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Education

1986-1989 University of Oxford (postgraduate)
1983-1986 University of Cambridge (undergraduate)

Academic Qualifications and membership of bodies

D. Phil. in Marine Geophysics, University of Oxford.
BA in Geological Sciences, University of Cambridge.
Fellow of the Geological Society, London.
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Employment History

January-July 2007 Senior Lecturer; August 2007- Reader in Marine Geophysics
Department of Earth and Environmental Sciences, University of Manchester.

October 2004 - December 2006 University Lecturer
School of Earth, Ocean and Planetary Sciences, Cardiff University.

September 1997 - 2004 Royal Society University Research Fellow
Department of Earth Sciences, Cardiff University, February 2000 - Sept 2004.
Department of Earth Sciences, Oxford University, 1997-January 2000
Research Fellow, Wolfson College, Oxford University, April 1998-October 2000.

December 1992 to August 1997 *Research Fellow of the NERC*
Department of Geological Sciences, University of Durham.

January to August 1993 *International Fellow of the NSERC*
Department of Surveying Engineering, University of New Brunswick (Canada).

February to November 1992 *Senior Geophysicist, Wimpol Ltd*
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January 1990 to January 1992
Research Fellow of the Royal Commission for the Exhibition of 1851
Lamont-Doherty Geological Observatory of Columbia University, New York.

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Royal Greenwich Observatory (SERC) *Assistant Scientific Officer*
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Citation h-index 43 (Google Scholar)

[150]**Mitchell**, **NC**, Mitchell, NC, M Ligi, J Preine, D Liebrand, M Ali, A Decarlis, Contourite-like deposits suggest stronger-than-Present circulation in the Plio-Pleistocene Red Sea, Global and Planet. Change, art. 104527, 2024.

[149]**Mitchell**, **NC**, ICF Stewart, Comment on: "Insights on the tectonic styles of the Red Sea rift using gravity and magnetic data" by Saada et al. (2021), Mar. Petrol. Geol., 2023.

[148]Eladawy, A, **Mitchell**, **NC**, T Nakamura, M El-Husseiny, Y Takagi, N Elhady, B Muller, S Abdel-Hamid, A Mohammed, K Nadaoka, JP Walsh, Towards a combined human-natural system approach in the Northern Red Sea region: ecological challenges, sustainable development, and community engagement, Marine Policy, 2023.

[147]**Mitchell**, **NC**, Preine, J, Okwokwo, OI, Izzeldin, AY, Augustin, N, Stewart, ICF, The ocean-continent transition in the Western Central Red Sea, Journal of African Earth Sciences (2023), art. 105093.

[146]**Mitchell**, **NC**, W Bosworth, The tectonic stability of Arabia, in: "Rifting and sediments in the Red Sea and Arabian Gulf regions", edited by NMA Rasul & I.C.F. Stewart, 2024.

[145]Izzeldin, AY, **NC Mitchell**, Shield suture zones control positions of oceanic spreading segment discontinuities in the central Red Sea, in: "Rifting and sediments in the Red Sea and Arabian Gulf regions", edited by NMA Rasul & I.C.F. Stewart, 2024.

[144]Okwokwo, OI, **NC Mitchell**, Structure of the continent-ocean transition in the Red Sea from gravity modelling of seismic refraction profiles off Sudan, in: "Rifting and sediments in the Red Sea and Arabian Gulf regions", edited by NMA Rasul & I.C.F. Stewart, 2024.

[143]**Mitchell**, **NC,** Z Zhao, Effects of currents and waves on the morphologies of coastal sandy clinoforms: sediment mobility calculations based on current meter and wave data from Southern California, *J Sed Res*, 93, 488-501, 2023.

[142]Chang, YC, **NC Mitchell**, JC Schindlbeck-Belo, TH Hansteen, A Freundt, C Hübscher, R Quartau, Emplacement history of volcaniclastic turbidites around the central Azores volcanic islands: frequencies of slope landslides and eruptions, Geosphere, 2023.

[141]Zhao, Z, **NC Mitchell**, WJ Stephenson, Testing the Sunamura et al. (2014) equations for wave attenuation over shore platforms, Geomorphology, 2022.

[140]**Mitchell**, **NC,** R Quartau, S Moreira, C Beier, Z Zhao, S Ávila, E-M Portanyi A Rodrigues, An equation for deriving spatial variations in carbonate production rates from sediment deposition rates and dilution – application to Santa Maria Island, Azores, *J Sed Res*, 2022.

[139]Shi, W, **Mitchell**, **NC**, Kalnins, L, Stewart, ICF, Izzeldin, AY, Oceanic basement roughness in the central Red Sea, in: "Rifting and sediments in the Red Sea and Arabian Gulf regions", edited by NMA Rasul & I.C.F. Stewart, 2024.

[138]Chang, YC, **NC Mitchell**, R Quartau, C Hübscher, L Rusu, F Tempera, Asymmetric abundances of submarine sediment waves around the Azores volcanic islands, *Marine Geology*, 2022.

[137]Bahia, R, S Covey-Crump, M Jones, **NC Mitchell,** Discordance analysis on a high-resolution valley network map of Mars: assessing the effects of scale on the conformity of valley orientation and surface slope direction, Icarus, 2022.

[136]**Mitchell, NC,** K Hernandez, J Preine, M Ligi, N Augustin, AY Izzeldin, C Hübscher, Early stage diapirism in the Red Sea deep-water evaporites: origins and length-scales, Tectonophys., 2022.

[135]Okwokwo, OI, **NC Mitchell,** W Shi, ICF Stewart, AY Izzeldin, How have thick evaporites affected early sea-floor spreading magnetic anomalies in the Central Red Sea? Geophysical Journal Int., 2022.

[134]Zhao, Z, **NC Mitchell**, R Quartau, S Moreira, L Rusu, CS Melo, SP Ávila, D Das, P Afonso, J Pombo, J Duarte, A Rodrigues, Wave-influenced deposition of carbonate-rich sediment on the insular shelf of Santa Maria Island, Azores, *Sedimentology*, 2022.

[133]de Melo, GW, **NC Mitchell**, J Zahradnik, F Dias, AF do Nascimento, Oceanic seismotectonics from regional earthquake recordings: the 4-5˚N Mid-Atlantic Ridge, *Tectonophys*., 819, 220963, 2021.

[132]Chang, YC, **NC Mitchell**, R Quartau, Landslides in the Upper Submarine Slopes of Volcanic Islands: The Central Azores, *Geochem*. *Geophys*. *Geosyst*., 22, e2021GC009833, 2021.

[131]Chang, YC, **NC Mitchell**, TH Hansteen, JC Schindlbeck-Belo, A Freundt, Volcaniclastic deposits and sedimentation processes around volcanic ocean islands: the central Azores, in "Volcanic Processes in the Sedimentary Record: When Volcanoes Meet the Environment" (ed by: A Di Capua et al.), *Geol. Soc. Lond. Spec. Publ*., 2021.

[130]**Mitchell, NC**, R Jerrett, R Langman, Dynamics and stratigraphy of a tidal sand ridge in the Bristol Channel (Nash Sands banner bank) from repeated high-resolution multibeam echo-sounder surveys, *Sedimentology*, 69, 1051-1082, 2022.

[129]**Mitchell, NC**, Seamounts, In: Shroder, J.J.F. (Ed.), Treatise on Geomorphology, vol. 8. Elsevier, Academic Press, pp. 901–918, 2021.

[128]**Mitchell, NC**, W Shi, A Izzeldin, ICF Stewart, Reconstructing the level of the central Red Sea evaporites at the end of the Miocene, *Basin Research* 2020.

[127]Zhao, Z, **NC Mitchell**, R Quartau, RS Ramalho, L Rusu, Coastal erosion rates of lava deltas around oceanic islands, *Geomorphology*, 2020.

[126]**Mitchell**, **NC**, Comparing the post-WWII publication histories of oceanography and marine geoscience, *Scientometrics*, 2020.

[125]Zhao, Z, **NC Mitchell**, R Quartau, F Tempera, L Bricheno, Submarine Platform Development by Erosion of a Surtseyan Cone at Capelinhos, Faial Island, Azores, *Earth Surface Processes and Landforms*, 44, 2982-3006, 2019.

[124]Li, J., W. Li, T. M. Alves, M. Rebesco, W. Zhan, J. Sun, **N. C. Mitchell,** S. Wu, Different origins of seafloor undulations in a submarine canyon system, northern South China Sea, based on their seismic character and relative location, *Marine Geology*, 413, 99-111, 2019.

[123]**Mitchell**, **NC**, M Ligi, NMA Rasul, Variations in Plio-Pleistocene deposition in the Red Sea, In: NMA Rasul & ICF Stewart (eds), Geological setting, palaeoenvironment and archaeology of the Red Sea, Springer, 323-340, 2018.

[122]**Mitchell**, **NC**, SS Sofianos, Origin of submarine channel north of Hanish Sill, Red Sea, In: NMA Rasul & ICF Stewart (eds), Geological setting, palaeoenvironment and archaeology of the Red Sea, Springer, 259-274, 2018.

[121]Shi, W, **Mitchell**, **NC**, Kalnins, L, Izzeldin, N, Oceanic-like axial crustal high in the central Red Sea, *Tectonophys*. 747-748, 327-342, 2018.

[120]Quartau, R, AS Trenhaile, RS Ramalho, **Mitchell**, **NC**, The role of subsidence in shelf widening around ocean island volcanoes: Insights from observed morphology and modeling, *Earth Planet. Sci. Lett.*, 498, 408-417, 2018.

[119]**Mitchell**, **NC**, ICF Stewart, The modest seismicity of the northern Red Sea rift, *Geophysical Journal International*, 214, 1507-1523, 2018.

