

Criteria for Assessment	Research Themes	CE - Exploitation in Challenging Environments			
Scientific content and merit (is it an interesting oil and gas problem?)		EIR - Environmental Impact & Regulation			
Meets NERC criteria (rather than those of another funding body e.g. EPSRC)? i.e. is clearly aligned with earth/marine science and linkage to placing earth and environmental science at the heart of oil and gas	<b>NOTE: Entries in green are re-submissions of titles approved by the Committee in previous years.</b>				
Exhibits a clear link to stated CDT research theme(s)	<b>Entries in red are reserve titles</b>				
In the event of reliance on third parties, is there evidence that the project has already obtained access to the dataset(s) required to undertake the project and achieve its objectives?			Title has final approval - satisfactory reply to Committee's comments received if relevant		
Project Title	Supervisor	Institution	Co-supervisors	Research Theme(s)	Approve?
Deformation localisation in thrust-stacked carbonates – an investigation of mechanical stratigraphy and thermal maturity	Dr Clare Bond	Aberdeen	Dr David Muirhead	MB/UH	Y
Good, bad and ugly: microbial mineralisation around hydrocarbon seeps and spills	Dr Alex Brasier	Aberdeen	Dr Stephen Bowden, Prof Graeme Paton (Biological Sciences, UoA)	EIR	Y
Volcanics, sandstones and carbonate cements	Dr Alex Brasier	Aberdeen	Dr David Muirhead, Dr Stephen Bowden	MB	N
<i>Deformation adjacent to mobile evaporite bodies – modelling approaches and outcrop examples from t</i>	<i>Prof. Rob Butler</i>	<i>Aberdeen</i>	<i>Dr. Clare Bond, Dr. Rod Graham</i>	<i>CE / MB</i>	<i>Y?</i>
Characterization and prediction of the seismic response of carbonate reservoirs using synthetic seismic modelling	Dr Enrique Gomez-Rivas	Aberdeen	Dr David Iacopini, Dr Dave Healy, T. Bover-Arnal (Univ. Barcelona), I. Lecomte (Univ. Oslo)	MB/CE/UH	N
<b>Determining the main controls on fault-associated dolomitisation and their influence on reservoir quality distribution</b>	<b>Dr Enrique Gomez-Rivas</b>	<b>Aberdeen</b>	<b>Dr Joyce Neilson, Dr Juan Diego Martín-Martín (University of Barcelona)</b>	<b>MB/CE</b>	<b>Y</b>
Towards the quantitative prediction of sandstone body connectivity within distributive fluvial systems through numerical modelling and field studies	Prof John Howell	Aberdeen	Prof Adrian Hartley, Amanda Owen	MB	Y
Enhancing sand injectite resolution using diffraction seismic imaging methods	Dr David Iacopini	Aberdeen	Prof Andrew Hurst, Evgeny Landa (Uni. of Tel Aviv)	MB/CE/UH	Y
Submarine Landslides and Mass Transport Deposits from Geohazards to Georesources: An integrated field-numerical approach	Dr Mehrdad T. Manzari	Aberdeen	Dr Vittorio Maselli, Prof Benjamin Kneller, Fabiano Gamberi (ISMAR-CNR)	CE/MB	Y
Sediment dynamics and destabilization of continental margins: predicting shelf and slope instability under a changing climate	Dr Vittorio Maselli	Aberdeen	Alex Sharples (BP), Dr Brice Rea, Mads Huuse (Uni. of Manchester)	CE/EIR	Y
High-resolution imaging of structures beneath active mud volcanoes: reconstructing fluids emission and assessing future hazards	Dr Davide Oppo	Aberdeen	Dr Luca De Siena, André Revil (Univ. Savoie Mont-Blanc), Patrice Imbert (Total)	CE	Y
The social-ecological impacts of decommissioning – exploring pathways through multi-disciplinary geo-spatial modelling, visualisation and stakeholder engagement	Dr Tavis Potts	Aberdeen	Dr David Green	EIR	Y
