Oliver Duffy

Professional Summary

March 12, 2024

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Professional Preparation

Academic Background

PhD, Basin Analysis: School of Earth, Atmospheric and Environmental Geosciences, University of Manchester, June 2012

BSc (Hons), Geology: School of Earth, Atmospheric and Environmental Sciences, University of Manchester, June 2007

Professional Appointments

Research Scientist, Bureau of Economic Geology, The University of Texas at Austin (September 2022-Present)

Research Associate, Bureau of Economic Geology, The University of Texas at Austin (March 2015-Present)

Post-doctoral Research Associate (Structural Evolution of Multiphase Rift Basins), Imperial College London (September 2012-February 2015)

Research Associate (Tectono-stratigraphic Evolution of the Gulf of Mexico), University of Manchester (March-August 2013)

Theses

Tectonic, Stratigraphic, and Geomorphic Interactions and Salt Influence in Rift Basins, University of Manchester, 2012, 182 p.

Areas of Expertise

Areas of Expertise

Fault Geometry and Network Evolution

Rift Sediment Routing Systems

Salt Tectonics

Salt Tectonics and Relevance to Energy Transition Technologies

Seismic Interpretation

Structural Geology

Tectono-stratigraphic Evolution of Rift Basins

Awards

Awards and Honorary Societies

2019 Tinker Family BEG Publication Award for Exemplary Publication of Scientific or Economic

Impact: "Structural evolution of salt-influenced fold-and-thrust belts: a synthesis and new insights from basins containing isolated salt diapirs," Journal of Structural Geology, 2018, v. 11, p 206-221.

2022 Robert Mitchum Award for best paper published in Basin Research journal in 2021, 2022

Midland Valley Structural Prize: Award for Best Worldwide Postgraduate Publication in the Field of Structural Geology, 2013

AAPG Annual Conference Student Poster Prize (4th place), Denver, Colorado, 2009

Accenture Prize for Best Final Year Student in School of Earth and Environmental Sciences, University of Manchester, 2007

Mackenzie and Guilford Prize for Best 1st Class Performance in BSc (Hons) Geology, University of Manchester, 2007

Midland Valley Prize for Best Undergraduate Structural Geology Paper, 2007

Centenary Alice and Edith Hamer Scholarship to the University of Manchester, 2004-2007

FM Broadhurst Prize for Highest Averaging Student, School of Earth, Atmospheric and Environmental Sciences, University of Manchester, 2005-2006

Publications

Peer Reviewed Journal Articles

Duffy, O. B., Gawthorpe, R. L., and Docherty, M., 2023, Tectono-stratigraphic evolution of salt-influenced normal fault systems: an example from the Coffee-Soil Fault, Danish North Sea: Journal of the Geological Society, v. 180, no. 6, article no. jgs2023-016, 20 p., http://doi.org/10.1144/jgs2023-016.

Duffy, O. B., Hudec, M. R., Peel, F., Apps, G., Bump, A., Moscardelli, L., Dooley, T. P., Fernandez, N., Bhattacharya, S., Wisian, K., and Shuster, M. W., 2023, The role of salt tectonics in the energy transition: an overview and future challenges: Tektonika, v. 1, no. 1, p. 18-48, http://doi.org/10.55575/tektonika2023.1.1.11.

Fernandez, N., Duffy, O. B., Jackson, C. A.-L., Kaus, B. J. P., Dooley, T., and Hudec, M., 2023, How fast can minibasins translate down a slope? Observations from 2D numerical models: Tektonika, v. 1, no. 2, p. 177-197, http://doi.org/10.55575/tektonika2023.1.2.22.

Duffy, O. B., Dooley, T. P., Hudec, M. R., Fernandez, N., Jackson, C. A.-L., and Soto, J. I., 2021, Principles of shortening in salt basins containing isolated minibasins: Basin Research, v. 33, no. 3, p. 2089-2117, http://doi.org/10.1111/bre.12550.

Fernandez, N., Duffy, O. B., Peel, F. J., and Hudec, M. R., 2021, Influence of minibasin obstruction on canopy dynamics in the northern Gulf of Mexico: Basin Research, v. 33, no. 1, p. 427-446, http://doi.org/10.1111/bre.12480.

Duffy, O. B., Fernandez, N., Peel, F. J., Hudec, M. R., Dooley, T. P., and Jackson, C. A.-L., 2020, Obstructed minibasins on a salt-detached slope: an example from above the Sigsbee canopy, northern Gulf of Mexico: Basin Research, v. 32, no. 3, p. 505-524, http://doi.org/10.1111/bre.12380.

Fernandez, N., Hudec, M. R., Jackson, C. A.-L., Dooley, T. P., and Duffy, O. B., 2020, The competition for salt and kinematic interactions between minibasins during density-driven subsidence: observations from numerical models: Petroleum Geoscience, v. 26, no. 1, p. 3-15, http://doi.org/10.1144/petgeo2019-051.