[118]**Mitchell**, **NC**, H Davies, Equatorial Pacific gravity lineaments: interpretations with basement topography along seismic reflection lines, *Marine Geophysical Research*, 39, 561-565, 2018.

[117]Hernandez, K, **Mitchell**, **NC**, M Huuse, Deriving relationships between diapir spacing and salt-layer thickness in the Southern North Sea, in: Kilhams, B, Kukla, PA, Mazur, S, McKie, T, Munlieff, HF, van Ojik (Eds) Mesozoic resource potential in the Southern Permian Basin, Geological Society, London, Spec. Pubs. 469, doi:10.1144/SP469.16, 2018.

[116]**Mitchell**, **NC**, N Augustin, Halokinetics and other features of GLORIA long-range sidescan sonar data from the Red Sea, *Marine and Petroleum Geology*, 88, 724-738, 2017.

[115]**Mitchell**, **NC**, S Boult, Electrical resistivity structure of a raised mire: Malham Tarn Moss, Yorkshire Dales, U.K., Field Studies, 2017, http://fsj.field-studies-council.org/media/3238187/fs2017_mitchell.pdf.

[114]**Mitchell**, **NC**, Comment on: "The spatial extent of the Deep Western Boundary Current into the Bounty Trough: new evidence from parasound sub-bottom profiling" by Horn and Uenzelmann-Neben, *Marine Geophysical Research*, 37, 371-374, 2016.

[113]**Mitchell**, **NC**, Mid-ocean ridges, in: A Micallef, S Krastel & A Savini, Submarine geomorphology, Springer Verlag, 349-365, 2018.

[112]Quartau, R., J. Madeira, **N. C. Mitchell**, F. Tempera, P. F. Silva, and F. Brandaõ, Reply to comment by Marques et al. on "The insular shelves of the Faial-Pico Ridge (Azores archipelago): A morphological record of its evolution", *Geochem., Geophys., Geosyst.* 17, doi:10.1002/2015GC006180, 2016.

[111]Urías Espinosa, J, WL Bandy, CA Mortera Gutiérrez, F Núñez Cornú and M**itchell, NC**, Multibeam Bathymetric Survey of the Ipala Submarine Canyon, Jalisco, Mexico (20°N): The Southern Boundary of the Banderas Forearc Block? *Tectonophysics*, 671, 249-263, 2016.

[110]Goswami, R, M**itchell, NC,** Brocklehurst, SH, A Argnani, Linking subaerial erosion with submarine geomorphology in the northern Ionian Sea (south of the Messina Strait), Italy, *Basin Research*, 2016.

[109]Omira, R, R Quartau, I Ramalho, MA Baptista & **NC Mitchell**, The tsunami effects of a collapse of a volcanic island on a semi- enclosed basin: The Pico-São Jorge channel in the Azores archipelago, in: JC Duarte & WP Schellart (Eds.), Plate Boundaries and Natural Hazards, American Geophysical Union, 271-287, 2016.

[108]**Mitchell, NC,** M Ligi, E Rohling, Red Sea isolation history suggested by Plio-Pleistocene seismic reflection sequences, Earth Planet. Sci. Lett., 430, 387-397, 2015.

[107]Quartau, R., A. Hipólito, **N. C. Mitchell**, J.L. Gaspar, and F. Brandaõ, Comment on "Construction and destruction of a volcanic island developed inside an oceanic rift: Graciosa Island, Terceira Rift, Azores" by Sibrant et al. (2014) and proposal of a new model for Graciosa's geological evolution, J. Volcanol. Geotherm. Res., 303, 146-156, 2015.

[106]**Mitchell, NC,** HL Simmons and CH Lear, Modern and ancient hiatuses in the pelagic caps of Pacific guyots and seamounts and internal tides, Geosphere, v. 11, 2015.

[105]**Mitchell, NC,** M Ligi, P Feldens and C Hübscher, Deformation of a young salt giant: regional topography of the Red Sea Miocene evaporites, Basin Research, 29, 352-369, 2017.

[104]**Mitchell, NC,** Submarine Geomorphology, in Reference Module in Earth Systems and Environmental Sciences, Elsevier, Chapter 09249, 2015 (editor review only).

[103]Quartau, R., J. Madeira, **N. C. Mitchell**, F. Tempera, P. F. Silva, and F. Brandaõ, The insular shelves of the Faial-Pico Ridge (Azores archipelago): A morphological record of its evolution, Geochem., Geophys., Geosyst. 16, doi:10.1002/2015GC005733, 2015.

[102]**Mitchell, NC,** Bedrock erosion by sedimentary flows in submarine canyons, Geosphere, 2014.

[101]Feldens, P, **NC Mitchell**, Salt flows in the central Red Sea, In: The Red Sea: the formation, morphology, oceanography and environment of a young ocean basin, N Rasul and IC Stewart (eds), Springer, 205-218, 2015.

[100]**Mitchell, NC**, Lineaments in marine gravity data of the Red Sea, In: The Red Sea: the formation, morphology, oceanography and environment of a young ocean basin, N Rasul and IC Stewart (eds), Springer, 123-133, 2015.

[99]Goswami, R, **NC Mitchell**, A Argnani, S Brocklehurst, Geomorphology of the western Ionian Sea between

Sicily and Calabria, Italy, Geo-Marine Letters, 34, 419-433, 2014.

[98]**Mitchell, NC**, Y Park, Nature of crust in the central Red Sea, Tectonophysics, 628, 123-139, 2014.

[97]Gales, JA, PT Leat, RD Larter, G Kuhn, C-D Hillenbrand, AGC Graham, **NC Mitchell**, AJ Tate, GB Buys, W Jokat, Large-scale submarine landslides, channel and gully systems on the southern Weddell Sea margin, Antarctica, Marine Geology 348, 73-87, 2014.

[96]Dubois, N., **NC Mitchell**, IR Hall, Data Report: Particle Size Distribution for IODP Expedition 329 Sites in the South Pacific Gyre, in: D'Hondt, S., Inagaki, F., Alvarez Zarikian, C.A., and the Expedition 329 Scientists (eds), Proc. IODP, Vol. 329 Tokyo (Integrated Ocean Drilling Program Management International, Inc.), 10.2204/iodp.proc.329.201.2014, 2014.

[95]Schmitt, T, **NC Mitchell**, Dune-associated sand fluxes at the nearshore termination of a banner sand bank (Helwick Sands, Bristol Channel), Continental Shelf Research, 76, 64-74, 2014.

[94]Quartau, R, AS Trenhaile, **NC Mitchell**, F Tempera, 2013, Génese e desenvolvimento de plataformas insulares vulcânicas – o caso da Ilha do Faial nos Açores, in: R Dias, A Araújo, P Terrinha & JC Kullberg (eds) *Geologia de Portugal,* Volume II – Geologia Meso-cenozóica de Portugal, Escolar Editora, ISBN 978-972-592-364-1, 2013.

[93]Ramalho, RS, R Quartau, AS Trenhaile, **NC Mitchell**, CD Woodroffe, SP Ávila, Coastal evolution on volcanic oceanic islands: a complex interplay between volcanism, erosion, sedimentation, sea-level change and biogenic production. Earth Science Reviews, 127, 140-170, 2013.

[92]Tempera, F, Hipólito, A, Madeira, J, Vieira, S, Campos, AS and **Mitchell, NC,** Condor seamount (Azores, NE Atlantic): A morpho-tectonic interpretation. Deep Sea Res. Part II, 98, 7-23, 2013.

[91]**Mitchell, NC**, R Stretch, F Tempera, M Ligi, Volcanism in the Azores: a marine geophysical perspective, In: Volcanism in the Azores, Beier, C, Küppers, U (eds), Springer. 2018.

[90]**Mitchell, NC, &** N Dubois, Evaluating Cenozoic equatorial sediment deposition anomalies for potential paleoceanographic and Pacific plate motion applications, Marine Geophysical Research, 35, 1-20, 2014.

[89]**Mitchell, NC, &** JM Huthnance, Geomorphological and geochemical evidence (^{230}Th anomalies) for cross-equatorial currents in the central Pacific, Deep-Sea Research I, 78, 24-41, 2013.

[88]Gales, JA, RD Larter, **NC Mitchell,** JA Dowdeswell, Geomorphic signature of Antarctic submarine gullies: Implications for slope processes. Marine Geology, 337, 112-124, 2013.

[87]Quartau, R & **NC Mitchell**, Comment on: "Reconstructing the architectural evolution of volcanic islands from combined K/Ar, morphologic, tectonic, and magnetic data: The Faial Island example (Azores)" by A. Hildenbrand et al., J Volcanol Geotherm Res, 255, 124-126. (editor review only)

[86]**Mitchell, NC**, R Quartau & J Madeira, Large-scale active slump of the southeastern flank of Pico Island, Azores: Comment, Geology, 41, e301, 2013, doi: 10.1130/G34006C.1, 2013. (editor review only)

[85]**Mitchell, NC**, JM Huthnance, T Schmitt and B Todd, Threshold of erosion of submarine bedrock landscapes by tidal currents, Earth Surface Processes and Landforms, 38, 627-639, 2012.

[84]**Mitchell, NC**, R Stretch, C Oppenheimer, D Kay and C Beier, Cone morphologies associated with shallow marine eruptions: east Pico Island, Azores, Bulletin of Volcanology, 74, 2289-2300, 2012.

[83]Gales, JA, RD Larter, **NC Mitchell**, C-D Hillenbrand, S Østerhus, and DR Shoosmith, Southern Weddell Sea shelf edge geomorphology: Implications for cold, dense water overflow as an Antarctic gully-forming mechanism, J Geophys Res - Earth Surface, 117, paper F04021, 2012.

