

Dear FORCE members

We would like to take this opportunity to wish you all the best for the summer!

As you will see further on in this newsletter, the activity level in FORCE is very high. At present, 48 companies holds FORCE memberships, and representatives from about 40 companies were present at the General Assembly held on March 11 .

Rather than a summary of all activities, we have received updates from both the “Improved exploration” and the “Improved oil & gas recovery” organizations within FORCE, and below is what they have to say:

Improved Oil & Gas Recovery

Greetings from the IOGR-group! We have had a very hectic spring, and there is more to come!

We started the year with the workshop “Predicting EOR potential – from lab to field. This was the first workshop held in this project, and it was held at the charming Solstrand Hotel near Bergen.

Shortly after this, the network group “Improve EOR Competence” held their workshop. This year the title was “EOR Process Modeling Workshop”, and once again the venue was Måltidets Hus. This seminar also included a visit to the nearby research facility IRIS, and was round off with a dinner at Gastronomisk Institutt.

The newly established network group “EOR Management”, led by Benedicte Kvalheim, has plans for an EOR workshop this fall, aimed at managers in the industry. The date set for this seminar is November 11.

May the FORCE be with you – May you be with FORCE
Wishing you a wonderful summer!

Improved Exploration

Summer greetings from the Improved Exploration Group.

The first half of 2014 has been busy for the group, as it has included 4 seminars and 2 field trips and a lot of interesting project proposals. Below is a list of our plans for the near future, as well as a short description of the projects (ongoing and planned). If you would like to join any of the projects, please check the list for info on availability to participate.

Seminars and field trips held so far this year:

- Barents Sea – upper palaeozoic carbonates
- Gironde and Aquitaine field trip
- Structural geology field trip to Iceland
- The science behind...
- Barents sea petroleum system analysis
- Geophysical methods lunch time seminar

Seminars planned ahead:

- From seismic fantasy to geological fact - September
- Oslo Graben field trip – September
- Salt tectonics – November
- EOR for managers - November
- The importance of diagenesis in exploration and production - December
- Regional conference 2014 – Unexplored Plays

Seminars next year:

- Field development and production challenges
- Gironde field trip
- Iceland field trip

JIP - ongoing and planned:

- Locra
- Late Triassic Barents Sea
- Safari 3
- Carboniferous BS
- RM3D
- GPlates
- Joint Drilling Program

Projects

For detailed information on the various projects, please see the webpage:
<http://www.force.org/IE/Project-groups/Projects---Improved-Exploration---overview/>

The following projects are open for FORCE sponsorship. Please, read through the project information and get in touch with contact person for the projects that your company might sponsor.

Locra (Lower Cretaceous basin studies in the Arctic)

The project is a consortium managed by the University of Stavanger and the University Centre in Svalbard in cooperation with other universities.

Objectives are to improve the knowledge of the basin configuration and fill of the Lower Cretaceous basins in the high Arctic in order to predict coarse-grained siliciclastic wedges as plays.

Contact person: Alejandro Escalona, UiS. The project is accepting late participants.

Middle to Late Triassic palynostratigraphy in the Barents Sea area

The Triassic successions in the Barents Sea area reveal palynological assemblages suitable for dating, correlation as well as proxies for paleoclimatic and paleogeographic interpretations. Several palynological papers have been published from the Triassic succession in the Norwegian Arctic (for example Hochuli et al. 1989, Vigran et al. 1998), but more work is needed in order to fully understand their stratigraphic ranges and their quantitative distribution in this vast region. Objectives of the project are to Provide a better framework for dating and correlation of the Late Triassic succession of the Norwegian Arctic; Investigate the potential of using microplankton in providing better paleo-environmental models for the Late Triassic.

Contact person: Gunn Mangerud, UiB. The project is accepting late participants.

SAFARI 3

The SAFARI project is a Multi Phase Consortium Research Proposal from the Virtual Outcrop Geology Group and Partners. The first two phases of SAFARI involved building of a unique database of sedimentological information which allows sponsors to find appropriate analogue data from outcrops and modern systems. Phase 2 will be finished autumn 2014.

The theme for SAFARI 3 is populating the database with large volumes of new data. These data will come from a variety of sources including outcrops, seismic and production data, all within the umbrella of the unified standardised schema. The standardised schema means that data from the different sources are comparable and searchable. There are also modules to add data from shallow seismic and to incorporate production data.

Contact person: John Howell, University of Aberdeen. The project is accepting late participants.

Early Carboniferous biostratigraphy of the Barents Sea

Industry focus on the Barents Sea has intensified during recent years in connection with new discoveries and increased optimism concerning future potential in new acreage in the Barents Sea and the formerly disputed area. Several play models have been established, thereby also revealing a need for increased effort to obtain a solid stratigraphic framework for the older parts of the succession.

This project is aimed at dating and correlating the clastic Mississippian (Early Carboniferous) Billefjorden Group using palynology, which has proven to be the only applicable paleontological technique in this part of the succession. Deliverables will be Range charts for all wells/sections; Catalogue and photomicrographs of all taxa recorded; Correlation panels; Refined palynostratigraphy (zonation scheme) for the Mississippian of the Barents Sea area; Scientific publications; Annual progress report; MSc training for 2 students.

Contact person: Gunn Mangerud, UiB. The project is accepting late participants.

GPlates – Improved Exploration Tool

Some benefits of GPlates include (1) Easy comparison of COB overlap between conjugate margins and calculation of plate tectonic scale stretching factors, (2) Location of thermal 'hot spots' such as plumes and large igneous provinces through time with implication for hydrocarbon maturation and migration, (3) Dynamic topography yielding information about which areas are likely to have been below sea-level, at what depth, uplift/subsidence and sedimentation rates, (4) Paleobathymetry and consequent ocean and basin circulation models, (5) Improved locations of emergent land masses (provenance) and depositional environment/facies in time and space and (6) Plate kinematic modelling and deformation of tectonic plates. The project will amongst others deliver CEED ARC-GIS based data-sets and rotation model (Annual update) and a Global plate tectonic Atlas with a focus on the North Atlantic and the Barents Sea (Annual update).

Contact person: Trond H. Torsvik, UiO. The project is accepting late participants.

RM3D

In order to enhance the IOR programme and in-fill the Norwegian skills-gap, we propose to establish a UiS research consortium in geologically focussed Reservoir Modelling (RM3D). This consortium will focus on all aspects of reservoir scale geology that impact hydrocarbon recovery, using integrated multi-disciplinary approaches and developing efficient workflows. The RM3D project will largely focus on meso- to macro scale geology and building models which will improve the sweep of mobile oil, including how to describe and model reservoirs, trying to understand what are the important sedimentary and structural heterogeneities.

Contact person: Chris Townsend, UiS

Joint Drilling Program

The project is a Norway and UK cross-boundary initiative towards a climate motivated drilling operation in the North Sea. Objectives are to explore the Plio-Pleistocene Earth's climate history; better understand the geometry, dynamics, processes and wider impact of ice sheet development; understand the fluid communication and its evolution during a period of fluctuating pressure conditions in shale-dominated basins and its implications for CO₂ storage; understand and quantify the effects of ice sheet loading/unloading on underlying strata, on mechanical properties, horizontal stress and CO₂ storage site performance.

Contact person: Maria Barrio, SINTEF. This proposal for FORCE support refers to Step 2 of the JDP.