsh, 2008. Age of Seychelles-India break-up, **Earth and Planetary Science Letters**, 272, 264-277. DOI: 10.1016/j.epsl.2008.04.045:
- Brown, C.J. & J.S. Collier, 2008. Mapping benthic habitat in regions of gradational substrata: An automated approach utilising geophysical, geological, and biological relationships, **Estuarine Coastal and Shelf Science**, 78, 203-214. DOI: 10.1016/j.ecss.2007.11.026:
- Collier, J.S. & S.R. Humber, 2007. Time-lapse side-scan sonar imaging of bleached coral reefs: A case study from the Seychelles, **Remote Sensing of Environment**, 108, 339-356. DOI: 10.1016/j.rse.2006.11.029:
- Lonergan, L., S.C.R. Maidment & J.S. Collier, 2006. Pleistocene subglacial tunnel valleys in the central North Sea basin: 3-D morphology and evolution, **Journal of Quaternary Science**, 21, 891-903. DOI: 10.1002/jqs.1015:
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- Collier, J.S. & C.J. Brown, 2005. Correlation of sidescan backscatter with grain size distribution of surficial seabed sediments, **Marine Geology**, 214, 431-449. DOI: 10.1016/j.margeo.2004.11.011:
- Collier, J.S. & A.B. Watts, 2001. Lithospheric response to volcanic loading by the Canary Islands: constraints from seismic reflection data in their flexural moat, **Geophysical Journal International**, 147, 660-676. DOI: 10.1046/j.0956-540x.2001.01506.x:
- Singh, S.C., J.S. Collier, A.J. Harding, G.M. Kent & J.A. Orcutt, 1999. Seismic evidence for a hydrothermal layer above the solid roof of the axial magma chamber at the southern East Pacific Rise, **Geology**, 27, 219-222. DOI: 10.1130/0091-7613(1999)027<0219:Sefahl>2.3.Co;2:
- Hayward, N., A.B. Watts, G.K. Westbrook & J.S. Collier, 1999. A seismic reflection and GLORIA study of compressional deformation in the Goringe Bank region, eastern North Atlantic, **Geophysical Journal International**, 138, 831-850. DOI: 10.1046/j.1365-246x.1999.00912.x:
- Singh, S.C., G.M. Kent, J.S. Collier, A.J. Harding & J.A. Orcutt, 1998. Melt to mush variations in crustal magma properties along the ridge crest at the southern East Pacific Rise, **Nature**, 394, 874-878. DOI: 10.1038/29740:
- Collier, J.S. & S.C. Singh, 1998. A seismic inversion study of the axial magma chamber reflector beneath the East Pacific Rise near 10 N **In Modern Ocean Floor Processes and the Geological Record**, Ed R. Mills and K. Harrison. Geological Society, London, Special Publications. p. 17-28. DOI: 10.1144/gsl.sp.1998.148.01.02
- Collier, J.S. & S.C. Singh, 1998. Poisson's ratio structure of young oceanic crust, **Journal of Geophysical Research-Solid Earth**, 103, 20981-20996. DOI: 10.1029/98jb01980:

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- Watts, A.B., C. Peirce, J. Collier, R. Dalwood, J.P. Canales & T.J. Henstock, 1997. A seismic study of lithospheric flexure in the vicinity of Tenerife, Canary Islands, **Earth and Planetary Science Letters**, 146, 431-447. DOI: 10.1016/S0012-821x(96)00249-X:
- Collier, J.S. & A.B. Watts, 1997. Seismic-reflection constraints on lithospheric extension: Pure versus simple shear, **Geophysical Journal International**, 129, 737-748. DOI: 10.1111/j.1365-246X.1997.tb04509.x:
- Collier, J.S. & S.C. Singh, 1997. Detailed structure of the top of the melt body beneath the East Pacific Rise at 9 degrees 40'N from waveform inversion of seismic reflection data, **Journal of Geophysical Research-Solid Earth**, 102, 20287-20304. DOI: 10.1029/97jb01514:
- Collier, J.S., J.J. Danobeitia, J.P. Canales, R. Dalwood, S. Gadd, N. Hayward, T. Henstock, S. Krastel, C. Peirce, & A. Watts, 1997. Evidence for asymmetric accretion and low-angle, planar faults in slow-spreading oceanic crust, **Geology**, 25, 1075-1078. DOI: 10.1130/0091-7613(1997)025<1075:Efaaal>2.3.Co;2:
- Collier, J.S., P. Buhl, M. Torné & A.B. Watts, 1994. Moho and lower crustal reflectivity beneath a young rift basin: results from a two-ship, wide-aperture seismic-reflection experiment in the Valencia Trough (western Mediterranean), **Geophysical Journal International**, 118, 159-180. DOI: 10.1111/j.1365-246X.1994.tb04681.x:
- Wiedicke, M. & J. Collier, 1993. Morphology of the Valu Fa Spreading Ridge in the Southern Lau Basin, **Journal of Geophysical Research-Solid Earth**, 98, 11769-11782. DOI: 10.1029/93jb00708:
- Minshull, T.A., R.S. White, P.J. Barton & J.S. Collier, 1992. Deformation at Plate Boundaries around the Gulf-of-Oman, **Marine Geology**, 104, 265-277. DOI: 10.1016/0025-3227(92)90101-M:
- Collier, J.S. & M.C. Sinha, 1992. The Valu Fa Ridge - the Pattern of Volcanic Activity at a Back-Arc Spreading Center, **Marine Geology**, 104, 243-263. DOI: 10.1016/0025-3227(92)90100-V:
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Public Engagement and Media (last 6 years, selected)