[82]**Mitchell, NC**, Aspects of marine geoscience – a review and thoughts on potential for observing active processes and progress through collaboration between the ocean sciences, Philosophical Transactions of the Royal Society A 370, 5567-5612, 2012.

[81]Dubois, N. and **Mitchell, NC**, Large-scale sediment redistribution on the equatorial Pacific seafloor, Deep-Sea Research I, 69, 51-61, 2012.

[80]**Mitchell, NC**, Hot, cracking rocks deep down, Nature Geoscience, 5, 444-445, 2012. (Editor-reviewed only)

[79]Goswami, R, S Brocklehurst and **NC Mitchell**, Erosion of a tectonically uplifting landscape, NE Sicily, Italy, Geomorphology, 171-172, 114-126, 2012.

[78]**Mitchell, NC**, Modelling the rollovers of sandy clinoforms from the gravity effect on wave-agitated sand, J Sed Res. 82, 464-468, 2012.

[77]Vachtman, D, **NC Mitchell**, and R. Gawthorpe, Morphologic signatures in submarine canyons and gullies, central USA Atlantic continental margins, Marine and Petroleum Geology 41, 250–263, 2013.

[76]Van Landeghem, KJJ, JH Baas, **NC Mitchell**, D Wilcockson, and AJ Wheeler, Reversed sediment wave migration in the Irish Sea, NW Europe: A reappraisal of the validity of geometry-based predictive modelling and assumptions, Marine Geology, v. 295-298, 95-112, 2012.

[75]Quartau R, Tempera F, **Mitchell NC**, Pinheiro LM, Duarte H, Brito PO, Bates CR, Monteiro JH (2012) Morphology of the Faial Island shelf (Azores): The interplay between volcanic, erosional, depositional, tectonic and mass-wasting processes. Geochem. Geophys. Geosyst. 13: Paper Q04012, doi:10.01029/02011GC003987.

[74]**Mitchell, NC**, G Masselink, JM Huthnance, LM Fernández Salas and F Lobo, Depths of modern sand clinoforms, J Sed Res. 82, 469-481, 2012.

[73]**Mitchell, NC**, R Quartau & J Madeira, Assessing landslide movements in volcanic islands using near-shore marine geophysical data: south Pico island, Azores, Bulletin of Volcanology, 74, 483-496, 2012.

[72]Stevenson, JA, **NC Mitchell**, M Cassidy and H Pinkerton, Widespread inflation and drainage of a

pahoehoe flow field: the Nesjahraun, Thingvellir, Iceland, Bull. Volcanol., 74, 15-31, 2012.

[71]Stevenson, JA, **NC Mitchell**, F Mochrie, M Cassidy and H Pinkerton, Lava penetrating water: the different behaviour of pahoehoe and aa at the Nesjahraun, Thingvellir, Iceland, Bull. Volcanol., 74, 33-46, 2012.

[70]Ligi, M, E Bonatti, F Caratori Tontini, A Cipriani, L Cocchi, A Schettino, G Bortoluzzi, V Ferrante, S Khalil, **NC Mitchell** and N Rasul, Initial burst of oceanic crust accretion in the Red Sea due to edge-driven mantle convection, Geology 39, 1019-1022, 2011.

[69]Goswami, R, **NC Mitchell** & S Brocklehurst, Distribution and causes of landslides in the eastern Peloritani of NE Sicily and western Aspromonte of SW Calabria, Italy, *Geomorphology*. 132, 111-122, 2011.

[68]Tominaga, M, M Lyle and **NC Mitchell**, Seismic interpretation of pelagic sedimentation regimes in the 18-53 Ma eastern equatorial Pacific: basin-scale sedimentation and infilling of abyssal valleys, *Geochem. Geophys. Geosyst.* 11, Paper Q03004, doi: 10.1029/2010GC003347RR, 2011.

[67]Tempera, F, E Giacomello, **NC Mitchell**, AS Campos, A Braga Henriques, A Martins, I Bashmachnikov, A Mendonça, T Morato, A Colaço, FM Porteiro, D Catarino, J. Gonçalves, MR Pinho, EJ Isidro, RS Santos and G Menezes, Mapping the Condor seamount seafloor environment and associated biological assemblages (Azores, NE Atlantic), p. 807-818 in: Harris, PT et al (eds) Seafloor Geomorphology as Benthic Habitat: Geohab Atlas of Seafloor Geomorphic Features and Benthic Habitats. Elsevier, London, 2012.

[66]**Mitchell**, **NC,** M Schmidt and M Ligi, Comment on "Formation of Thetis Deep metal-rich sediments in the absence of brines, Red Sea" by Pierret et al., J. Geochem. Expl. 108, 112-113, 2011. (editor review only)

[65]Quartau, R., AS Trenhaile, **NC Mitchell** and F Tempera. Development of volcanic insular shelves: Insights from observations and modelling of Faial Island in the Azores Archipelago. Marine Geology, 275: 66-83, 2010.

[64]Stevenson, J, X. Sun and **NC Mitchell**, Despeckling SRTM and other topographic data with a denoising algorithm, Geomorphology, 114, 238-252, 2010.

[63]**Mitchell, NC**, M Ligi, V Ferrante, E Bonatti and E Rutter, Submarine salt flows in the central Red Sea, Geol. Soc. Am. Bulletin, 122, 701-713, 2010.

[62]Van Landeghem, KJJ, AJ Wheeler, and **NC Mitchell,** Seafloor evidence for palaeo-ice streaming and calving of the grounded Irish Sea Ice Stream: implications for the interpretation of its final deglaciation phase, Boreas, 38, 119-131, 2009.

[61]Van Landeghem, KJJ, K Uehara, AJ Wheeler, **NC Mitchell** and JD Scourse, Post-glacial sediment dynamics in the Irish Sea and sediment wave morphology: Data–model comparisons, Continental Shelf Research, 29, 1723-1736, 2009.

[60]Van Landeghem, KJJ, AJ Wheeler, **NC Mitchell** and G Sutton, Variations in sediment wave dimensions across the tidally dominated Irish Sea, NW Europe, Marine Geology, 263, 108-119, 2009.

[59]Robinson, KA; Darbyshire, T.; Van Landeghem, K.; Lindenbaum, C.; McBreen, F.; Creaven, S.; Ramsay, K.; Mackie, ASY; **Mitchell, NC**; Wheeler, A.; Wilson, JG; O'Beirn, F. (2009). Habitat mapping for conservation and management of the Southern Irish Sea (HABMAP): I. Seabed surveys. Studies in Marine Biodiversity and Systematics from the National Museum of Wales. BIOMÔR Reports, 5(1). National Museum of Wales: Cardiff. ISBN 978-07200-0600-1, 222 pp.

[58]Agnani, A, G Brancolini, M Rovere, F Accaino, F Zgur, M Grossi, F Fanzutti, P Visnovic, D Sorgo, E Lodolo, C Bonazzi, **N Mitchell,** Hints on active tectonics in the Messina Straits and surroundings: preliminary results from the TAORMINA-2006 seismic cruise, Bull. Geofis. Teor. Appl. 49, 163-176, 2008.

[57]Schmitt, T, **NC Mitchell** and ATS Ramsay, Characterizing uncertainties for quantifying bathymetry change between time-separated multibeam echo-sounder surveys, *Continental Shelf Research* 28, 1166-1176, 2008.

[56]**Mitchell, NC** and J Lofi, Submarine and subaerial erosion of volcanic landscapes: comparing Pacific Ocean seamounts with Valencia Seamount, exposed during the Messinian Salinity Crisis, *Basin Research* 20, 489-502, 2008.

[55]**Mitchell, NC**, C Beier, P Rosin, R Quartau, F Tempera, Submarine lava flows around the coasts of Pico Island, Azores, *Geochem. Geophys. Geosyst.*, 9, Q03024, doi:10.1029/2007GC001725, 2008.

[54]**Mitchell, NC**, Summary of progress in geomorphologic modelling of continental slope canyons, In: Gallagher, K, S J Jones & J Wainwright (eds), Geol. Soc. Spec. Publ. 296, "Landscape Evolution: Denudation, Climate and Tectonics Over Different Time and Space Scales," 183-294, 2008.

[53]**Mitchell, NC**, and JM Huthnance, Oceanographic currents and the convexity of the uppermost continental slope, *J. Sedimentary Res.* 78, 29-44, 2008.

[52]Moore, TC, **NC Mitchell**, M Lyle, J Backman and H Palike, Hydrothermal Pits in the Biogenic Sediments of the Equatorial Pacific Ocean, *Geochem. Geophys. Geosyst.,* 8, Q03015, doi:10.1029/2006GC001501, 2007.

[51]**Mitchell, NC**, and JM Huthnance, Comparing the smooth, parabolic shapes of interfluves in continental slopes to predictions of diffusion transport models, *Marine Geology*, 236, 189-208, 2007.

[50]**Mitchell, NC**, The morphologies of knickpoints in submarine canyons, *Geol. Soc. Am. Bull.*, 118, 589-605, 2006.

[49]Bull, JM, TA Minshull, **NC Mitchell**, JK Dix and J Hardardottir, Magmatic and tectonic history of Iceland's western rift at Lake Thingvallavatn, *Geol. Soc. Am. Bull.*, 117, 1451-1465, 2005.

[48]**Mitchell, NC**, Channelled erosion through a marine dump site of dredge spoils around the mouth of the

Puyallup River, Washington State, *Marine Geology*, 220, 131-151, 2005.

[47]Schmitt, T, **Mitchell, NC** and Ramsay, ATS, 2007. Use of swath bathymetry in the investigation of sand dune geometry and migration around a near shore 'banner' tidal sandbank. In: PS Balson and MB Collins (Editors), Coastal and shelf sediment transport, Spec Publ 274. Geol. Soc., Lon, pp. 53-64.