Microfossil records of basin evolution	Ian Boomer	Birmingham	Kirsty Edgar, Dr Sev Kender (BGS)	MB	Y

					N
Environmental Controls on High-Resolution Biostratigraphy	Tom Dunkley Jones	Birmingham	Kirsty Edgar	MB	
New Paleogene bio- and chemo-stratigraphies from key exploration areas in the equatorial Atlantic Ocean	Kirsty Edgar	Birmingham	Tom Dunkley Jones, Carina Hoorn (Uni. of Amsterdam), Farid Chemale Junior (Universidade de Brasilia)	MB	Y
Megablocks on continental margins and their potential as reservoir units	Tiago M. Alves	Cardiff	Davide Gamboa	CE/EIR	Y
Jurassic Oceanic Gateways of the North Atlantic	Tiago M. Alves	Cardiff	Stephen Hesselbo (Exeter), Tim Paraoh (BGS), Marianne Nuzzo (IGI Ltd.)	UH/MB/CE	Y
Effects of soil erosion and vegetation on the installation of buried Oil & Gas pipelines	Dr Anthony Leung	Dundee	Dr Andrew Black, Dr Glyn Bengough	CE	Y
Future Liability for Abandonment Failures	Prof. Colin T. Reid / Prof Andrea Ross	Dundee	Dr. Tom Dyer	CE	Y
Leakage Risks in Petroleum and CO <sub>2</sub> Storage Reservoirs: Shale Petrophysics	Andy Aplin	Durham	Nicola De Paola	UH / MB / CE / EIR	Y
Geomechanics in Digital Rock Analysis	Will Coombs	Durham	Gary Couples (Heriot Watt), Ed Llewelin	UH / MB	Y
Reactivated basement shear zones – the influence of lattice preferred orientation on brittle fracture propagation and Seismic anisotropy	Dr Eddie Dempsey	Durham	Prof Bob Holdsworth, Dr Stefan Nielsen, Dr Jonny Imber	UH	Y
Diagenetic evolution of the geomechanical properties of shales	Nicola De Paola	Durham	Mo Rouainia (Newcastle), Andy Aplin, Pablo Cubillas	UH / MB / CE / EIR	Y
Pore-Scale Imaging of Cross Fault Flow in High Porosity Sandstones using High Pressure-Temperature Fluid Tomography	Dr Kate Dobson	Durham	Dr Thomas Seers (Texas A&M Uni. at Qatar), Dr Branko Bijelic (Imperial)	MB	Y
Improved Short and Long Term Shale Behaviour Prediction	Prof. Chris Greenwell	Durham	Simon Matthias, Allan Twynam (BP)	MB / UH	Y
The nature, consequences and controls of deformation during superimposed rifting: the Inner Moray Firth Basin	Bob Holdsworth	Durham	John Underhill (Heriot-Watt), Prof Ken McCaffrey, Prof Dave Selby, Dr Eddie Dempsey	MB / UH	Y
Structural geology and geomechanical significance of natural fractures in overburden successions	Jonathan Imber	Durham	Will Coombs	UH / EIR	Y
Fracturing and fluid-flow in an exhumed Jurassic basin: an integrated field, microstructural, geochronological and isotopic study of vein mineralisation within mudstone-dominated successions	Jonathan Imber	Durham	Dr Nick Roberts, Dr Richard Haslam (BGS), Dr Cedric John (Imperial)	MB / UH	Y
Minimising fugitive emissions from gas transfer network by in situ characterisation of infra-structure properties	Prof. Fred Worrall	Durham	Prof. Richard Davies (Newcastle), Keith Owens (Northern Gas Networks)	EIR	Y
Improved understanding of borehole instability mechanisms through development of an enhanced visualization-numerical modelling approach	Prof. John Coggan	Exeter	Dr Matthew Eyre	UH / EIR	Y

An integrated remote sensing-numerical modelling approach for evaluation and optimisation of hydrocarbon reservoir performance	Prof. John Coggan	Exeter	Dr Mirko Francioni	UH / EIR	Y
A rapid assessment toolkit for screening the ecological impact of spilled oil	Prof. Tamara Galloway	Exeter		EIR	Y
