

28-30 MARCH 2022 • ABU DHABI, UAE

GEOLOGICAL PROCESS-BASED FORWARD MODELING



WHAT TO EXPECT FROM THE AAPG EXPERIENCE

The American Association of Petroleum Geologists (AAPG) and our suppliers, venues and services partners are committed to providing a clean and safe environment and experience for all our event participants. We remain alert to COVID-19 risks and are closely following and adapting to all applicable health and safety guidelines. While conditions vary between countries, cities, municipalities, and facilities, safeguarding measures you may encounter at AAPG events include physical distancing and masking, readily available hand sanitizer, enhanced cleaning and disinfecting protocols, temperature health checks and screenings, minimized touchpoints and cashless payment options.

As personal safety is a shared responsibility, we ask that all participants ensure that they are feeling well and in good health, with no fever or other symptoms related to COVID-19, before showing up at an AAPG event. Any specific delegate obligations will be published in pre-event communications and clearly displayed on signage throughout our venues. Given the ever-changing nature of the pandemic recovery, registrants will receive regular updates and instructions concerning the latest health and safety requirements.

WORKSHOP OUTLINE

Today's oil and gas industry is increasingly turning toward complex stratigraphic-diagenetic and structural plays. Prediction and risking of reservoir heterogeneity, seal integrity and source rock sweet spots are becoming more important than ever before. Currently, prediction and risking rely primarily on stochastic geostatistical approaches, which have seen an impressive development over the last few decades. However, exploration of and production from increasingly complex plays has revealed higher levels of uncertainty in geostatistical reservoir models, because of a combination of factors:

- Statistical models do not fully capitalize on the geological information available
- Prediction and risk assessment usually apply a single statistical approach
- Different geostatistical approaches produce varying predictive models
- Surface geological studies (analogues) have proven highly pronounced rock heterogeneity
- Multiple, concurrent processes with various feedback mechanisms control reservoir quality

In order to meet current and future challenges of increasingly complex prospect and play types, the industry needs to develop new, additional approaches to reservoir, seal and source rock prediction. The key requirement for reducing uncertainty and risk in exploration and production is a rigorous understanding and quantification of geological processes and controls.

Fundamental research in geological process-based forward modeling started in the 1960s to 1970s in academia. However, the exploration industry has only recently started to more widely deploy geological process-based forward modeling. The initial focus has been on depositional modeling using diffusion, Navier-Stokes and hybrid geometric approaches, but more recently a diverse range of approaches is being adopted. They include fuzzy logic, cellular automata and various other reduced-complexity modeling approaches that produce output information on petrofacies, depositional environment, and textural porosity. Forward modelling is also being applied to diagenetic processes using reaction-transport modeling (RTM) or reduced complexity

proxy rules and to geomechanical processes using finite element or discrete fracture network modeling based on post-burial mechanical stratigraphy and local/regional stress patterns. Geological process-based forward modeling has shown highly promising results for e.g., reservoir quality, seal integrity and sweet spot prediction in complex play and trap settings but many challenges persist, including:

- Calibration of numerical input parameters specific to age, climate and structural settings
- How to use physical experiments and outcrop-reservoir analogue studies for model verification
- Automated input parameter optimization
- Multi-scale process-based models from basin to prospect, play and inter-well scale
- Linking and integrating approaches for depositional, diagenetic and structural modeling
- Integrating textural, diagenetic and fault/fracture-related poroperm models
- Sensitivity analysis and quantitative risk assessment of multiple modeling realizations
- Computational expense vs. complexity of numerical approach vs. temporal-spatial resolution
- Effective implementation in existing industry workflows.

In recent years, interest in geological process-based forward modeling has extended to the geothermal exploration industry and the CO₂ storage industry, which face some comparable challenges in predicting subsurface rock parameters and their spatial distribution.

The proposed workshop will include invited experts and interested researchers from both industry and academia. We will concentrate on geological process-based forward modeling rather than on geostatistical modeling, flow simulation, or hydrocarbon systems modeling. Five sessions spread over a period of 2 1/2 days will be dedicated to key challenges in geological process-based forward modeling, finishing with a concluding session to define a practical way forward.

TECHNICAL PROGRAM COMMITTEE

Rainer Zuhlke (Chair)
Saudi Aramco

Cedric John
Imperial College London

Frans van Buchem
KAUST

David Tang
Saudi Aramco

Peter Burgess
University of Liverpool

Dave Cantrell
Cantrell GeoLogic

Nicolas Hawie
Independent Consultant

Scott Bowman
PetroDynamics

Daniel Tetzlaff
Westchase Software Corporation

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AAPG MIDDLE EAST

PLATINUM SPONSOR

US\$ 17,500

- Company logo in the workshop brochure.
- Company logo in all email broadcasts sent to AAPG members to promote the event.
- Company mention in all social media posts.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Prominent logo on all onsite sponsorship acknowledgement displays.
- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo displayed on common slide between technical sessions.
- Company logo included in the onsite technical program.
- Company logo included in the registration confirmation emails.
- Three (3) complimentary registrations to attend the workshop.

