



# Stephen John Matthews PhD

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## Employment

9 years

2015 – 2024

### Frontier Structure Ltd

#### Director & Consultant Geologist

Coaching, mentoring, systematic structural interpretation of 3D seismic datasets and uncertainty management in fold/thrust belts and rifted margin environments for several clients. Training course delivery in the French Alps.

26 years

2013 – 2014

### BP Exploration

#### Exploration Director (Basin Analysis)

Leadership of BP's Basin Analysis Teams in the UK and USA (>20 geoscientists), and delivery of original integrated regional projects to underpin ranking of numerous basins and plays for future access consideration. Additional leadership responsibilities included facilitation of projects to improve globally consistent consolidation and usage of regional depositional environment maps, stratigraphic schemes, petroleum systems databases and potential field databases and modelling approaches.

2010 – 2013

### Asia Pacific Access Project Manager & Senior Geological Advisor

Leadership of the Asia Pacific Access Team in the UK. Evaluation of access opportunities, and delivery of business focused integrated regional projects, across the Asia Pacific region (eg offshore SW Australia, offshore S China, Indonesia, Malaysia, Myanmar & South Korea).

2006 – 2010

### Arctic Regional Project Manager & Senior Geological Advisor (from 2009)

Project leadership and delivery of BP's 'Arctic Regional Project', an integrated regional synthesis and basin ranking of the entire region north of the Arctic Circle in Alaska, Canada, Greenland, Norway and Russia. Development of external technical relationships with several geoscience institutes, and with numerous Arctic research experts globally.

2004 – 2006

### Global Structural Geology Network Leader & Geological Advisor

Global network leadership for Structural Geology, with responsibility for ensuring sharing of business-focused best practice in the application of integrated structural geology across the scales. Facilitation of connectivity across the global network (>400 geoscientists), and delivery of funding recommendations for leading-edge Joint Industry Programs. Maintenance of the applied structural geology training curriculum. Design and leadership of integrated exploration training courses based in the uplifted continental margin of the Western Alps, focused on ensuring awareness and application of modern concepts for continental margin evolution to play fairway analysis.

2003 – 2004

### Exploration Excellence Team (Global Technical Assurance) & Geological Advisor

Geological Advisor within BP's Exploration Excellence Team, with responsibility for assurance of structural geology across numerous exploration projects globally (e.g. Atlantic margins (Angola, Norway, UK), Black Sea, Caspian, Egypt Gulf of Suez and Nile Delta / Mediterranean, Trinidad, USA Gulf of Mexico).

1998 – 2002

### Senior Structural Geologist

Individual contributor in exploration structural geology focused on delivery of integrated technical contributions as a member of the Basin Review Team (offshore NW Africa, Morocco to Benin), Saudi Arabia Team (Core Venture 1), Iran Team (including fieldwork in the Zagros Mountains during 2002), Brazil Team (Amazon Cone) and Norway Team (16th & 17th offshore Mid-Norway licence rounds).

1996 – 1998

### Senior Structural Geologist (Gulf of Mexico)

Houston based specialist in exploration structural geology. Regional synthesis of the northern Gulf of Mexico structural architecture and control on play fairway distribution. Delivery of numerous (> 30) regional cross-sections over Mississippi Canyon and Atwater Valley protraction areas. Sub-regional 3D evolutionary studies of salt withdrawal basins (focused on petroleum charge response to structural geometrical evolution) in the specific area of subsequent major oil discoveries (eg Thunderhorse and Atlantis).

1995

### Senior Structural Geologist (Venezuela)

Houston and Caracas based specialist in exploration structural geology. Regional synthesis of Eastern Venezuela (onshore and offshore) and assessment of exploration potential for various Blocks onshore and offshore E Venezuela during the 1995 licence round (Guarapiche, Gulf of Paria, Punta Pescador, Delta Centro).