Middle to Late Jurassic global palaeoenvironmental events in the Arabian Gulf region: chemostratigraphy, cyclostratigraphy, and sedimentology	Prof S. Hesselbo	Exeter	Dr Aisha Al Suwaidi (Petroleum Institute, Abu Dhabi, UAE), Dr Micha Ruhl (Oxford)	UH	Y
Unravelling the contributions of source terrains, palaeoclimate, and diagenesis through formation-scale changes in clay mineralogy of shale	Prof. S. Hesselbo	Exeter	Dr Kate Littler	UH / MB	Y
A fully coupled XFEM model for hydraulic fracturing in multi-phase porous media	Prof Akbar Javadi	Exeter	Prof John Coggan	UH / EIR	Y
Resilience of coralline algae to oil contamination via intricate microbial associations	Dr Heidi Burdett	Heriot-Watt	Tony Gutierrez, Lynda Webster (Marine Scotland Science), Louise O'Hara Murray (Oil & Gas UK)	EIR	Y
The Distribution and Origin of the Silica in the Non-Marine Carbonates of the Purbeck Formation, Dorset and Comparison to Silica Occurrences in Analogues in Brazil and Angola	Prof Patrick Corbett	Heriot-Watt	Dr Jim Buckman	MB / CE	Y
Prediction of flow through fractures and maximising recovery under geological uncertainty and geomechanical constraints	Dr. Vasily Demyanov	Heriot-Watt	Prof. Gary Couples, Dr. Dan Arnold	MB / CE / UH	Y
Marine oil snow (MOS) formation and its role in the fate of crude oil in NE Atlantic waters	Dr. Tony Gutierrez	Heriot-Watt	Dr. Martin Jones (Newcastle), Dr. Alejandro Gallego (MSS)	EIR	Y
<b>Bots in Rocks: Intelligent Rock Deformation for Fault Rock Petrophysical Properties</b>	<b>Dr Helen Lewis</b>	<b>Heriot-Watt</b>	<b>David Flynn, Jim Somerville</b>	<b>MB / UH</b>	<b>Y</b>
Mesozoic to Recent deep-water sediment routing in the Falkland basins: implications for reservoir distribution in a frontier exploration setting	Dr Uisdean Nicholson	Heriot-Watt	Prof Dorrik Stow, David Macdonald (Aberdeen), Dave McCarthy (BGS), John Underhill	CE	Y
Internal architecture and external geometry of sand waves and contourite-influenced deposits offshore Senegal	Dr Uisdean Nicholson	Heriot-Watt	Dorrik Stow, Dr John Clayburn (Cairn Energy), John Underhill	CE	Y
Quantifying the biological effects of precursory fluids leakage from Carbon Capture and Storage sites to optimize early warning indicators for CO2 leakage	Dr Andrew Sweetman	Heriot-Watt	Dr Mark Hartl, Prof Teresa Fernandes	EIR	Y
Evaluating the geological case for carbon dioxide gas storage capacity in depleted fields and saline aquifers	Prof. John Underhill	Heriot-Watt	Dr Rachel Jamieson		Y
Tectono-Stratigraphic Development of the Rona Ridge, Faroe-Shetland Basin	Prof. John Underhill	Heriot-Watt	Rachel Jamieson, Caroline Gill (Shell)	MB / CE	Y
Do numerical models produce realistic fault evolution patterns?	Dr Rebecca Bell	Imperial	Prof Chris Jackson, Dr. John Naliboff (University of California, Davis)	MB / CE	Y
Full waveform inversion of industry data from the South Atlantic	Jenny Collier	Imperial	Jo Morgan, Lidia Lonergan, Brian Horn (ION-GX)	CE	Y
Prediction of optimum brine composition for controlled salinity waterflooding	Matthew Jackson	Imperial	Eric Mackay (Heriot-Watt), Jan Vinogradov (Aberdeen), Sebastian Geiger (Heriot-Watt)	MB	Y

Salt welds; subsurface characterisation and importance	Christopher Jackson	Imperial	Dr Maria Nikolinakou (UT Austin), Mahdi Heidari (UT Austin)	MB / CE	Y
Relay zone kinematics during continental extension; implications for rift physiography, sediment supply and reservoir deposition	Christopher Jackson	Imperial	Rebecca Bell, Joanna Faure Walker (UCL), Gerald Roberts (Birkbeck)	MB / CE	Y