My research has attracted a wide-range of media interest and my aim has been to communicate my research to a wide audience. My most significant outreach activities are as follows:

TV

- 2017 Discovery Channel: *Daily Planet* (5/5/17). Half day filming onboard the RRS James Cook in Guadeloupe for a 6-minute news item. Shown Tue 17 Oct 2017.
<https://review.bellmedia.ca/view/45793672>
- 2016 Channel 4/NOVA/Blink: *Volatile Earth* (8/8/16). Two days filming for 1-hour documentary. Shown Sat 11 Nov 2017.
<http://www.pbs.org/wgbh/nova/earth/killer-floods.html>
- 2015 Channel 4/Renegade: *Walking Through Time* (2/8/15). Two days filming for 1-hour documentary. Shown Sat Feb 2016, 1.2 million viewers.
<http://www.channel4.com/programmes/walking-through-time>

Radio

- 2017 BBC Radio4, *Inside Science* (8/4/17). Recorded interview
- 2017 BBC World Service, *Science Today* (10/4/17). Recorded interview

Print/online

- 2019 BBC Bitesize article (12/4/19). <https://www.bbc.com/bitesize/articles/z7bqgwx>
- 2019 New Scientist (6/3/19). Including front page illustration.
<https://www.newscientist.com/article/mg24132200-200-brexit-10000-bc-the-untold-story-of-how-britain-first-left-europe/>
- 2018 Earth Date (10/12/18) <http://earthdate.org/node/91>
- 2017 Guardian Terrawatch (30/4/17). Online article about Caribbean project
www.theguardian.com/world/2017/apr/30/scientists-search-caribbean-quake-clues-terrawatch
- 2015 Royal Astronomical Society, *A&G* magazine (Autumn 2015). Interview on personal motivation and career achievements. **Astronomy & Geophysics**, 56, 5.39-5.39. DOI: 10.1093/astrogeo/atv172:

College outreach events

- 2013 Imperial College Science Festival Lecture. "Island Britain" Video (05/12)
www.youtube.com/watch?v=TW5HJWSpLWE&feature=plcp [This now has >200 k views and is the 3rd most watched video of its type from Imperial (access Aug 2018)].
- 2012 Imperial College Annual Christmas Children's demonstration lecture - "Exploring the deep" Video (12/11) www.youtube.com/watch?v=caCkdwDuySY

Talks

- 2019 Royal Astronomical Society Public Lecture series (12/2/19) "Brexit 1.0."
- 2017 Mole Valley Geological Society (8/11/17) "Island Britain"
- 2015 Institute of Physics, London (21/10/15) "Volatile Earth: The water beneath our feet"
- 2015 Reading Dive Club, (4/2/15) "Mapping the seabed"

Teaching (past 5 years)

Courses

Global Geophysics (2nd year undergraduates)

This 24-contact hour course introduces Earth structure and plate tectonics.

Marine Geology & Geophysics (3rd/4th year undergraduates)

This 24-contact hour course was taken as the highest-level geophysics course on our undergraduate program. The course presents material in a research context and includes linux practicals and group discussions of recent papers as well as conventional lectures.

Seismic Techniques (Postgraduate MSc Petroleum Geoscience and Petroleum Geophysics)

This 24-contact hour course introduces hydrocarbon industry seismic prospecting methods and analysis. I have also given this course in a commercial setting for oil industry professionals.

Masters team project

MSc Geophysics Group Project (in collaboration with Statoil)

Time-lapse analysis of the Gullfaks Field, Norwegian North Sea. Three-week team project using a six vintage 4D Statoil dataset. Analysis includes repeatability; AVO forward modelling of fluid substitutions and mapping of fluid fronts.

Masters student project supervision (past 10 years)

Ros McGee (2009)

Elrad Iskavov (2009)

Mark Briggs (2010)

Ian Mallinson (2010)

Yan Liu (2011)

Venera Batyrkhan (2011)

Iskandar Masri (2012)

Gustav Polisano (2012)

Fergus Stoddart (2013)

Simon Fleckner (2014)

Fabio Contreras (2014)

William Gregory (2014)

Luis Gavidia-Castillo (2014)

Azer Mohammed (2014)

Naomi Gyori (2015)

Haitham AlHindi (2015)

Matt Wetton (2015)

Cameron Berry (2016)

Sophie Butcher (2016)

George Warner (2016)

Theo Meenderink (2018)