[46]Stretch, R, **NC Mitchell** and RA Portaro, A morphometric analysis of the submarine volcanic ridge of Pico Island, *J. Volcanol. Geotherm. Res.*, 156, 35-54, 2006.

[45]**Mitchell, NC**, and MW Lyle, Patchy deposits of Cenozoic pelagic sediments in the central Pacific, *Geology*, 33, 49-52, 2005.

[44]Lyle, MW, **Mitchell, NC**, Pisias, N, Mix, A, Martinez, JI and Paytan, A, Do geochemical estimates of sediment focusing in the equatorial Pacific pass the sediment test? *Paleoceanography*, 20, PA1005, doi:10.1029/2004PA001019, 2005.

[43]**Mitchell, NC**, Erosion of canyons in continental slopes, in Geol. Soc. Spec. Publ. 244 "Submarine slopes: processes and products," 131-140, 2005.

[42]**Mitchell, NC**, Interpreting long-profiles of canyons in the USA Atlantic continental slope, *Marine Geology*, 214, 75-99, 2005.

[41]**Mitchell, NC**, Form of submarine erosion from confluences in Atlantic USA continental slope canyons, *Am. J. Sci.*, 304, 590-611, 2004.

[40]**Mitchell, NC**, WB Dade and DG Masson, Erosion of the submarine flanks of the Canary Islands, *J. Geophys. Res.*, 2003 (DOI: 10.1029/2002JF000003).

[39]Bull, JM, Minshull, TA, **Mitchell, NC**, Thors, K, Dix, JK, and Best, AI, Fault and magmatic interaction within Iceland's western rift over the last 9 kyr, *Geophys. J. Int.*, 154, F1-F8, 2003.

[38]**Mitchell, NC**, MW Lyle, MB Knappenberger and LM Liberty, The Lower Miocene to Present stratigraphy of the equatorial Pacific sediment bulge and carbonate dissolution anomalies, *Paleoceanography*, 18, 2003 (DOI: 10.1029/2002PA000828).

[37]**Mitchell, NC**, Susceptibility of mid-ocean ridge volcanic islands and seamounts to large-scale landsliding, *J. Geophys. Res.*, 2003, doi: 10.1029/2002JB001997.

[36]Urgeles, R, DG Masson, M Canals, AB Watts, MJR Gee, TP Le Bas and **NC Mitchell**, Giant landslides off the island of La Palma, in J Mienert and PPE Weaver (eds) European margin sediment dynamics: Side-scan sonar and seismic images, Springer, 297-300, 2003.

[35]Coogan, LA, **NC Mitchell** and MJ O'Hara, Roof assimilation at fast-spreading ridges: an investigation combining geophysical, geochemical and field evidence, *J. Geophys. Res.*, 108, 2003, doi: 10.1029/2001JB001171.

[34]Reston, TJ, W Weinrebe, I Grevemeyer, ER Flueh, **NC Mitchell,** L Kirstein, C Kopp, H Kopp and participants of Meteor 47/2, A rifted inside corner massif on the MAR at 5°S, *Earth Planet. Sci. Lett.*, 200, 255-269, 2002.

[33]**Mitchell, NC**, DG Masson, AB Watts, MJR Gee and R Urgeles, The morphology of the flanks of volcanic ocean islands: A comparative study of the Canary and Hawaiian hotspot islands, *J. Volcanol. Geotherm. Res.*, 115, 83-107, 2002.

[32]Masson, DG, AB Watts, MJR Gee, R Urgeles, **NC Mitchell**, TP Le Bas, M Canals, Slope failures on the flanks of the western Canary Islands, *Earth Sci. Rev.*, 57, 1-35, 2002.

[31]Gee, MJR, DG Masson, AB Watts and **NC Mitchell**, Passage of debris flows and turbidity currents through a topographic constriction: Seafloor erosion and deflection of flow pathways, *Sedimentology*, 48, 1389-1409, 2001.

[30]Gee, MJR, DG Masson, AB Watts and **NC Mitchell**, Landslides and the evolution of El Hierro in the Canary Islands, *Mar. Geol.*, 177, 271-293, 2001.

[29]**Mitchell, NC**, Random sequences of lithologies exposed on the Mid-Atlantic Ridge, *J. Geophys. Res.*, 106, 26,365-26,378, 2001.

[28]Gee, MJR, DG Masson, AB Watts and **NC Mitchell**, Offshore continuation of volcanic rift zones, El Hierro, Canary Islands, *J. Volcanol. Geotherm. Res.*,105, 107-119, 2001.

[27]**Mitchell, NC**, The transition from circular to stellate forms of submarine volcanoes, *J. Geophys. Res*, 106, 1987-2003, 2001.

[26]**Mitchell, NC**, MA Tivey and P Gente, Seafloor slopes at mid-ocean ridges from submersible observations and implications for interpreting geology from seafloor topography, *Earth Planet. Sci. Lett.*, 183, 543-555, 2000.

[25]**Mitchell, NC**, RA Livermore, P Fabretti and G Carrara, The Bouvet triple junction, 20 to 10 Ma, and extensive transtensional deformation adjacent to the Bouvet and Conrad transforms, *J. Geophys. Res., 105,* 8279-8296, 2000.

[24]Escartin, J, PA Cowie, RC Searle, S Allerton, **NC Mitchell**, CJ MacLeod, and AP Slootweg, Quantifying tectonic and magmatic strain at a slow-spreading ridge segment (Mid-Atlantic Ridge, 29°N), *J. Geophys. Res.*, *104*, 10421-10437, 1999.

[23]**Mitchell, NC**, and RC Searle, Fault scarp statistics at the Galapagos Spreading Centre from Deep Tow data, *Mar. Geophys. Res.*, *20,* 183-193, 1998.

[22]**Mitchell, NC**, Modeling Cenozoic sedimentation in the central equatorial Pacific and implications for true polar wander, *J. Geophys. Res..* 103, 17749-66, 1998.

[21]**Mitchell, NC** and RA Livermore, Spiess Ridge: An axial high on the slow-spreading Southwest Indian Ridge, *J. Geophys. Res.*, 103, 15457-15471, 1998.

[20]**Mitchell, NC** and RA Livermore, The present configuration of the Bouvet triple junction, *Geology*, *26*, 267-270, 1998.

[19]**Mitchell, NC**, Sediment accumulation rates from Deep Tow profiler records and DSDP Leg 70 cores over the Galapagos Spreading Centre, in: A Cramp, CJ MacLeod, SV Lee and EJW Jones (eds) The Geological Evolution of Ocean Basins: Results From the Ocean Drilling Program, Spec. Publ. Geol. Soc. Lond., 131, 199-209, 1998.

[18]**Mitchell, NC**, Characterising the irregular coastlines of volcanic ocean islands, *Geomorph.*, 23, 1-14, 1998.

[17]Searle, RC, PA Cowie, **NC Mitchell,** S Allerton, CJ MacLeod, J Escartin, SM Russell, PA Slootweg, and T

Tanaka, Fault structure and detailed evolution of a slow spreading ridge segment: the Mid-Atlantic Ridge at 29°N, *Earth Planet. Sci. Lett.,* 154, 167-183, 1998.

[16]**Mitchell, NC**, S Allerton and J Escartin, Sedimentation on young ocean floor at the Mid-Atlantic Ridge, 29° N, *Mar. Geol.*, 148, 1-8, 1998.

[15]**Mitchell, NC,** Processing and analysis of Simrad multibeam sonar data, *Mar. Geophys. Res.*, 18, 729-739, 1996.

[14]**Mitchell, NC**, Creep in pelagic sediments and potential for morphologic dating of marine fault scarps, *Geophys. Res. Lett.*, 23, 483-486, 1996.

[13]**Mitchell, NC**, Diffusion transport model of pelagic sediments on the Mid-Atlantic Ridge, *J. Geophys. Res.*, 100, 19,991-20,009, 1995.

[12]**Mitchell, NC**, Characterising the extent of volcanism at the Galapagos spreading centre using Deep Tow sediment profiler records, *Earth Planet. Sci. Lett.*, 134, 459-472, 1995.

[11]**Mitchell, NC**, and JA Spencer, An algorithm for finding routes for submarine cables or pipelines over complex bathymetry using Graph Theory, *The Hydrographic J.*, 78, 29-32, 1995.

[10]**Mitchell, NC**, Representing backscatter fluctuations with a PDF convolution equation, and its application to study backscatter variability in side-scan sonar images, *IEEE Trans. Geosci. Remote Sens.*, 33, 1328-1331, 1995.

[9]**Mitchell, NC**, and JE Hughes Clarke, Classification of seafloor geology using multibeam sonar data from the Scotian Shelf, *Mar. Geol.*, 121, 143-160, 1994.

[8]**Mitchell, NC**, A model for attenuation of backscatter due to sediment accumulations and its application to determine sediment thickness with GLORIA sidescan sonar, *J. Geophys. Res.*, 98, 22477-22493, 1993.

[7]**Mitchell, NC** and LM Parson, The tectonic evolution of the Indian Ocean Triple Junction, anomaly 6 to present, *J. Geophys. Res.*, 98, 1793-1812, 1993.

[6]**Mitchell, NC,** Comment on the mapping of iron-manganese nodule fields using reconnaissance sonars such as GLORIA, *Geo-Mar. Lett.* 13, 244-7, 1993. (editor review only)

[5]**Mitchell, NC**, Improving GLORIA images using Sea Beam data, *J. Geophys. Res.* 96, 337-351, 1991.

[4]**Mitchell, NC**, Distributed extension at the Indian Ocean Triple Junction, *J. Geophys. Res.*, 96, 8019-8043, 1991.