Jackson, C. A.-L., Duffy, O. B., Fernandez, N., Dooley, T. P., Hudec, M. R., Jackson, M. P. A., and Burg, G., 2020, The stratigraphic record of minibasin subsidence, Precaspian Basin, Kazakhstan: Basin Research, v. 32, no. 4, p. 739-763, http://doi.org/10.1111/bre.12393.

Coleman, A. J., Duffy, O. B., and Jackson, C. A.-L., 2019, Growth folds above propagating normal faults: Earth-Science Reviews, v. 196, 31 p., http://doi.org/10.1016/j.earscirev.2019.102885.

Lenhart, A., Jackson, C. A.-L., Bell, R. E., Duffy, O. B., Gawthorpe, R. L., and Fossen, H., 2019, Structural architecture and composition of crystalline basement offshore west Norway: Lithosphere, v. 11, no. 2, p. 273-293, http://doi.org/10.1130/L668.1.

Coleman, A. J., Jackson, C. A.-L., Duffy, O. B., and Nikolinakou, M. A., 2018, How, where, and when do radial faults grow near salt diapirs?: Geology, v. 46, no. 7, p. 655-658, http://doi.org/10.1130/G40338.1.

Duffy, O. B., Dooley, T. P., Hudec, M. R., Jackson, M. P. A., Fernandez, N., Jackson C. A-L., and Soto J. I., 2018, Structural evolution of salt-influenced fold-and-thrust belts: a synthesis and new insights from basins containing isolated salt diapirs: Journal of Structural Geology, v. 114, p. 206-221, http://doi.org/10.1016/j.jsg.2018.06.024.

Phillips, T. B., Jackson, C. A.-L., Bell, R. E., and Duffy, O. B., 2018, Oblique reactivation of lithosphere-scale lineaments controls rift physiography - the upper-crustal expression of the Sorgenfrei-Tornquist Zone, offshore southern Norway: Solid Earth, v. 9, p. 403-429, http://doi.org/10.5194/se-9-403-2018.

Coleman, A. J., Jackson, C. A-L., and Duffy, O. B., 2017, Balancing sub- and supra-salt strain in salt-influenced rifts: implications for extension estimates: Journal of Structural Geology, v. 102, p. 208-225, http://doi.org/10.1016/j.jsg.2017.08.006.

Duffy, O. B., Fernandez, N., Hudec, M. R., Jackson, M. P. A., Burg, G., Dooley, T. P., and Jackson, C. A-L., 2017, Lateral mobility of minibasins during shortening: Insights from the SE Precaspian Basin, Kazakhstan: Journal of Structural Geology, v. 97, p. 257-276, http://doi.org/10.1016/j.jsg.2017.02.002.

Duffy, O. B., Nixon, C. W., Bell, R. E., Jackson, C. A-L., Gawthorpe, R. L., Sanderson, D. J., and Whipp, P. S., 2017, The topology of evolving rift fault networks: single-phase vs multi-phase rifts: Journal of Structural Geology, v. 96, p. 192-202, http://doi.org/10.1016/j.jsg.2017.02.001.

Fernandez, N., Duffy, O. B., Hudec, M. R., Jackson, M. P. A., Burg, G., Jackson, C. A-L., and Dooley, T. P., 2017, The origin of salt-encased sediment packages: observations from the SE Precaspian Basin (Kazakhstan): Journal of Structural Geology, v. 97, p. 237-256, http://doi.org/10.1016/j.jsg.2017.01.008.

Phillips, T. B., Jackson, C. A-L., Bell, R. E., Duffy, O. B., and Fossen, H., 2016, Reactivation of intrabasement structures during rifting: A case study from offshore southern Norway: Journal of Structural Geology, v. 91, p. 54-73, http://doi.org/10.1016/j.jsg.2016.08.008.

Duffy, O. B., Bell, R. E., Jackson, C. A-L., Gawthorpe, R. L., and Whipp, P. S., 2015, Fault growth and interactions in a multiphase rift fault network: Horda Platform, Norwegian North Sea: Journal of Structural Geology, v. 80, p. 99-119, http://doi.org/10.1016/j.jsg.2015.08.015.

Duffy, O. B., Brocklehurst, S. H., Gawthorpe, R. L., Leeder, M. R., and Finch, E., 2015, Controls on landscape and drainage evolution in regions of distributed normal faulting: Perachora Peninsula, Corinth Rift, Central Greece: Basin Research, v. 27, p. 473-494, http://doi.org/10.1111/bre.12084.

Magee, C., Duffy, O. B., Purnell, K., Bell, R. E., Jackson, C. A-L., and Reeve, M. T., 2015, Fault-controlled fluid flow inferred from hydrothermal vents imaged in 3D seismic reflection data, offshore NW Australia: Basin Research, v. 28, no. 3, p. 299-318, http://doi.org/10.1111/bre.12111.