GOLD SPONSOR

US\$ 15,500

- Company logo in the workshop brochure.
- Company logo in all email broadcasts sent to AAPG members to promote the event.
- Company mention in all social media posts.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Prominent logo on all onsite sponsorship acknowledgement displays.
- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo displayed on common slide between technical sessions.
- Company logo included in the onsite technical program.
- Company logo included in the registration confirmation emails.
- Two (2) complimentary registrations to attend the workshop.

SILVER SPONSOR

US\$ 12,500

- Company logo in the workshop brochure.
- Company logo in all email broadcasts sent to AAPG members to promote the event.
- Company mention in all social media posts.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Prominent logo on all onsite sponsorship acknowledgement displays.
- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo displayed on common slide between technical sessions.
- Company logo included in the onsite technical program.
- Company logo included in the registration confirmation emails.
- One (1) complimentary registration to attend the workshop.

WORKSHOP DINNER

US\$ 14,000

- Company logo in the workshop brochure.
- Company logo in all email broadcasts sent to AAPG members to promote the event.
- Company mention on all social media posts.
- Company logo and sponsorship title plus a link included on the AAPG website under "Event Sponsors".
- Prominent logo on all onsite sponsorship acknowledgement displays.
- Verbal acknowledgement by the Workshop Chairman at the dinner.
- Company logo displayed on common slide between technical sessions.
- Company logo in the onsite technical program.
- Company logo included in the registration confirmation emails.
- Company logo displayed on table tent cards throughout the dinner.
- Opportunity to invite 10 guests to the dinner.

LUNCHEONS

PER LUNCHEON / 3 PACKAGES ARE AVAILABLE US\$ 5,000

- Company logo in the workshop brochure.
- Company logo in all email broadcasts sent to AAPG members to promote the event.
- Company mention in all social media posts.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Prominent logo on all onsite sponsorship acknowledgement displays.
- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo displayed on common slide between technical sessions.
- Company logo included in the onsite technical program.
- Company logo displayed on tent cards during the luncheon.

COFFEE BREAK SPONSOR

PER DAY / 3 PACKAGES ARE AVAILABLE US\$ 3,500

- Company logo in the workshop brochure.
- Company logo in all email broadcasts sent to AAPG members to promote the event.
- Company mention in all social media posts.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Prominent logo on all onsite sponsorship acknowledgement displays.
- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo displayed on common slide between technical sessions.
- Company logo included in the onsite technical program.
- Company logo displayed on tent cards during the coffee breaks.

DELEGATE BAG

US\$ 7,500

- Company logo in the workshop brochure.
- Company logo in all email broadcasts sent to AAPG members to promote the event.
- Company mention in all social media posts.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Prominent logo on all onsite sponsorship acknowledgement displays.
- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo displayed on common slide between technical sessions.
- Company logo included in the onsite technical program.
- Delegate bags distributed to all workshop attendees to be branded with company logo*

*Bags to be sourced and provided by AAPG

*Sponsorship to be confirmed no less than 2 months prior to the workshop start date

DELEGATE BAG INSERT SPONSOR [EXCLUSIVE]

US\$ 3,000

- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Company logo included in the onsite technical program.
- Company has the exclusive opportunity to include their promotional material in the workshop delegate bag which is distributed to all attendees.

DELEGATE BAG INSERT SPONSOR [NON-EXCLUSIVE]

US\$ 1,500

- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Company logo included in the onsite technical program.
- Company has the opportunity to include their promotional material in the workshop delegate bag which is distributed to all attendees (non-exclusive).

LANYARDS SPONSOR

US\$ 6,000

- Company logo in the workshop brochure.
- Company logo in all email broadcasts sent to AAPG members to promote the event.
- Company mention in all social media posts.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Prominent logo on sponsorship acknowledgement displays.
- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo displayed on common slide between technical sessions.
- Company logo in the onsite technical program.
- Lanyards distributed to all workshop attendees to be co-branded with AAPG and sponsor company logo*

*Lanyards to be sourced and provided by AAPG

WORKSHOP ABSTRACT SPONSOR

US\$ 2,000

- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Prominent company logo included on the 'Digital Abstracts' distributed to all workshop attendees.
- Company logo included in the onsite technical program.

WORKSHOP SURVEY SPONSOR

US\$ 2,000

- Verbal acknowledgement by the Workshop Chairs at the opening of the event.
- Company logo and sponsorship title plus a link included on the AAPG website under 'Event Sponsors'.
- