

TRAINING COURSES

Instructor:

Prof. Alastair J. Fraser
EGI Chair in Petroleum
Geoscience, Imperial College
London

Course Structure

1 day theory

2 days exercises &
discussion

Participants

10–15 people

Duration

3 days

Techniques in Play Fairway Analysis

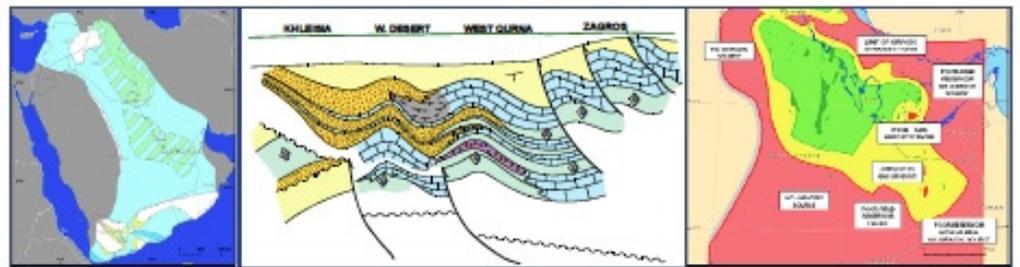
Available to EGI Corporate Associate Members

OVERVIEW

The course will review the key tools and techniques used at each stage of the Exploration Process from Gross Depositional Environment (GDE) mapping, to building play cartoons and tectono-stratigraphic diagrams through constructing a fully integrated play fairway analysis applying the industry standard approach. Practical application of the techniques and tools are explored through a 2-D seismic and well based exploration exercise where participants work through a real example of a regional basin evaluation leading to acreage access and a subsequent drilling campaign.

The fundamental understanding of what makes basins work has evolved over the past 20 years into a systematic approach which focuses thinking at the regional or basin scale before considering individual prospects and leads.

The strength of this methodology, which is sometimes referred to as 'Geology from the Bottom Up', allows us to high-grade basins and plays for further study/investment thus eliminating much wasted time, effort and money in basins with little potential. The concept of the Exploration Process Triangle is introduced to reinforce the methodology underpinning this philosophy.



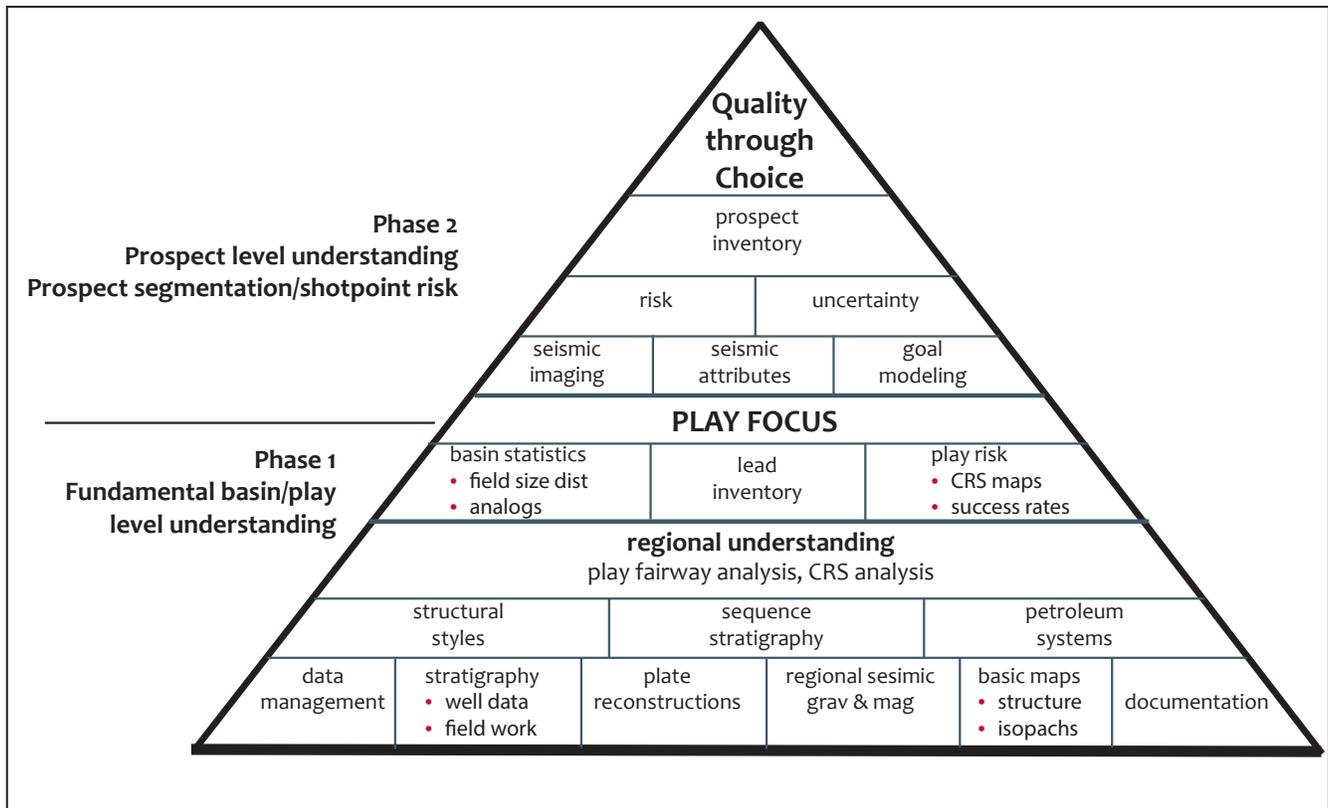
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London**