Reeve, M. T., Bell, R. E., Duffy, O. B., Jackson, C. A-L., and Sansom, E., 2015, The growth of non-colinear normal fault systems; What can we learn from 3D seismic reflection data?: Journal of Structural Geology, v. 70, p. 141-155, http://doi.org/10.1016/j.jsg.2014.11.007.

Osagiede, E. E., Duffy, O. B., Jackson, C. A-L., and Wrona, T, 2014, Quantifying the growth history of seismically imaged normal faults: Journal of Structural Geology, v. 66, p. 382-399, http://doi.org/10.1016/j.jsg.2014.05.021.

Duffy, O. B., Gawthorpe, R. L., Docherty, M., and Brocklehurst, S. H., 2013, Mobile evaporite controls on the structural style and evolution of rift basins: Danish Central Graben, North Sea: Basin Research, v. 25, no. 3, p. 310-330, http://doi.org/10.1111/bre.12000.

Non Peer Reviewed Journal Articles

Duffy, O. B., Moscardelli, L., Hudec, M. R., Dooley, T. P., Peel, F., Looff, Kurt, Apps, G., and Shuster, M., 2022, Potential controls on the origin, nature, and distribution of shear zones in salt stocks: salt tectonic insights with a solution mining perspective: Solution Mining Research Institute Spring 2022 Technical Conference, 25 p.

Conference Proceedings

Moscardelli, L., Duffy, O. B., Zhang, J., Andrews, J. R., and Shuster, M., 2023, Subsurface H2 storage: the role of understanding salt dome caprocks, AAPG ICE.

Duffy, O. B., Moscardelli, L., Hudec, M. R., Looff, K., Dooley, T. P., Peel, F., Apps, G., and Shuster, M., 2022, Potential controls on the origin, nature, and distribution of shear zones in salt stocks: salt tectonic insights with a solution mining perspective, Solution Mining Research Institute Spring 2022 Technical Conference, 24 p.

Duffy, O. B., Moscardelli, L., Hudec, M. R., and Shuster, M., 2021, Assessing the hydrogen storage potential of onshore Texas salt structures, GeoGulf, Austin, Tex.

Contract Reports

Peel, F., Dooley, T. P., Soto, J. I., Nikolinakou, M. A., Apps, G., Duffy, O. B., Hudec, M. R., Tollestrup, A. K., and Heidari, M., 2023, Applied Geodynamcis Laboratory (AGL) annual report to Industrial Associates (slide set 42, video): Bureau of Economic Geology, The University of Texas at Austin, Annual Report prepared for BP, Chevron, Eni, Exxonmobil and 16 other sponsors.

Dooley, T. P., Peel, F., Soto, J., Hudec, M. R., Nikolinakou, M. A., Heidari, M., Apps, G., Duffy, O. B., and Fernandez, N., 2021, Applied Geodynamics Laboratory (AGL) annual report to industrial associates (slide set 40, video): The University of Texas at Austin, Bureau of Economic Geology, annual report prepared for BP, Chevron, Eni, ExxonMobil, Petrobras, and 16 other AGL sponsors.

Duffy, O. B., Fernandez, N., Peel, F., Soto, J. I., Heidari, M., Dooley, T. P., Hudec, M. R., Nikolinakou, M. A., and Apps, G., 2020, Applied Geodynamics Laboratory (AGL) annual report to industrial associates (slide set 39, video): The University of Texas at Austin, Bureau of Economic Geology, annual report prepared for BP, Chevron, Eni, ExxonMobil, Petrobras, and 16 other AGL sponsors.

Peel, F., Dooley, T. P., Hudec, M. R., Fernandez, N., Duffy, O. B., Nikolinakou, M. A., Heidari, M., Gao, B., and Apps, G., 2019, Applied Geodynamics Laboratory (AGL) annual report to industrial associates (slide set 38): The University of Texas at Austin, Bureau of Economic Geology, annual report prepared for AGL industrial associates.

Dooley, T. P., Peel, F., Nikolinakou, M. A., Duffy, O. B., Fernandez, N., Heidari, M., Hudec, M. R., and Apps, G., 2018, 2017 Applied Geodynamics Laboratory Annual Report to industrial associates (slide set 37): Bureau of Economic Geology, The University of Texas at Austin, prepared for http://www.beg.utexas.edu/agl/sponsors.

Dooley, T. P., Peel, F., Nikolinakou, M. A., Duffy, O. B., Fernandez, N., Heidari, M., Hudec, M. R., and Apps, G., 2018, Applied Geodynamics Laboratory Contract Report to Industrial Associates 2018 (slide set 37): Bureau of Economic Geology, The University of Texas at Austin, prepared for http://www.beg.utexas.edu/agl/sponsors.

Peel, F., Dooley, T. P., Hudec, M. R., Nikolinakou, M. A., Moghadam, M. H., Fernandez, N., Duffy, O. B., and Apps, G., 2017, Applied Geodynamics Laboratory annual report to industrial associates 2017, slide set 36: Bureau of Economic Geology, The University of Texas at Austin, Annual Report prepared for Anadarko, Apache, BHP Billiton, BP, CGG, Chevron, Cobalt, Condor, ConocoPhillips, EcoPetrol, ENI, ExxonMobil, Freeport-McMoRan,Fugro, Hess, ION Geophysical, Lukoil, Maersk, Marathon, Murphy, Nexen, Noble, Pemex, Petrobras, PGS, Repsol-YPF, Rockfield, Samson, Saudi Aramco, Shell, Statoil, Stone Energy, TGS-Nopec, Total, and Woodside. CD-ROM.

Dooley, T. P., Peel, F., Curry, M, Duffy, O. B., Fernandez, N., Moghadam, M. H., Nikolinakou, M. A., Apps, G., and Hudec, M. R., 2016, Applied Geodynamics Laboratory annual report to industrial associates 2016, slide set 35: Bureau of Economic Geology, The University of Texas at Austin, Annual Report prepared for Anadarko, Apache, BHP Billiton, BP, CGG, Chevron, Cobalt, Condor, ConocoPhillips, EcoPetrol, ENI, ExxonMobil, Freeport-McMoRan,Fugro, Hess, ION Geophysical, Lukoil, Maersk, Marathon, Murphy, Nexen, Noble, Pemex, Petrobras, PGS, Repsol-YPF, Rockfield, Samson, Saudi Aramco, Shell, Statoil, Stone Energy, TGS-Nopec, Total, and Woodside. CD-ROM.

Fernandez, N., Nikolinakou, M. A., Dooley, T. P., Duffy, O. B., Moghadam, M. H., Ellis, M, Hudec, M. R., and Jackson, M.P.A., 2015, Applied Geodynamics Laboratory annual report to industrial associates 2015, slide set 34: Bureau of Economic Geology, The University of Texas at Austin, Annual Report prepared for Anadarko, Apache, BHP Billiton, BP, CGG, Chevron, Cobalt, Condor, ConocoPhillips, EcoPetrol, ENI, ExxonMobil, Freeport-McMoRan,Fugro, Hess, ION Geophysical, Lukoil, Maersk, Marathon, Murphy, Nexen, Noble, Pemex, Petrobras, PGS, Repsol-YPF, Rockfield, Samson, Saudi Aramco, Shell, Statoil, Stone Energy, TGS-Nopec, Total, and Woodside.

Published Abstracts

Dooley, T., Hudec, M., Duffy, O., and Fernandez, N., 2019, Shortening of diapir provinces: translation, tilting and rotation of minibasins in isolated minibasin systems (abs.): 2019 AAPG Annual Convention and Exhibition, San Antonio, Tex., May 19-22, 1 p.

Duffy, O. B., Fernandez, N., Peel, F. J., Hudec, M. R., Dooley, T. P., and Jackson, C. A.-L., 2019, Minibasin obstruction by base-salt welding on a salt-detached slope: an example from the northern Gulf of Mexico (abs.): Geophysical Research Abstracts, v. 21, no. EGU2019-18928, 1 p.

Duffy, O., Fernandez, N., Peel, F., Hudec, M., and Dooley, T., 2019, Minibasin obstruction by base-salt welding on a salt-detached slope: an example from the northern Gulf of Mexico (abs.): 2019 AAPG Annual Convention and Exhibition, San Antonio, Tex., May 19-22, 1 p.

Duffy, O., Fernandez, N., Peel, F., Hudec, M., Apps, G., Dunlap, D., and Jackson, C., 2019, Redirection of submarine channels by minibasin obstruction on a salt-detached slope: an example from above the Sigsbee canopy (abs.): 37th Annual GCSSEPM Foundation Perkins-Rosen Research Conference, Houston, Tex., Dec. 3-6, Program and Abstracts, p. 24.

Fernandez, N., Duffy, O., Peel, F., and Hudec, M., 2019, Differential translation of supra-canopy minibasin domains in the northern Gulf of Mexico slope (abs.): 2019 AAPG Annual Convention and Exhibition, San Antonio, Tex., May 19-22, 1 p.

Fernandez, N., Duffy, O., Peel, F., Hudec, M., Apps, G., and Jackson, C., 2019, Mass-transport complexes (MTCs) steered by minibasin obstruction and extensional breakaway on a salt-detached slope: an example from above the Sigsbee canopy (abs.): 37th Annual GCSSEPM Foundation Perkins-Rosen Research Conference, Houston, Tex., Dec. 3-6, Program and Abstracts, p. 35.

Duffy, O. B., Bell, R. E., Jackson, C.A-L., Gawthorpe, R.L., and Whipp, P. S., 2015, Dynamic Topology: A New Approach to Help Distinguish Modes of Rift Fault Network Formation? (abs.): AAPG Annual Convention and Exhibition.

Duffy, O. B., Bell, R. E., Jackson, C.A-L., Whipp, P. S., and Gawthorpe, R. L., 2015, The Growth and Interaction of Faults in Multiphase Rifts: Horda Platform, Norwegian North Sea (abs.): AAPG Annual Convention and Exhibition.