[3]**Mitchell, NC,** An evolving ridge system around the Indian Ocean Triple Junction, *Mar. Geophys. Res.*, 13, 173-201, 1991.

[2]Searle, RC, TP LeBas, **NC Mitchell**, ML Somers, LM Parson and P Patriat, GLORIA image processing: the state of the art, *Mar. Geophys Res*, 12, 21-39, 1990.

[1]**Mitchell, NC,** and ML Somers, Quantitative backscatter measurements with a long-range side-scan sonar, *IEEE J. Oceanic Engineering*, 14, 368-374, 1989.

Conference Proceedings, Workshops and Other Publications (selected)

Mitchell, NC, Trends in marine geoscience publishing, Ocean Challenge 24(10), 2020.

Workshop participants, InterRidge Workshop on Seamounts and Islands Associated With Mid-Ocean Ridges (19-21 September 2019), (https://www.interridge.org//WG_MOR_islands_and_seamounts).

Mitchell, NC, Managing the UK's seamounts, Geoscientist 29(10), p. 24, 2019.

Augustin, N, **NC Mitchell,** van der Zwan, FM, and shipboard scientific party**,** RV Pelagia Fahrtbericht / Cruise Report 64PE-445: SALTAX: Geomorphology and geophysics of submarine salt flows in the Red Sea Rift, Limassol (Cyprus) – Safaga (Egypt), 27.08. – 21.09.2018 . GEOMAR Report, N. Ser. 050 . GEOMAR Helmholtz-Zentrum für Ozeanforschung, Kiel, Germany, 46 pp. DOI 10.3289/GEOMAR_REP_NS_50_2019.

Mitchell, NC, Peer-review problems, Geoscientist Online, 2018 (https://www.geolsoc.org.uk/letters).

Mitchell, NC, M Ligi, Compression folds and a strike-slip fault in flowing evaporites, Red Sea, in AA Misra and S Mukherjee (eds), *Atlas of Structural Geological Interpretation from Seismic Images*, p. 137-139, John Wiley (2018).

Mitchell, NC, M Ligi, Growth structures and unconformities in the upper evaporites, Red Sea, in AA Misra and S Mukherjee (eds), *Atlas of Structural Geological Interpretation from Seismic Images*, p. 191-193, John Wiley (2018).

Mitchell, NC, Cheek-by-jowl beneath the oceans: UK-German marine research collaboration, in R Bacon (ed), Crossing points: UK-Germany, p. 14-18, British Council (2018).

Schmitt, T., **NC Mitchell**, Multibeam survey of a tidal banner bank: morphology of dunes in eroding partially compacted sands? Marine & River Dynamics MARID V, 4 & 5 April 2016, Bangor, North Wales, UK.

Mitchell, NC, Introducing Geomorphology: A Guide to Landforms and Processes by Adrian Harvey (book review), in Underwater Technology, Society of Underwater Technology 31 (3), 153-154 (2013).

Mitchell, NC, B Todd, T Schmitt, Bedrock erosion in strong tidal streams: Erosion points to hazards for tidal power installations, Sea Technology April 2013, p 41-43, 2013.

Mitchell, NC, & the AMAT03 shipboard party, R/V Roger Revelle Cruise "AMAT03" March-April 2006, *IODP UK newsletter* 31, p 24-25, 2006.

Mitchell, NC, T Schmitt, E Isidro, F Tempera, F Cardigos, JC Nunes, J Figueiredo, Multibeam sonar survey of the central Azores volcanic islands, InterRidge News, 12.2, 30-32, 2003.

Mitchell, NC, Experiences of the Royal Society Research Fellow/MP pairing scheme, Science in Parliament, 60(1), p.5, 2003.

Mitchell, NC, et al., Reson SeaBat 8160 and 8101 Multibeam sonar trials and fieldwork on tug boat New Ross 1, Cardiff Bay, Scarweather Sands and the South Gower coastline, September-October 2001,

High-resolution marine and freshwater geophysics consortium field report 1, Cardiff University, 2001.

Mitchell, NC, AP Cunningham, RD Larter & RA Livermore, Surveys of the southern Mid-Atlantic Ridge by RRS James Clark Ross, InterRidge News 10(1), p 32, 2001.

Ligi, M., et al., Tectonic and pressure controls on the giant volcanic ridges in the Azores region (Atlantic Ocean). Report on the TOBI side-scan sonar, swath bathymetry, sub-bottom and magnetic investigations during cruise AZ99, Technical report IGM-CNR N, Bologna, August, 1999.

Cunningham, AP and **NC Mitchell**, Cruise JR53, September to October 2000, Atlantic Ocean Marine Geophysics, Cruise report, BAS Ref JR53, 2001.

Mitchell, NC, Penetration depths of sonars and interpreting images of lava flows, RIDGE Events, 10(2), 23-25, 1999.

Devey, CW, H Moller, KM Haase, P Stoffers, C-D Garbe-Schonberg, **N Mitchell**, W Pluger, Hotspot-ridge interactions near Ascension Island, equatorial Atlantic?, InterRidge News, 8(2),40-43, 1999.

Devey, CW, S Drachenberg, O Esper, S Gerhardt, KM Haase, E Hellebrand, S Klauke, F Lichowski, S Ludwig, **N Mitchell**, H Moller, R Neef, W Pluger, M Segl, B Wenskowski, N Zatloukal, M Zimmerer, Report and shipboard results from METEOR cruise M 41/2, Libreville-Vitoria, 18.3.-15.4.98, Berichte, Fachbereich Geowissenschaften, Univ. Bremen, No. 137, 50pp., Bremen, 1998.

Mitchell, NC, J Escartin and S Allerton, Detachment faults at mid-ocean ridges, EOS, 79, p. 127, 1998.

Bull, JM, JK Dix, TA Minshull, **NC Mitchell**, K Thors and AI Best, Neotectonics in an Icelandic lake - Thingvallavatn, BRIDGE News., 11, 22-25, 1996.

Escartin, J, AP Slootweg, CG Flewellen, IA Rouse, RC Searle, **NC Mitchell**, PA Cowie, S Allerton, CJ MacLeod, SM Russel and T Tanaka, The first TOBI swath bathymetry, BRIDGE News., 11, 28-29, 1996.

Gente, P, G Ceuleneer, O Dauteuil, J Dyment, C Honsho, C Laverne, C Le Turdu, **NC Mitchell**, M Ravilly and R Thibaud, On- and off-axis submersible investigations on a highly magmatic segment of the Mid-Atlantic Ridge (21˚40'N): the TAMMAR cruise. InterRidge News, 5(2), 27-31, 1996.

Mitchell, NC, and RC Searle, Extent of active faulting from sediment scarps, FARA-IR Mid-Atlantic Ridge Symposium, June 1996, Reykjavik, Iceland, J. Conf. Abs. 1(2), 831-832, 1996.

Searle, R. C., **NC Mitchell**, J Escartin, AP Slootweg, S Russel, PA Cowie, S Allerton, CJ MacLeod, T Tanaka, C Flewellen & I Rouse, High-resolution TOBI study of the Broken Spur segment, Mid-Atlantic Ridge, 29˚N, ODP-InterRidge-IAVCEI workshop on The Oceanic Lithosphere and Scientific Drilling into the 21st Century, H Dick & C Mevel (conv), Woods Hole Ocean Inst, May '96.

Gente, P, et al., N/O Nadir cruise report for expedition TAMMAR, Univ. Brest, France, 1996.

Searle, RC, et al., Near-bottom geophysical studies of the Broken Spur spreading segment, Mid-Atlantic Ridge 29˚N, RRS Charles Darwin cruise 99 rep., Univ. Durham, 1996.

Mitchell, NC, Bioturbation, Sediment Transport and Morphologic Dating of Faults, BRIDGE Newslett. 10, 29-30, 1996.

Searle, RC, **NC Mitchell**, J Escartin, AP Slootweg, S Russel, PA Cowie, S Allerton, CJ MacLeod, T Tanaka, C Flewellen and I Rouse, High-resolution TOBI study of the Broken Spur segment, Mid-Atlantic Ridge, 29˚N, FARA-IR Mid-Atlantic Ridge Symposium, June 1996, Reykjavik, Iceland, J. Conf. Abs. 1(2), 854-855, 1996.

Livermore, RA, et al., RRS James Clark Ross cruise JR09A report, Brit. Ant. Survey, 43pp., 1995.

Mitchell, NC, RA Livermore, R Larter, M Ligi, F Martinez, A Nankivell and Y Nogi, Sonar mapping of an axial high at a slow spreading ridge: Spiess Ridge at the Bouvet Triple Junction, InterRidge News, 4(1), p. 23, 1995.

Bull, JM, **NC Mitchell**, TA Minshull and JK Dix, Chirp sub-bottom profiling as a potential BRIDGE tool, BRIDGE Newslett., 9, 42-43, 1995.

Mitchell, NC, and JE Hughes Clarke, Characterising seafloor geology using Simrad EM1000 multibeam sonar, Oceanology Int., Conf. Proc., 2, Brighton, U.K., Spearhead Exhibitions Ltd, 1994.

Keeton, JA, and **NC Mitchell**, The interpretation of multibeam sonar images, BRIDGE News., 5, 1994.

Mitchell, NC, E McAllister, C Flewellen, and C Walker (conv.) Sidescan sonar, A BRIDGE workshop, Workshop report, BRIDGE office, 1994. Including appendix: Methods to assist the sidescan sonar image interpretation.

Hughes Clarke, JE, LA Mayer, **NC Mitchell**, A Godin and G Costello, Processing and interpretation of 95 kHz backscatter data from shallow-water multibeam sonars, IEEE: *Oceans '93 Proc*., II, 437-442, 1993.