The effects of Salt Tectonics in the evolution of a Fold and Thrust Belt	Prof Rodney Graham	Imperial	Dr Lidia Lonergan, Dr Jean-Claude Ringenbach (Total), Prof Jean-Paul Callot (Uni. of Pau), Prof Rob Butler (Aberdeen)	CE	Y
Determining the magnetic signature of hydrocarbon-rich environments: A numerical approach	Dr Adrian Muxworthy	Imperial	Prof. Wyn Williams (Edinburgh)	MB	N
Continental Uplift and Erosion From Drainage Patterns: Predicting Sedimentary Flux to Passive Margins	Gareth Roberts	Imperial		MB / CE	Y
Dynamic hot water assisted recovery of heavy oil	Prof Mark Sephton	Imperial	Prof Dominik Weiss	UH	N
The effect of crude oil coating on the removal capacity of marine sediments for toxic elements	Prof Dominik Weiss	Imperial	Prof Mark Sephton, Prof Scott Fendorf (Stanford)	EIR	N
Controls upon facies distribution and cyclicity in aeolian systems: implications for successful exploration and development in a mature North Sea basin	Stuart Clarke	Keele	Dr Philip Richards (BGS), Dr Steve Rogers	MB	Y
Structural, stratigraphic and geodynamic controls on the evolution of the Carboniferous succession of northern England and southern Scotland	Dr Stuart Egan	Keele	Dr Graham Leslie (BGS). Dr Stuart Clarke	MB / EIR	Y
Biostratigraphy, Chemostratigraphy and Astrochronology of Mid-Triassic (Anisian to Carnian) carbonate successions of the western Tethyan Realm: Implications for high-resolution intra- and inter-carbonate reservoir correlations	Dr Michael Montenari	Keele	Prof. Annette Götz		N
Developing protocols to construct high-resolution 3D petroleum reservoir outcrop analogues	Dr Jamie Pringle	Keele	Dr. Dominic Tatum (Heriot-Watt)	UH / MB	Y
Geological Uncertainty of CO <sub>2</sub> -EOR in North Sea Tertiary Oil Fields	Masoud Babaei	Manchester	Jonathan Redfern, Mads Huuse, Martyn Quinn (BGS)	MB	Y
Application of Artificial Intelligence (AI) for pattern recognition and reconstruction in petroleum reservoir modelling.	Dr David Hodgetts	Manchester	Dr Emma Finch	MB / UH	Y
Integrated subsurface characterization of a basin-scale carbon reservoir target	Dr Mads Huuse	Manchester	Jonathan Redfern, Margaret Stewart (BGS), Christian Hermanrud (Statoil - tbc)	MB / EIR	Y
Basin-scale variability of mudstone in structurally-controlled basins	Rhodri Jerrett	Manchester	Steven Flint, Julian Mecklenburgh	MB	Y
Spatio-temporal evolution of petrophysical properties of carbonate rocks during water flooding - multiscale modelling and experiments	Dr Vahid Joekar-Niesar	Manchester	Dr Cathy Hollis, Prof Sebastian Geiger (Heriot-Watt)	MB	Y
Discerning halokinetic from autocyclic sequences in deep-marine sedimentary systems	Dr Ian Kane	Manchester	Prof. Steve Flint, Prof Chris Jackson (Imperial), Prof David Hodgson (Leeds)	MB	Y
Linking permeability and seismic properties of shales	Dr. Julian Mecklenburgh	Manchester	Prof. Ernest Rutter, Andrey Jivkov	UH	Y

Pressure dependent permeability of chalk	Dr. Julian Mecklenburgh	Manchester	Prof. Ernest Rutter, Andrey Jivkov, Nick Hammid (DTU, Denmark)	MB	Y
Diagenesis and reservoir potential of continental carbonates: Cretaceous of the South Atlantic rift	Stefan Schroeder	Manchester	Cathy Hollis, Dr Richard Dixon (BP), Dr Ian Sharp (Statoil)	CE	Y
Removing organic contaminants from oil/gas waste waters	B. Van Dongen	Manchester	S. Boulton, R. Wogelius, N. Brown & A. Nabeerasol (Arvia Techn.Ltd)	EIR	Y