Lenhart, A., Jackson, C.A-L., Bell, R. E., Duffy, O. B., and Fossen, H., 2015, Identifying Basement Heterogeneities and Evaluating Their Influence on Normal Fault Characteristics (abs.): AAPG Annual Convention and Exhibition.

Phillips, T. B., Jackson, C.A-L., Bell, R. E., Duffy, O. B., and Fossen, H., 2015, The Influence of the Selective Reactivation of Ancient Intrabasement Thrusts on the Geometry and Evolution of Rift Systems (abs.): AAPG Annual Convention and Exhibition.

Duffy, O. B., Brocklehurst, S. H., Gawthorpe, R. L., and Finch, E., 2010, Landscape Response to Active Extensional Faulting and Multiple Local Base Levels: The Perachora Peninsula, Eastern Gulf of Corinth, Greece (abs.): AGU Fall Meeting Abstracts, v. 1.

Service

University Committees

Co-Organizer, Bureau of Economic Geology Department Seminar Series, Bureau of Economic Geology, Austin, Tex., September 2018-May 2019

Member, Editorial Board (internal and external publications), Bureau of Economic Geology, September 2022-Present

Ad Hoc Member, Tinker Family BEG Publication Award Committee 2020, Bureau of Economic Geology, Judge of Best Bureau Publication in 2019, Austin, Tex., 2020-Present

Presentations

Invited Presentations

The Role of Salt Tectonics in the Energy Transition: An Overview and Future Challenges: presented to Salt as Store, Seal, Trap, and Repository Session, presented at Energy Geoscience Conference, Aberdeen, UK, May 16-18, 2023.

The Role of Salt Tectonics on Underground Storage: presented to SPE RWTH Aachen, presented at Online, April 14, 2023.

The Subsidence and Mobility of Minibasins: presented to Shell PG/PS Forum, presented at Online Seminar, June 3, 2021.

Renaissance of North Sea Salt Tectonics: Permian and Triassic Salt Tectonics of the Central North Sea: presented to Norwegian Petroleum Directorate FORCE group (consortium of Norwegian oil companies), presented at Salt Tectonics Webinar, online webinar, December 9, 2020.

The Subsidence and Mobility of Minibasins: Insights from Natural Examples and Physical Modelling: presented to The American Association of Petroleum Geologists, presented at AAPG Salt Basins Technical Interest Group, Online Seminar, July 21, 2020.

The Subsidence and Mobility of Minibasins: A Synthesis of Recent Findings: presented to Tulane University Department of Earth and Environmental Sciences, presented at departmental seminar, New Orleans, September 6, 2019.

The Role of Salt Tectonics in the Energy Transition: An Overview and Future Challenges: presented to Multi-scale Laboratories Seminars, presented at Online, March 14, 2023-Present.

Presentations

Minibasin Context and Behavior Controls the Expression of Submarine Canyons: An Example from the Northern Gulf of Mexico: presented to IMAGE, presented at Annual Conference and Exhibition, Houston, Tex., August 30, 2023.

Deformation and stresses in layered evaporite systems: presented to Applied Geodynamics Laboratory Consortium Members, presented at Applied Geodynamics Laboratory Consortium Annual Meeting 2022, Austin, Tex., November 10-11, 2022.

The Importance of Active Rise Triggers in the Central North Sea: presented to Applied Geodynamics Laboratory Consortium Members, presented at Applied Geodynamics Laboratory Consortium Annual Meeting 2022, Austin, Texas, November 10-11, 2022.

The Role of Salt Tectonics in the Energy Transition: An Overview and Future Challenges: presented to Applied Geodynamics Laboratory Consortium Members, presented at Applied Geodynamics Laboratory Consortium Annual Meeting 2022, Austin, Texas, November 10-11, 2022.

Potential Controls on the Origin, Nature, and Distribution of Shear Zones in Salt Stocks: Salt Tectonic Insights with a Solution Mining Perspective: presented to Solution Mining Research Institute, presented at Solution Mining Research Institute Spring Technical Conference 2022, Rapid City, S. Dak., May 4, 2022.

Hydrogen Storage Potential in Salt Caverns: The Role of Salt Tectonics: presented to The University of Texas at Austin, Bureau of Economic Geology, presented at Bureau Seminar Series, Austin, Tex., December 10, 2021.

Complex secondary welding during shortening of salt walls with highly irregular salt-sediment interfaces: presented at Applied Geodynamics Laboratory Annual Meeting, Virtual, November 3-5, 2021.

Preliminary modeling of detached extension in a layered evaporite sequence (LES): impact of LES on extensional styles and diapirism: presented at Applied Geodynamics Laboratory Annual Meeting, Virtual, November 3-5, 2021.

The Origin, Nature, and Distribution of Shear Zones in Salt Stocks: presented to Applied Geodynamic Laboratory Consortium, presented at Applied Geodynamic Laboratory Annual Meeting (2021), Virtual, November 3-5, 2021.