Mitchell, NC, Attempts to determine acoustic attenuation in sediment drapes overlying rocky surfaces from sidescan sonar imagery, in NG Pace & DN Langhorne (eds), Acoustic classification and mapping of the seabed, Proc. Inst. Acoust., 15(2), 327-334, Inst. Acoust., U.K., 1993.

Mitchell, NC, A sound idea for estimating sediment thickness? Ocean Challenge, 3, 36-39, 1992 (Challenger Society).

Mitchell, NC, 1990, The variation of backscatter with incidence angle for sonar data over MOR volcanics, 175-179 in GM Purdy and GJ Fryer (conv.): Proc. Workshop on the Physical Properties of Volcanic Seafloor, Woods Hole Oceanogr. Inst., Mass., 24-26 Apr. 1990.

Detrick, RS, et al., Hawaiian flexural moat survey, R/V Thomas Washington cruise report (Roundabout Expedition Leg 2), 1988.

Parson, LM, et al., RRS Charles Darwin cruise 23/87, 13 May - 11 June 1987, Geophysical investigation of the Indian Ocean triple junction, Inst. Oceanogr. Sci. Deacon Lab. cruise rep. 201, 24pp., 1987.

Supervision and advisory roles

Post-doctoral researchers

Diederik Liebrand. Paleoceanography of the Plio-Pleistocene Red Sea

Nathalie Dubois. Paleoceanography of the central equatorial and south Pacific based on seismic and scientific drilling data.

Dina Vachtman continental slope geomorphology (with Rob Gawthorpe, Bergen).

Rui Quartau (Portugal, FCT-funded research fellowship project)

John Stevenson (Manchester, with P Rosin, Cardiff)

Xianfang Sun (Cardiff, co-advisor with P Rosin (funding: EPSRC))

Javier Escartin & Peter Slootweg, Mid-Atlantic Ridge tectonics (Durham, co-advisor with RC Searle & PA Cowie (funding: NERC))

PhD students

Okwokwo Oke, A geophysical study of structures in the Red Sea using potential fields, seismic and bathymetry data, Nigerian funding.

Yu-Chun Chang, Threats from submarine landslides around Atlantic volcanic islands and implications for sediment and carbon transfer, Taiwan-funded (supervised with Thor Hansteen & R Quartau). Now at JAMSTEC, Japan.

Zhongwei Zhao, Wave-influenced deposits on the narrow shelves of volcanic ocean islands (Azores; PLATMAR project), self- and China-funded. Now at South China Sea Institute of Oceanology, Guangzhou, PR China.

Rickbir Bahia, The evolution of surface topography on Mars from channel networks (co-supervisor with M Jones, Manchester), STFC-funded. Now at European Space Agency.

Wen Shi, Salt flowage in the Red Sea, self-funded. Now at Institute of Geophysics, Beijing, PR China

Karina Hernandez, Salt tectonics: North Sea and Gulf of Mexico (with M Huuse, Manchester), Funding: IMP (Mexico). Now with the IMP.

Jenny Gales, Morphology of the submarine slopes of Antarctica, completed (co-supervisor with R Larter & D Shoosmith, BAS, Cambridge (funding: NERC)). Now lecturer at Plymouth University.

Rajasmita Goswami, Links between onshore erosion and offshore marine geology of the Ionian Sea, completed (with S Brocklehurst (Manchester), A Argnani, CNR Bologna) (funding: ORS). Now with Shell.

Katrien van Landeghem, Active sediment movements and Quaternary Geology, Celtic Sea, completed (co-supervisor with A Wheeler, UC Cork, (funding: INTERREG/ERDF)). Now lecturer at Bangor University, Wales.

Thierry Schmitt, Sediment dynamics in the Bristol Channel and Severn Estuary, completed (with ATS Ramsay (funding: Cardiff University)). Now with the SHOM (France).

Rochelle Stretch, Growth of giant volcanic ridges, completed (co-supervisor with C Oppenheimer (funding: Cambridge/self))

Competitive research and teaching funding

(PDRA = postdoctoral research assistant, PhD = studentship)

ICDP: Probing the Lithosphere Under Samoa: A 2500-meter drill core to explore hotspot-trench interactions, continental recycling, the deep biosphere, and geothermal resources (PLUS) (M Jackson et al.; 2024; $88k)

Univ Manchester: Open Research Accelerator Fund: Improving Transparency, Accessibility, and Reusability of Scientific Ocean Drilling Data (D Liebrand, Mitchell; 2023; £20k inc PDRA)

NERC Discipline Hopping (Manchester): Rethinking Red Sea sea-level records using exchange flow models (D Liebrand, G Lane-Serff and Mitchell; 2022; £29k inc PDRA)

NERC NE/X002519/1 An alliance to address the Red Sea's record of past global climate and earthquakes (Mitchell with M Kaminski, S Jonsson, I Hall; 2022; £100k)

NERC NE/X006298/1 Mechanics of dyke intrusion in oblique-slip tectonic settings: Unravelling the causes of the March 2022 rare seismic swarm in São Jorge Island, Azores (Ferreira, Mitchell, Ramalho; 2022; £100k)

NERC NE/W009943/1 CARAPACE: Calcite-Aragonite transition Across Pacific Atolls from the Cretaceous to the Eocene (John et al.; 2022; £709k inc PDRA)

NERC NEIF2330.0920 Frequency of submarine landslides and eruptions in volcanic islands: the Azores (Chang, Mitchell, Hansteen; 2021; £9,385)

NERC NE/T014814/1 The seismic crisis unfolding in the Azores: earthquakes accompanying a rarely observed submarine eruption? (Mitchell; 2020; £65,000)

Scientific Committee on Ocean Research Support for early-career scientists from developing countries to join InterRidge workshop on seamounts and islands (Mitchell, Quartau, Beier; 2019; $5,000)

InterRidge Working group on seamounts and islands near mid-ocean ridges (Mitchell, Quartau, Beier and 29

others; 2018-; $10,000 workshop support)

Royal Society IES/R3/170081 International Exchanges: Surface processes accompanying continental fragmentation – new geophysical and geological evidence from the Red Sea and the Azores (collaboration with GEOMAR, Germany; 2018-2020; £10,188)

Univ. Manchester: Eco-Innovation Voucher (collaboration with British Geological Survey and British Antarctic Survey; 2016-2017; £4,200)

Univ. Manchester: Cryosphere Research At Manchester (CRAM) (Marie Curie Innovative Training Networks bid; L Edwards lead PI; 2016; £14,783)

FCT (Portugal): Evolution of volcanic insular shelves (Santa Maria Is., Azores) (Quartau lead PI; 2016-; €200k)

Univ. Manchester: Eco-Innovation Voucher (collaboration with Marinespace and Teamsurv; 2016; £3,000)

Univ. Manchester: Hands-on experience with industry-standard geophysical survey equipment in undergraduate module EART20271 (Geophysical Techniques) (2015; £19,943)

Univ. Manchester: The Cryosphere Research At Manchester (CRAM) group development and interdisciplinary research bid initiative (workshop funding) (Edwards, Mitchell, Dorch, van Dongen, Huuse, Bardgett; 2015; £26,033)

Univ. Manchester: Geophysical and monitoring equipment for Environmental, Geoscience, Geography-Geology and Petroleum Geology Degrees (2012; £30,489.95)

Statoil: Quantitative Geomorphology of Submarine Channel Networks on Continental Margins (Gawthorpe, Mitchell; 2010-2013; £153,189 Manchester element)

NERC/UKIODP NE/J005282/1: Sediment accumulation below the unproductive South Pacific Gyre (IODP expedition 329) with the highly productive central equatorial Pacific (Mitchell with Dubois Recognised Researcher; 2011-12, £19,499)

NERC/UKIODP NE/I017895/1: Comparing sediment accumulation below the unproductive South Pacific Gyre (IODP expedition 329) with the highly productive central equatorial Pacific (Mitchell with Dubois Recognised Researcher; 2010-12; £11,403)

NERC NE/I52880X/1: Evaporite flowage in the early South Atlantic and salt deformation rates and mechanisms (Mitchell; 2010-11; £8466)

World University Network: Earth Surface Sedimentary Flow Processes (Keylock, Parsons, Mitchell, Best; 2007-8; facilities)

NERC NE/G523539/1: Geomorphologic modelling of submarine slopes Antarctica (Larter, Mitchell, Shoosmith; 2007-10; studentship)

NERC: Lava flowing into lake, Thingvallavatn, Iceland (Mitchell, Oppenheimer, Pinkerton & 2 others; 2007; NERC aircraft LiDAR flight IPY07-02)

IODP: Cenozoic Pacific Equatorial Age Transect – Following the Palaeo-equator (Pälike, Lyle, Moore, Mitchell, Rea; 2007-; drillship leg)

ACS/Petroleum Res Fund #43994-AC8: Morphologic modelling of continental slopes (Mitchell, Hovius, Huthnance; 2008; $80,000)

NERC/UKIODP NE/C508985/2: The equatorial Pacific record of Earth's climate and palaeoceanography (Mitchell, Lear, Palike, Lyle; 2006-2008; £215,550)

EPSRC EP/C007972/1: Filtering and processing of irregular meshes with uncertainties (Rosin, Martin, Mitchell; 2005-2008; £260,742)

Royal Society: Conference travel funds (2004; £1400)

EU/INTERREG/WEFO: HABMAP- HABitat MAPping for conservation and management of the Southern Irish Sea (Ramsay, Wilson coordinators; 2004-2006; £412,384)

Cardiff University: Research Travel Scheme 2003/04 (2004; £2440)