The role of asphaltene in emulsion stabilisation formed by ocean oil spills	Dr. Geoffrey Abbott	Newcastle	Dr. Nicholas Parker	EIR	Y
How depositional properties dictate the early diagenetic pathways and reservoir quality – integrating outcrop examples, modern analogues to pore-scale observations	Dr Sanem Acikalin	Newcastle	Prof Richard Worden (Liverpool), Prof Cees Van Der Land	EIR	Y
Mobilisation and transformation of metals from the reservoir for enhanced oil recovery and upstream refining	Prof Joe Wood (Birmingham)	Nottingham / Birmingham	Prof Lynne Macaskie (Birmingham), Prof Sean Rigby (Nottingham)	UH / MB / EIR	N
Harnessing the natural conductivity of the sand-pack for enhanced oil recovery and upgrading	Prof Joe Wood (Birmingham)	Nottingham / Birmingham	Prof Sean Rigby (Nottingham)	UH / MB / EIR	N
Unlocking Natural Catalysis in Oilsands for Effective Oil Upgrading	Joe Wood	Nottingham / Birmingham	Dr Sean Rigby, Nottingham; Prof. Lynne Macaskie, Birmingham		Y
Efficient local-scale modelling of wave propagation in complex axisymmetric media	Dr Tarje Nissen-Meyer	Oxford	Prof Johan Robertsson (ETH Zurich)	CE	Y?
Exploiting sparse structures in seismic modelling and inversion	Tarje Nissen-Meyer	Oxford	Karin Sigloch		Y
Calcite-Aragonite Seas and porosity prediction: A New Approach	Rosalind Rickaby	Oxford	Hugh Jenkyns, Andy Gale (University of Portsmouth)	UH	Y
Determining the age of oils using flowering plant biomarkers	Stuart Robinson	Oxford	Erdem Idiz	CE	Y
Impact of early salt tectonic processes on Post-Permian Basin Evolution and Mesozoic Petroleum Systems in the Southern North Sea	Jürgen Adam	Royal Holloway	Dr Nicola Scarselli	MB	Y
Sedimentary response of shallow- and deep-marine depositional systems developed in tectonically controlled elongate/narrow basins, based on outcrop and subsurface data	Domenico Chiarella	Royal Holloway	Javier F. Hernandez-Molina, Sergio G. Longhitano (Uni. of Basilicata - Italy)	MB	Y
4D development of transform dominated passive margins	Prof Ken McClay	Royal Holloway	Dr Nicola Scarselli, Prof. Martin Insley (Tullow Oil, London)	CE	Y
Integrated assessment of the hydrocarbon potential of fault-degradation complexes	Dr Nicola Scarselli	Royal Holloway	Prof Ken McClay, Prof. Martin Insley (Tullow Oil, London), Dr. Oriol Ferrer (Uni. of Barcelona)	MB / CE	Y
Clastic Shelf Plays, Reservoirs and Seals: New insights through the correlation of high resolution seismic imaging of Quaternary and terrestrial analogues	Justin Dix	Southampton	Esther Sumner		Y
Controlled source electromagnetic data analysis to evaluate potential fluid flow pathways associated with carbon capture and storage sites	Dr. Romina Gehrmann	Southampton	Prof Tim Minshull, Prof Jon Bull	EIR	Y

Optimising the value of near-surface seismic reflection data	Prof Tim Henstock	Southampton	Dr Mark Vardy	EIR	Y
Full Waveform Inversion of the Atlantic Seafloor from 0-80 My	Prof. Catherine Rychert	Southampton	Dr. Nicholas Harmon	CE	Y
How likely is beyond-design-basis earthquake shaking for UK oil and gas installations?	John Douglas	Strathclyde	Zoe Shipton	UH / EIR / MB	Y
Alternative anti-biofouling strategies: selecting the path of least resistance	Prof Vernon Phoenix	Strathclyde	Prof Bob Kalin, Dr Charles Knapp	UH / EIR	Y
Structural and passive seismic data fusion for the detection of fluid migration pathways in the overburden	Dr Stella Pytharouli	Strathclyde	Prof. Rebecca Lunn, Prof Zoe Shipton	EIR	Y