H2 Storage Potential in Texas Salt: Early Insights: presented to GeoGulf 2021, presented at GeoGulf 2021, Austin, Texas, October 28, 2021.

Renaissance of North Sea Salt Tectonics: Late Permian and Triassic Salt Tectonics of the Central North Sea: presented to AAPG Europe, presented at Stratigraphic and Reservoir Challenges with Triassic Plays in the North Sea - Workshop, Online conference, January 26, 2021.

3D Geometries of Natural and Physically Modelled Salt Walls: Salt Stocks, Salt Sheets, and Perched Minibasins: presented to AGL Consortium, presented at AGL Annual Consortium Meeting, Online, November 11-13, 2020.

Geometry and Evolution of a Salt Wall and Flanking Minibasins in the Central North Sea: Along- and Across-Wall Variability: presented to AGL Consortium, presented at AGL Annual Consortium Meeting, Online, November 11-13, 2020.

Renaissance of North Sea Salt Tectonics: Permian and Triassic Salt Tectonics of the Central North Sea: presented to AGL Consortium, presented at AGL Annual Consortium Meeting, Online, November 11-13, 2020.

The Subsidence and Mobility of Minibasins: A Synthesis of Recent Findings: presented to Basin Research Group Seminar, presented at Imperial College London, Royal School of Mines, January 8, 2020.

Redirection of Submarine Channels by Minibasin Obstruction on a Salt-Detached Slope: an Example from Above the Sigsbee Canopy: presented to GCSSEPM Foundation, presented at 2019 Perkins-Rosen Research Conference, Noble Energy offices, Houston, Tex., December 5, 2019.

Linking the Style and Location of Lower-Slope Erosion to Salt Tectonics: presented to Applied Geodynamics Laboratory (AGL) Consortium, presented at AGL Annual Meeting, Austin, Tex., November 7-8, 2019.

Minibasin Context and Behavior Controls the Expression of Submarine Canyons: An Example from N. Gulf of Mexico: presented to Applied Geodynamics Laboratory (AGL) Consortium, presented at AGL Annual Meeting, Austin, Tex., November 7-8, 2019.

Minibasin Obstruction by Base-Salt Welding on a Salt-Detached Slope: An Example from the Northern Gulf of Mexico: presented at AAPG ACE, San Antonio, Tex., May 19-22, 2019.

Lateral Mobility of Minibasins During Shortening: Insights from the SE Precaspian Basin, Kazakhstan: presented to AAPG Europe Region, presented at AAPG Geoscience Technology Workshop: Euroasian Mature Salt Basins, Krakow, April 16-18, 2019.

Minibasin Obstruction by Base-Salt Welding on a Salt-Detached Slope: An Example from the Northern Gulf of Mexico: presented to European Geosciences Union, presented at EGU General Assembly, Vienna, April 7-12, 2019.

Salt Diapir Influence on Channel Evolution in Deep-Water Minibasins, Gulf of Mexico: presented to Applied Geodynamics Laboratory Annual Meeting, Bureau of Economic Geology, The University of Texas at Austin, November 9, 2018.

Complexities in the early history of Gulf of Mexico minibasins: intra-minibasin thrusts and proto-minibasin collision: presented to Applied Geodynamics Laboratory Industrial Associates, presented at AGL 2018 Annual Review Meeting, Pickle Research Campus, The University of Texas at Austin, November 8-9, 2018.

Redirection of submarine channels by minibasin obstruction and overthrusting: presented to Applied Geodynamics Laboratory Industrial Associates, presented at AGL 2018 Annual Review Meeting, Pickle Research Campus, The University of Texas at Austin, November 8-9, 2018.

Salt Diapir Influence on Channel Evolution in Deep-Water Minibasins, Gulf of Mexico: presented to Quantitative Clastics Laboratory Annual Meeting, Bureau of Economic Geology, The University of Texas at Austin, October 16, 2018.

Shortening of Diapir Provinces: Translation, Tilting and Rotation of Minibasins in Linked-Diapir Systems: presented to GSA Penrose Conference in honor of Martin P. A. Jackson, presented at Advances in Salt Tectonics: Observations, Applications, and Perspectives, Ein Boqeq, Israel, February 11-16, 2018.

Shortening of salt basins containing isolated diapirs: a synthesis and new insights: presented to Advances in Salt Tectonics: Observations, Applications and Perspectives, presented at Penrose Conference, Ein Boqeq, Dead Sea, Israel, February 11-16, 2018.

Why do squeezed diapir provinces have such variable structural styles?: presented to Advances in Salt Tectonics: Observations, Applications and Perspectives (in honor of Martin P.A. Jackson), presented at Penrose Conference, Ein Boqeq, Dead Sea, Israel, February 11-16, 2018.