British Council: Landslides, coastal erosion, shallow marine eruptions and biohabitats around the Azores volcanic islands (Mitchell, Nunes, Isidro, Borges, Franca; 2004-2005; £1000)

EuroMARGINS LEC-EMA21F: Transition from a continental to an oceanic rift: geology and biogeochemistry of the Northern Red Sea (Bonatti, Doglioni, Ligi, Mitchell, Seyler, Sichler, Stoffers; 2003-2005; €424900)

Direcção Regional da Ciência e Tecnologia, Governo Regional dos Açores & Observatório Vulcanológico e Geotérmico dos Açores: Support for multibeam sonar surveys, Azores (Nunes, Mitchell, et al; 2003; €10,050)

NERC: Submarine growth and erosion of volcanic islands (Mitchell; 2003/04; equipment pool loan of Leica DGPS)

The Gower Society: Sand movements around the dredge site on Helwick Bank (Mitchell, Ramsay, Schmitt, Vincent; 2002; £6,442)

Countryside Council for Wales: Sand movements around Helwick Sands (Mitchell; 2003; £1,000)

Hanson plc, United Marine Dredging Ltd & RMC UK: The intersection of the East Nash bank with the South Glamorgan coastline (Mitchell, Ramsay, Schmitt, Vincent; 2002,2003; £8,690)

Royal Society: Growth of Volcanic Islands (Mitchell; 2002-; £9,910)

NERC NER/E/S/2001/00408: Feasibility of 'time-lapse' seabed surveying to study movements of sand bodies in the Bristol Channel (Mitchell; 2001-2002; £5,000)

United Utilities Green Energy Ltd: Sediment dynamics in the lee of Scarweather Sands, Swansea Bay (Mitchell; 2001; £5,000)

British Council/Anglo-German ARC: Landslides and shallow marine eruptions around the Azores volcanic islands (Mitchell, Devey; 2002-2004; £4,830)

NERC/ Autosub Under Ice NER/T/S/2000/00986: Marine geological processes and sediments beneath floating ice shelves in Greenland and Antarctica using the Autosub AUV (Dowdeswell, Nienow, Mitchell, Jenkins; 2001-2005; £384,667)

HEFCW/HEFCE Joint Research Equipment Initiative NER/F/S/20/00/00146: Seabed imaging sonars for earth, environment, geohazards, coastal engineering and archaelogical research (Mitchell, Collier, Henstock & 4 others; 2001-2003; £524,317)

Joint Infrastructure Fund GR3/JIF/02: Procurement, installation and support for a multibeam echo sounder on RRS James Clark Ross, the UK ice-strengthened scientific research vessel (Dowdeswell, Larter, Watts, Livermore, Sparks, Mitchell; 1999-; £1,987,927)

EU/EASSS: Tectonic and pressure controls on the growth of volcanic ridges in the Azores (Bonatti, Ligi, Mirani, Mitchell; 1999; Access to TOBI sonar system equiv. ECU 260,000)

Royal Society: Mid-ocean ridge tectonics (1996-2004; University Research Fellowship)

EU/Training and mobility of researchers - access to large scale facilities: Nautile dives on the Mid-Atlantic Ridge (grant to IFREMER)

Royal Society: Neotectonics in Icelandic lakes (Bull, Minshull, Mitchell; £10,000)

NERC/BRIDGE GST/02/1016: Measuring Tectonic Strain at Slow Spreading Ridges (Searle, Cowie, Mitchell; 1995-1998; £212,522 & £325,120 seatime)

NERC GR3/8900: The Tectonic Evolution of the Bouvet Triple Junction (Mitchell, Livermore; 1993-1996; £149,764)

NERC GT5/92/GS/5: Quantitative Studies With Swath Mapping Sonar (1992-1997; Research Fellowship)

NSERC of Canada: Quantitative Inferences on the Materials of the Seafloor From Mapping Sonar Data (1993 (7 months); International Research Fellowship)

Royal Commission for the Exhibition of 1851: Tectonics of Mid-Ocean Ridges (1990-1991; Research Fellowship)

Scientific sessions convened

InterRidge Working Group on Seamounts and Islands Associated with Mid-Ocean Ridges, Lisbon September 2019.
EGU 2007 Submarine morphology.
EGU 2005, 2006 Submarine Erosion.
EUG 2001 Growth of volcanic structures in the oceans, from ridge crests to the plate interiors.
Fall AGU meeting:
Southern ocean ridges, 1995.
Near bottom measurements of oceanic crust, 1996.
BRIDGE workshop on sonar image interpretation, 1994.

Recent invited talks (2010-)

2024 Drifters Virtual Get-Together (RHBNC hosted)
2023 University College, London
2022 Azores Summer School
2022 Rifts and Rifted Margins Seminars
2022 InterRidge
2021 IPGP, Paris, France
2020 Khalifa University, United Arab Emirates

2020 Instituto Dom Luiz, Lisboa, Portugal
2020 Universidade Federal do Rio Grande do Norte, Brazil
2020 Shropshire Geological Society
2019 King Abdullah University of Science and Technology
2019 GEOMAR, Kiel, Germany
2016 KIOSt International Science Seminar (Korea)
2013 Saudi Geological Survey workshop on the Red Sea, Jeddah
2011 King Abdullah University of Science and Technology
2010 INETI (Portuguese Geological Survey)

Procurement of research and teaching equipment

2012, Allied Assoc. Tigre 62-electrode resistivity array and software, University of Manchester (£18k)
2001, Reson 8160 & 8111 portable multibeam sonars and associated equipment (£324k).
2001, project board for swath system and sediment profiler for Autosub, the NERC Autonomous Underwater Vehicle (£200k).
2000, project board for a deep-water multibeam echo-sounder and sediment profiler on RRS James Clark Ross (£2M).

Marine Fieldwork (PS: principal Scientist)

1987 *RRS Charles Darwin* cruise to the Indian Ocean Triple Junction. GLORIA side-scan sonar, bathymetry, gravity, magnetics and reflection seismics.

1988 *RV Thomas Washington* cruise to study the onlap and offlap sequences in the sediments of the flexural moat of Hawaii, using single channel reflection and refraction seismics, piston coring, rock dredging, and multibeam.

1990 *RV Point Sur* cruise investigating the sedimentary system of the Monterey Canyon with deeply-towed dual-frequency side-scan sonar.

1992 *RV Ocean Surveyor* commercial telecom cable route survey on the shelf and slope offshore Argentina, Uruguay and Brazil. High resolution sidescan sonars, sediment profilers, sampling and Simrad multibeam.

1993 *CSS Frederick G. Creed* survey in the approaches to Halifax harbour, Nova Scotia, for seafloor classification and hydrographic research. High resolution multibeam, gravity coring and photography.

1995 *RRS James Clark Ross* 7-week survey of the Bouvet triple junction, Scotia back-arc spreading centre, South Sandwich trench and South America-Antarctica Ridge. Hawaii-MR1 sidescan sonar, seismics.

1996 *RRS Charles Darwin* deep-tow survey of faulting on the Mid-Atlantic Ridge using TOBI - sidescan sonar, swath bathymetry, 3-component magnetics and gravity.

1996 *RV Nadir* deep submersible (Nautile) survey of the Mid-Atlantic Ridge (visual observations, sampling, three-component magnetics and seafloor gravity).

1996 Small boat survey of Thingvallavatn, a lake crossing the Mid-Atlantic Ridge rift valley in western Iceland, using a Chirp sediment profiler and side-scan sonar.

1997 *RRS Charles Darwin* deep-tow survey of landslides and subsidence of the Canary Islands using TOBI sidescan sonar, swath bathymetry, seismics and dredges.

1998 *RV Meteor* rock sampling the Mid-Atlantic Ridge for evidence of the Ascension plume.

1999 *RV Urania* TOBI sidescan sonar surveying of volcanic ridges in the Azores.

2000 *RV Meteor* OBH/OBS, multibeam sonar over detachment faults on the Mid-Atlantic Ridge.

2000 *RRS James Clark Ross* transit multibeam over the Mid-Atlantic Ridge and margins of Africa and S America.

2001 Commercial tugboat *New Ross 1* trials and survey with Reson portable multibeam sonar, Bristol Channel (PS).

2002 Commercial tugboat *Strathdoon* study with Reson portable multibeam sonar of headland-connected tidal sand banks within the Bristol Channel (PS).

2003 *RV Arquipelago* surveying the coasts and slopes of the central Azores islands with Reson multibeam sonar (PS).
2005 *RV Urania* multibeam, seismic, sampling, Red Sea.
2005 *RV Celtic Voyager*, multibeam, sampling, Celtic Sea (PS).
2006 *RV Roger Revelle*, geophysics, coring, Central Pacific (co-PS).
2006 *RV Urania* multibeam, seismic, chirp, Ionian Sea incl. Etna, Straights of Messina.
2013 *RV El Puma* multibeam, chirp, Pacific coast of Mexico.
2018 *RV Noctiluca* multibeam, Swansea Bay & Gower.
2018 *RV Pelagia* multibeam, sparker seismics, magnetics, coring Sudanese Red Sea.
2021 *RV Mary Anning* Chirp seismics, Swansea Bay & Gower.

SERVICE

Professional service

Ridge Symposium 2021 online seminar series (https://ridgeseminarseries.wordpress.com).
Geological Society London Research Grants Committee 2015-2017
NERC Peer Review Committee for Earth Sciences October 2001-03 and Peer Review College 2003-4.
NERC Science Advisory Panel for UKIODP, 2008-2011.
ECORD representative on IODP Site Survey Panel 2008-2011 and Science Evaluation Panel June 2014.
NERC Pool of Technologies Reviewers, 2011-2012.
Schmidt Ocean Institute 4500 m ROV Science Advisory Group.
NERC Rock Store working group 2023.