1991 – 1994

### Structural Geologist (SE Asia)

Jakarta and UK based specialist in exploration structural geology. Regional synthesis and integrated basin-scale structural studies of the East Java Sea (Indonesia) and Nam Con Son Basin / offshore Da Nang margin (Vietnam) providing the structural framework and regional geological context for subsequent gas discoveries (eg Lan Tay and Lan Do).

1989 – 1990

### Structural Geologist (Colombia & North Africa)

Bogota and UK based specialist in exploration structural geology. Delivery of original regional structural cross-sections and structural geological maps over the Colombian Eastern Cordillera prior to prospective acreage acquisition along the 'Foothills' trend. Fieldwork in the Colombian Eastern Cordillera during 1989. Regional geological synthesis and basin ranking of North Africa onshore and offshore (Morocco, Algeria, Tunisia, Libya & Egypt).

**5 years**

1986 – 1988

**Robertson Research International****Senior Structural Geologist**

Delivery of integrated structural geological contributions during assessment of petroleum potential in the southern Morocco onshore (Anti-Atlas) involving a total of 7 months fieldwork in the Moroccan Sahara during 1986 and 1987. Field-based evaluation of the Peloponnesian region of western Greece during 1988. Evaluation of structural models for the Marib-Jawf basin of Yemen.

1984 – 1985

**Structural Geologist**

Delivery of the structural geology component for multi-client basin studies (eg North Sea South Viking Graben and Egypt Gulf of Suez involving fieldwork on both onshore flanks of the Gulf of Suez rift in 1985, and various proprietary projects (eg Yemen Balhaf Graben which also involved fieldwork during 1984).

**University Education & Research**

1980 – 1983

University of Leeds PhD  
(Fold-thrust systems, French Alps & NW Scotland)

1977 – 1980

University of Wales (Swansea)  
BSc (Geology)

**Invited Conference Presentations**

2009

Geological Society of America  
Penrose Conference on the  
Arctic (Banff)

2009

AAPG Polar Petroleum  
Potential (Plenary Presentation)  
(Moscow)

**Conferences Co-Convened & External Roles**

2002

Geological Society Burlington  
House: Oil and Gas in  
Compressional Belts

1995

Geological Society Burlington  
House: Petroleum Geology of  
SE Asia

2001 – 2007

Advisory Editor: Journal of the  
Geological Society

2017 – 2020

External Examiner: University  
of Leeds MSc in Structural  
Geology with Geophysics

**Geological Fieldwork**1978 –  
present

Several years total time  
fieldwork / field course  
leadership

**Training Course Leadership**1984 –  
present

Delivery of numerous  
classroom and field-based  
(Western Alps & NW Scotland)  
training courses

**Selected Publications and Conference Presentations***(based on technical work completed since 1990 only)***Arctic**

Matthews, S.J., Guryanov, A. & BP Arctic Team. 2013. Onshore to offshore regional-scale evolution in the area of the Eastern Seas, Russian Arctic. AAPG Polar Petroleum Potential (3-P) Conference and Exhibition, 15-18 October 2013, Stavanger, Norway.

Matthews, S.J. & BP Arctic Team. 2009. Regional geological context of Arctic frontier basins. AAPG Polar Petroleum Potential (3-P) Conference and Exhibition, 30 September – 2 October, Moscow, Russia.

Matthews, S.J., Birkeland, E., Fugelli, E., Guryanov, A., Hansen, E-K., Ivanova, N., Ivanov, G., Kittilsen, J-E., Matveev, Yu., Milner, P., Piggott, N., Roslov, Yu., Stover, C. & Verba, M. 2006. Tectonostratigraphic evolution of the Russian Barents and South Kara Sea Basins. Third International Conference "Oil and Gas of the Arctic Shelf", 15-17 November 2006, Murmansk, Russia.

Matthews, S.J., Fugelli, E., Guryanov, A., Hansen, E-K., Ivanova, N., Ivanov, G., Kittilsen, J-E., Matveev, Yu., Milner, P., Roslov, Yu. & Stover, C. 2006. Mesozoic tectonostratigraphic evolution of the Barents and South Kara sea sedimentary basins. International Scientific-Technical Conference "Oil, Gas, Arctic", Moscow, 27-29 June 2006, Russian State University of Oil and Gas (I.M.Goubkin).