Obstructed vs freely-moving minibasins: influence on supra-canopy deformation patterns in the northern Gulf of Mexico: presented to Applied Geodynamics Laboratory Industrial Associates, presented at AGL 2017 Annual Review Meeting, Pickle Research Campus, The University of Texas at Austin, November 9-10, 2017.

Lateral mobility of minibasins during shortening: insights from the SE Precaspian Basin, Kazakhstan: presented to AAPG, presented at Annual Conference, Houston, April 2-5, 2017.

Shortening of diapir provinces (part 1): isolated diapir settings: presented to Applied Geodynamics Laboratory Industrial Associates, presented at AGL 2016 Annual Review Meeting, Pickle Research Campus, The University of Texas at Austin, November 10-11, 2016.

Shortening of diapir provinces (part 3): linked diapirs and a synthesis: presented to Applied Geodynamics Research Laboratory Industrial Associates, presented at AGL 2016 Annual Review, Pickle Research Campus, The University of Texas at Austin, November 10-11, 2016.

The topology of evolving single phase and multiphase rift fault networks: presented to Tectonic Studies Group, presented at Tectonic Studies Group Annual Meeting 2016, University College London, UK, January 6-8, 2016.

The growth and interaction of faults in multiphase rifts: Horda Platform, Norwegian North Sea: presented to AGU, presented at AGU Fall Meeting, San Francisco, December 14-18, 2015.

Criteria for detecting shortening in minibasin provinces: presented to Applied Geodynamics Research Laboratory, presented at Applied Geodynamics Research Laboratory Annual Meeting, Pickle Campus, University of Texas at Austin, USA, November 12-13, 2015.

The role of encased minibasins during shortening: observations from the SE Precaspian Basin (Kazakhstan): presented to Appled Geodynamics Laboratory Consortium, presented at Appled Geodynamics Laboratory Consortium Annual Meeting, Pickle Campus, University of Texas at Austin, USA, November 12-13, 2015.

The topology of evolving single phase and multiphase rift fault networks: presented to Topology Workshop: Statoil and University of Bergen, presented at University of Bergen, Norway, October 14, 2015.

Dynamic Topology: A New Approach to Help Distinguish Modes of Rift Fault Network Formation?: presented to American Association of Petroleum Geologists, presented at AAPG Annual Convention, Denver, CO, May 31-June 3, 2015.

The Growth and Interaction of Faults in Multiphase Rifts: Horda Platform, Norwegian North Sea: presented to American Association of Petroleum Geologists, presented at AAPG Annual Convention, Denver, CO, May 31-June 3, 2015.

Dynamic Topology: A New Approach to Help Distinguish Modes of Rift Fault Network Formation: presented to Norwegian Geological Society, presented at Norwegian Geological Society Winter Conference, Stavanger, Norway, January 11-13, 2015.

Styles and Evolution of Fault Intersections in a Multiphase Rift: Horda Platform, Northern North Sea: presented to Geological Society of London, presented at "The Geometry and Growth of Normal Faults" Geological Society Conference, Burlington House, London, UK, June 20-22, 2014.

Mobile Salt Thickness as a Control on the Structural Style and Evolution of Rift Basins: Danish Central Graben, North Sea: presented to American Association of Petroleum Geologists, presented at AAPG Annual Conference, Pittsburgh, PA, June 13-15, 2013.

Mobile Evaporite Controls on the Structural Style and Evolution of Rift Basins: presented to Tectonic Studies Group, presented at Tectonic Studies Group Annual Conference, Leeds, UK, January 2-4, 2013.

Landscape Response to Active Extensional Faulting Along a Step-Faulted Rift Margin: The Perachora Peninsula, Eastern Gulf of Corinth, Greece: presented to American Geophysical Union, presented at AGU Annual Conference, San Francisco, CA, December 16-20, 2010.

The Influence of Mobile Evaporites upon Fault Structural Style and Depocentre Development: The Coffee-Soil Fault Zone, Danish North Sea.: presented to Geological Society of London, presented at Salt, Sediments and Prospectivity Conference, Burlington House, London, UK, January 14-16, 2010.

Fault Growth and Linkage as Controls on Depocentre Development: The Coffee-Soil Fault Zone, Danish North Sea: presented to American Association of Petroleum Geologists, presented at AAPG Annual Conference, Denver, CO, June 12-14, 2009.

Stratigraphic Response to Normal Fault Growth and Linkage: presented to British Sedimentology Research Group, presented at Annual Conference, Liverpool, UK, December 18-20, 2008.

The Role of Salt Tectonics in the Energy Transition: An Overview and Future Challenges: presented to GeoH2 Consortium Members, presented at GeoH2 Annual Consortium Meeting, Austin, Texas, October 18, 2022-Present.