Referee of research grant and infrastructure applications for NSF (US), NERC (UK), Royal Society (UK), Leverhulme Trust (UK), DAAD &

DFG (Germany), GNV (Italy), Science Foundation Ireland, Israel Science Foundation, Netherlands Organisation for Scientific Research, Royal Society of New Zealand, Schmidt Ocean Institute, Singapore National Research Foundation, InterRidge, United Arab Emirates University and Southampton Oceanography Centre (European Access to Seafloor Survey Systems).

Reviewer of articles for:
Science, Nature, Geology, J. Geophysical Research, G3, Geophys. J. Int., Geosphere, Bull. Volcanol., Earth Planet. Sci. Lett. J. Sed. Res., Geophys. Res. Lett., Sed. Geol., Marine Geophys. Res., Appl. Acoust., Marine Geol., Earth Sci. Rev., Current Science, The IEEE J. Ocean. Eng., Basin Res., IEEE Trans. Geosci. Remote Sensing, Geological Society, London, Society for Underwater Technology, Remote Sensing, J. Marine Syst., Comp. Geosci., J. Afr. Earth Sci., J. Paleolimonol., Atm. Sci. Letts., Oceanography, PLOS-ONE, Deep Sea Res., Paleoceanography, Pure & Applied Geophys., Marine Geod., Quat. Sci. Rev., Terra Nova, Tectonophys., Geomorph., Progr. Ocean., Frontiers Earth Sci., Geosciences, Ital. J. Geosciences., Aust J Earth Sci., Volcanica, Progr. Earth Plan. Sci.

Editorial Board member for Marine Geology (to 2023) and Proceedings of the Geologists' Association, UK.

AGU Editor's Citation for Excellence in Refereeing for J Geophys Res -Solid Earth, 2000.

Referee for various tenure and promotion committees, including the University of Hawai'i, the 2002 Shanti Swarup Bhatnagar Prize, Council of Scientific and Industrial Research (India), AQU Catalonia, Spain, Petroleum Institute, Abu Dhabi, Leibniz Institute for Baltic Sea Research in Warnemünde, Germany, Seoul National University, Korea.

University administration (Manchester)

Chair, staff board for the School of Earth, Atmospheric and Environmental Sciences 2010-14.
Member, executive committee, SEAES 2010-14.
Ethics Panel, SEAES 2010-14.
Periodic and Institutional Review of Central European University, Budapest, Hungary 2014 (panel member).
Manchester Faculty of Engineering and Physical Sciences, teaching Peer Review College, 2014-
Manchester DEES, year 3 coordinator for Geoscience BSc degrees.
Manchester DEES, lead for “Geology-Geography” degree 2020 and "Geology and Physical Geography" pathway of new degree 2018-.
Interview panels for Earth Sciences, Chemical Engineering and Physical Geography.

University administration (external)

Periodic review of BSc in Earth Sciences, Sultan Qaboos University, 2019.
External examiner for MSc in Applied Marine Geoscience, Bangor University, 2014-2017.
External examiner for BSc in Geophys. with Geology, University of Durham, 2013-2016.

Teaching, outreach and recruitment preparation

Senior Fellow of the Higher Education Academy (UK) awarded November 2019. Year 1 of Postgraduate Certificate in University Teaching and Learning (Cardiff Univ 2003), GEES Workshop for Starting Lecturers (Birmingham Univ 2003), Flipping the Classroom (Manchester Univ 2014), Teaching with mobile devices (Man Univ 2014), Public Engagement in the GEES Disciplines (Man Met Univ 2012), First Aid (Man Univ 2007, 2014, 2016), Interviewing Techniques (Cardiff Univ 2001), Diversity Awareness and Prevent, Academic Advising, Data Protection (Man Univ).

PhD examinations (**ext**ernal or **int**ernal)

Chisomaga A Opara-Nestor (ext, Birmingham, 2022)
Natasha Chapplow (ext, Durham, 2022)
Song Jing (ext, Cardiff, 2021)
Arne Fuhrmann (int, Manchester, 2020)
Sally Watson (ext, U Tasmania, 2018)
Elisabeth Muller (ext, Oxford, 2017)
Joshua Allin (ext, Southampton, 2016)
Rachel Lamb (int, Manchester, 2016)
Ayca Dogrul Selver (int., Manchester, 2014)
Abigail Hackston (int., Manchester, 2013)
Phai Duy Do (int., Manchester, 2012)
Chris Cooper (ext., Liverpool, 2011)
Xavier van Lanen (int., Manchester, 2011)
Samer Ghadeer (int., Manchester, 2011)
David Foster (int., Manchester, 2009)
Aaron Micallef (ext., Southampton, 2007)

Membership of scientific societies

Geological Society (Fellow; Marine Studies Group web and Geoscientist correspondent until 2006; research grants committee 2015-)
The Shropshire Geological Society (honorary member).

Wider engagement of science with society

One of the first 6 Research Fellows to take part in Royal Society scheme linking scientists with Members of Parliament (2001). Prompted parliamentary question raised by Julie Morgan MP in December 2003 concerning NERC funding criteria affecting Wales.
BBC Newsround interview explaining pressure associated with Mariana Trench dives (20/03/2012).
Posting on the educational science website Ask a Scientist (www.askascientist.co.uk) concerning the Malasia Airlines MH370 search, 2014.
Posting on the British Council website concerning joint UK-German research on the Red Sea, 2017.
Science in the National Park participant, 2012 (ESRC sponsored event at Longshaw, Peak District).
Royal Society meetings on Impact of Science in Government and National Forum For Science (public-science dialogue meeting) (2002).
Public Science Presentations: Wolfson College, Oxford, 1999, Oxford school, 1999. Oxford Geology

Group, 2000, Connell 6th Fm College, Manchester 2014, St Bede's (prep school), Manchester 2014.

Knowledge transfer

The author's work has been primarily academic research not aimed at providing commercial applications. He has, however, worked for a year within a company concerned with offshore surveying, where he helped develop software solutions for visualising seabed sonar data. In Cardiff University, he has developed a project for a PhD student to study sand movements around tidal sand banks off the South Wales coast being dredged for commercial aggregates, in part to address public concerns about their possible impact on local beach sands. The project involved a NERC Connect A grant and attracted funding from the aggregates industry, a power company, the Countryside Council for Wales and the Gower Society. A continuation of this type of work in coastal geology was later funded by INTERREG, providing a stipend and fees for a second PhD student as well as seatime.

TEACHING

Presently (University of Manchester) contributions towards:
Year 3 Tectonics in Earth's Oceans and Continents (EART32301).
Year 2 Environmental Fieldweek (EART20042) - practical experience and field experiment using geophysical methods.
Year 2 Tutorials for geology, physical geography or environmental undergraduates.

Sabbatical replacement teaching:
MSc Measuring & Predicting 1 (EART60061)
Year 3 Surface Processes (EART30322) 2014.
Year 2 Geostatistics (EART20922) 2011, for Petroleum Engineers.
Year 3 Field trip to Tenerife (EART30012), for Environmental Scientists.
Year 2 Geophysical Techniques, 2007 (EART20271).
Year 3 Seismic Hazards (EART30242).
Year 2 Geospatial Techniques (EART29102)

Previously:
Year 3 Marine Geology and Geophysics (EART30302) - volcanic, tectonic, sedimentary, oceanographic processes occurring in the oceans everywhere from spreading ridges to the coasts.
MSc in Pollution and Environmental Control (two weeks of core Measuring and Predicting (EART60101))
Year 2 Integrated Subsurface Systems (EART20020) for Petroleum Engineers — submarine channels - their geometries using online geophysical data on modern examples and scientific drilling data.
Year 2 Geophysical Techniques (EART20271) - practical geophysical methods for geologists, environmental scientists and physical geographers (module leader).
Year 3 Seismic and volcanic hazards (EART30242) - seismic hazards component to geologists and physical geographers.
Yr 3 course in Cardiff on quantitative geomorphology for EA3011 Earth Surface Processes comprising 12 lectures for 60 students. Topics include: diffusive lowland landscapes, stream-bed erosion laws and climate-tectonics feedbacks.

Yr 2 course in Cardiff on coastal processes for EA2022 Environmental Science comprising 10 lectures and a guided study for 80-90 students. Topics include: waves, sediment transport, cliff erosion, estuaries, deltas and beach processes, including modern topics such as self organisation and morphologic-process feedback.
Yr 2 & 3 course on acoustic surveying methods in Cardiff. EA0274 Coastal Hydrography & MS3231 Coastal Geology, 8 lectures, 3 practicals and exams for 58 students covering: introductory underwater acoustics, sidescan sonars, multibeam echo-sounders, sediment profiling sonars & seismics.
Covered for a year 2 Plate Tectonics course for a colleague during 2005 (EA2013), including, besides the original evidence for continental drift and plate tectonics, various aspects of mid-ocean ridges, convergent margins, continental rifting.
Two-week course on deep marine sedimentary geology for the 1998 Oxford University 3rd year - 4 lectures and 2 practicals covering various aspects of gravity and current transport, carbonate sedimentation and modelling of sedimentary systems.
Two lectures for the 1999 Cambridge University M.Phil. in remote-sensing (acoustic remote-sensing and applications in marine earth sciences).

Tutorials, UCAS interviews Cardiff University, 2000-
Residential Workshop for Recently Appointed Lecturers, May 2002 (Learning and Teaching Support Network, Geography, Earth and Environ. Science).
Cardiff University Netskills Blackboard tutorial (web based class management) Dec 2002.
University meetings or training courses concerning Diversity Awareness, SENDA regulations, PhD student supervision, interview skills, learning outcomes, computer-aided assessment.
PCUTL (Cardiff lecturer training) workshops.