Stover, C., Birkeland, E., Fugelli, E., Galimov, E., Guryanov, A., Hansen, E-K., Kittilsen, J-E., Matthews, S.J., Milner, P., Nemchenko-Rovenskaya A., Piggott, N & Sevastyanov V. 2004. Exploring from the source rock up: A regional view of the Barents and Kara Sea petroleum systems. Second International Conference "Oil and Gas of the Arctic shelf", 2004, Murmansk, Russia.

**Alps**

Dumont, T., Schwartz, S., Guillot, S., Monie, P., Matthews, S. J. & Jouvent, M. 2018. Kinematics of the early Alpine collision wedge recorded in the internal zones of the western Alps. Young Researchers in Structural Geology and Tectonics (YORSGET), 2-6 July 2018, Montgenevre, France.

Dumont, T., Schwartz, S., Matthews, S., Malusa, M. & Jouvent, M. 2017. The initial superposition of oceanic and continental units in the southern Western Alps: constraints on geometrical restoration and kinematics of the continental subduction wedge. Geophysical Research Abstracts Vol. 19, 2017 EGU General Assembly 2017, Vienna, Austria.

Dumont, T., Verly, A., Lanari, P. & Matthews, S.J. 2015. Structure and restoration of the Briançonnais Zone: a reappraisal of the early Alpine deformation episodes. 12th Emile Argand Conference on Alpine Geological Studies, 13-19 September 2015, Briançon & Montgenevre, France.

Dumont, T., Franzi, V. & Matthews, S.J. 2012. Gravity sliding in a basinal setting, a surficial record of tectonic and geodynamic evolution; examples from the southern W Alps and their foreland. Geophysical Research Abstracts Vol. 14, EGU2012-11096, 2012. EGU General Assembly, Vienna, Austria.

**Asia Pacific**

Fraser, A.J. & Matthews, S.J. 1997. Petroleum geology of SE Asia: an introduction. In: Petroleum Geology of Southeast Asia. Special Publication of the Geological Society, 126, 1-2.

Matthews, W. J., Wilson, R. W., Bevan, T. G., Dykmans, V., Stewart, I. J. & Matthews, S. J. 2017. Reconstructing SW Gondwana: the India, Australia and Antarctica jigsaw from the Permian to the Late Cretaceous. AAPG International Conference & Exhibition, 15-18 October 2017, London, UK.

Matthews, S.J., Fraser, A.J., Lowe, S., Todd, S.P. & Peel, F.J. 1997. Structure, stratigraphy and petroleum geology of the SE Nam Con Son Basin, offshore Vietnam. In: Petroleum Geology of Southeast Asia. Special Publication of the Geological Society, 126, 89-106.

Roques, D., Matthews, S.J. & Rangin, C. 1997. Constraints on strike-slip motion along the Vietnam margin offshore Da Nang: implications for the opening of the East Vietnam Sea and regional hydrocarbon potential. In: Petroleum Geology of Southeast Asia. Special Publication of the Geological Society, 126, 341-353.

Samuel, M.A., Harbury, N.A., Jones, M.E. & Matthews, S.J. 1995. Inversion controlled uplift of an outer-arc ridge: Nias Island, offshore Sumatra. In: Basin Inversion, Special Publication of the Geological Society, 88, 473-492.

## Selected Publications and Conference Presentations (based on technical work completed since 1990 only)

### Asia Pacific *continued*

Matthews, S.J. & Bransden, P.J.E. 1995. Late Cretaceous and Cenozoic tectonostratigraphic development of the East Java Sea Basin, Indonesia. *Marine and Petroleum Geology*, 12, 499-510.