Teaching and Advising

Student Committee Supervision

Co-Supervisor, PhD, PhD Supervision Committee, Tarek Galhom, Composition, Tectonics, and Stratigraphic Variations of the Zechstein Supergroup in the Central North Sea, University of Bergen, Bergen, Norway, 2022

Co-supervisor, PhD, PhD Supervision Committee, Umut Isikalp, Tectono-Sedimentary Evolution of Triassic Minibasins in the Central North Sea, University of Bergen, Bergen, Norway, 2022

Co-Supervisor, M.Sc., Petroeum Geoscience for Exploration, M.Sc. Student Project Supervision Committee, Jack Humphries, Salt Tectonics and CO2 Storage, Offshore Southern Norway, University of Manchester, Manchester, UK, 2021

Co-Supervisor, M.S., Petroleum Geoscience, Student Project Supervision Committee, Hector Barnett, The Intra-Zechstein Carbonate Reservoirs and Salt Features of the Forth Approaches Basin, UKCS, Imperial College London, London, UK, 2020

Co-Supervisor, M.S., Group Supervision Committee, James Hamilton-Wright, Strain Migration During Multiphase Rifting in the Stord Basin, Northern North Sea, Imperial College, London, 2014

Co-Supervisor, M.S., Group Supervision Committee, Mikhail Skaryatin, Salt Tectonics and Related Prospectivity in UK CNS Quads 28 and 29, Imperial College, London (hosted by E. On), 2014

Co-Supervisor, M.S., Supervising Committee, Robin Thomas, Three-Dimensional Numerical Modeling of Normal Fault Growth in Multiphase Rifts, Imperial College, London, 2014

Co-Supervisor, MSci Project Supervision Committee, Benjamin Ganesh, Deciphering pre-Permian Tectonics in the North Sea Using 3D Seismic Data, Imperial College, London, 2014

Co-Supervisor, Ph.D. Project Supervising Committee, Alex Coleman, Fault-Related Folds in Salt-Influenced Extensional Basins, Imperial College, London, 2014

Co-Supervisor, M.S., Group Supervising Committee, David Reader, Three-Dimensional Numerical Modeling of Normal Fault Growth in Multiphase Rifts, Imperial College, London, 2013

Co-Supervisor, MSc Petroleum Geoscience, MSc Project Supervision Committee, Tanaporn Charoenpun, Evolution of a Major Basin Boundary Fault System in the Stord Basin, northern North Sea, Imperial College, London, 2013

Co-Supervisor, MSci Project Supervision Committee, Thomas Barling, Linkage of a Major Normal Fault Array in the Horda Platfrom, Northern North Sea, Imperial College, London, 2013

Co-Supervisor, Ph.D. Project Supervising Committee, Thomas Phillips, The Influence of Salt Tectonics, Basement Fabrics, and Multiple Rift Phases on the Tectono-Stratigraphic Evolution of Rift Basins, Imperial College, London, 2013

Lead Supervisor, M.S., Group Committee, Stephen Watkins, The Geometry and Evolution of Fault-Related Folds Adjacent to a Major Reactivated Rift Border Fault, Oygarden Fault Complex, Norwegian North Sea, Imperial College, London, 2013

Lead Supervisor, M.S., Group Supervising Committee, Edoseghe Osagiede, Quantifying the Growth History of Seismically-Imaged Normal Faults: The Effect of Variable Seismic Velocities

and Source Wavelet Frequencies, Imperial College, London, Project awarded a distinction and prize for best in year, 2013

Ph.D. Co-Supervisor, Ph.D. Student Supervising Committee, Antje Lenhart, The Influence of Pre-Existing Structures on the Tectono-Stratigraphic Evolution of Rift Basins, Imperial College, London, 2013

Co-Supervisor, MSci Project Supervision Committee, James Scaife, Subsurface Investigation of the Pre-Oxfordian Tectonic Evolution of the Exmouth Sub-basin Offshore NW Australia, Imperial College, London, 2012

Co-Supervisor, MSci Project Supervision Committee, Toby Gann, Evolution of Cretaceous Conjugate Faults in the Exmouth Sub-basin, Offshore NW Australia, Imperial College, London, 2012

Co-Supervisor, MSc Petroleum Geoscience Project Supervision Committee, Vasileios Korakas, Velocity Modelling in the Mexican Gulf, University of Manchester, 2011

Activities of a Professional Nature

Professional Societies

American Association of Petroleum Geologists (AAPG) member

American Geophysical Union (AGU)

Activities of a Professional Nature

Authored article outlining need for salt tectonic research in the Central North Sea for expronews.com (https://expronews.com/exploration/renaissance-of-salt-tectonics-in-the-central-north-sea/) (January 14, 2021)

Co-Chair, Salt Tectonics Poster Session at American Association of Petroleum Geologists Annual Convention and Exhibition (San Antonio, Tex.) (July 2018-Present)

Funding

Research Support

Principal Investigator: Numerical Modelling of Fault Growth in Multiphase Rifts, Imperial College Post-Doc Collaboration Grant (June 1, 2013-January 31, 2015; $5500).

Principal Investigator: Evolution of Depositional Systems in Salt-Influenced Rifts, Statoil Academia Mobility Grant (October 1-November 15, 2011; $4590).