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Gross depositional environment mapping, Tectono-stratigraphy, Common Risk Segment Mapping, Yet-to-find analysis.

1. Exploration Process
2. Tectono-stratigraphy
3. Gross Depositional Environment (GDE) Mapping
4. Regional Risk Mapping (CRS)
5. Yet-to-Find Analysis
6. Building the Prospect Inventory
7. Shotpoints & Segments
8. Exploration Risk



REFERENCES

- Allen, P.A. & Allen, J.R. (2005): Basin Analysis: Principles and Applications, Blackwell Science, Malden, MA, USA, 560pp
- Doust, H. (2010): The exploration play: What do we mean by it? AAPG Bulletin, v.94, no. 11 (November 2010), pp. 1657-1672
- Fraser, A.J. (2011): A regional overview of the exploration potential of the Middle East. A case study in the application of play fairway risk mapping techniques. In: Vining, B. A. and Pickering, S.C (Eds). Petroleum Geology: From Mature Basins to New Frontiers - Proceedings of the 7th Petroleum Geology Conference. Geological Society of London.
- Gluyas, J. & Swarbrick, R. (2003): Petroleum Geoscience, Blackwell Science, Malden, MA, USA; 367pp.



Alastair Fraser, PhD

EGI CHAIR IN PETROLEUM GEOSCIENCE

Professor Alastair J. Fraser holds the EGI Chair in Petroleum Geoscience at Imperial College London. He was awarded a B.Sc. from Edinburgh University and a Ph.D. from Glasgow University in the UK, both in Geology.

Following a long and distinguished career in the Oil Industry with BP where he counts the giant Plutonio discovery in Angola as one of his career highlights, he has turned towards new and equally rewarding challenges in academia where he is pursuing his lifelong interest in rift basin evolution and associated petroleum systems. In common with many other industry professionals, his search for oil & gas has taken him to many corners of the world including the Gulf of Mexico, the North Sea, deepwater Angola, the Middle East, and the Far East. With BP's encouragement and support he was able to publish many key papers on the petroleum geology of extensional basins, most notably on the North Sea Jurassic and the U.K. Carboniferous. Al was recently elected Science Secretary for the Geological Society of London where he is chiefly responsible for the technical direction of the Society's many meetings and conferences.

Pursuing his interests in rifts and rifted margins will continue to be his key area of research. Areas of focus will include the following, (several as joint Imperial/EGI projects).

Arctic Margins:

- Geology and hydrocarbon potential of the Circum Arctic
- Plate tectonic evolution of the Arctic
- Regional reservoir & source rock prediction

South Atlantic Margins:

- Structural and stratigraphic evolution of the West African and Brazilian margins
- Pre-salt play systems
- Salt Basin evolution
- Petroleum systems
- Continental break-up and heat flow prediction

UK Shale Gas:

- Jurassic and Carboniferous shale gas resource potential of the Onshore U.K.
- Sweet spot analysis of the two main shale gas and shale oil plays
- Exploration and Development solutions in densely populated areas

Eastern Mediterranean:

- Geology of the Messinian saline giant from well, 2D and 3D reflection seismic data
- Tectonic evolution of the Eastern Mediterranean and impact on petroleum potential

A key aspect of the EGI Chair at Imperial is to act as Director of the EGI/Imperial Research Alliance. Here he brings his industry experience to EGI CA member companies through direct contact and interaction with senior managers and exploration teams.

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Research Interests

- Arctic Margins
- South Atlantic Margins
- Eastern Mediterranean
- UK Shale Gas

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