Matthews, S.J. & Todd, S.P. 1993. A tectonostratigraphic model for the southern Nam Con Son Basin, offshore Vietnam. In: *Proceedings 1st International Conference on Stratigraphy of the Continental Shelf of Vietnam*.

Bransden, P.J.E & Matthews, S.J. 1992. Structural and stratigraphic evolution of the East Java Sea, Indonesia. In: *Proceedings Indonesian Petroleum Association, 21st Annual Convention*. 417-453.

Wilson, R. W., Matthews, W. J. & Matthews, S. J. 2017. Building on the shoulders of exploration pioneers to unlock Myanmar's riches. *AAPG International Conference & Exhibition*, 15-18 October 2017, London, UK.

Wilson, R.W., Molinero, G., Love, T., Matthews, W. J., Matthews, S. J., Kuszniir, N. & Mohn, G. 2018. Rewards and challenges of exploration on the South China Margin - a review of BP heritage exploration. *SEAPEX Conference, Asia Pacific Revisited: New Ideas, New Opportunities*, 27-28 June 2018, London, UK.

### Gulf of Mexico

Peel, F.J., & Matthews, S.J. 1999. Structural styles of traps in deepwater fold / thrust belts of the northern Gulf of Mexico. *AAPG International Conference and Exhibition*, 12-15 September 1999, Birmingham, England.

Matthews, S.J., Bevan, T.G., Hall, S.H. & Valderrama, M. 1998. Evaluation of structural models for deep-waterfold belt evolution in the northern Gulf of Mexico. *AAPG Hedberg Research Conference: Integration of geologic models for understanding risk in the Gulf of Mexico*, 20-24 September 1998, Galveston, Texas, USA.

### Middle East

Daly, M.C., Matthews, S.J., Goff, J. & Ruiz, C. 2004. Detachment, and a future for Middle East petroleum exploration. *Continental Tectonics: A discussion meeting in memory and celebration of the life and work of Mike Coward*. 27-28 May 2004. The Geological Society, Burlington House, Piccadilly, London, UK.

Ruiz, C.C., Matthews, S.J., Goff, J.C., Jones, R.W., Whiteley, N.J., Shamshiri, M., Farmani, F. & Jahani, S. 2004. Mid Miocene - Recent tectonostratigraphic evolution of the northeast Dezful Embayment, southwest Iran. *GEO 2004 6th Middle East Geosciences Conference and Exhibition*, 7-10 March, Kingdom of Bahrain.

### Norway

Corfield, R.I., Roberts, A.M., Matthews, S.J., Kuszniir, N.J. & Hooper, R.J. 2002. Mapping palaeostructure and palaeobathymetry along the Norwegian Continental Margin. *AAPG Hedberg Conference. Hydrocarbon Habitat of Volcanic Rifted Passive Margins*. September 8-11, 2002. Stavanger, Norway.

Edwards, C.M., Matthews, S.J., Elders, C.F. & Roberts, D.G. 2002. Structural interpretations of the northern Voring Basin, offshore mid-Norway using deep geophysical data integration. *AAPG Hedberg Conference. Hydrocarbon Habitat of Volcanic Rifted Passive Margins*. September 8-11, 2002. Stavanger, Norway.

Roberts, A.M., Corfield, R.I., Kuszniir, N.J., Matthews, S.J., Hansen, E-K & Hooper, R.J. 2009. Mapping palaeostructure and palaeobathymetry along the Norwegian continental margin: More and Voring Basins. *Petroleum Geoscience* V15, 27-43.

### Oil & Gas Structural Geology

Needham, D.T., Matthews, S.J. & Butler, R.W.H. 2004. Oil & gas in compressional belts. *Marine and Petroleum Geology* V21, 783-784.

Matthews, S.J., Bentham, P., Buddin, T., Gibson, R. & Purnell, N. 2002. Structural model assessment in deep-water compressional settings: exploration impact in the Gulf of Mexico and Amazon Slope Basins. *AAPG Annual International Meeting Cairo, Egypt* October 27-30, 2002, Cairo, Egypt.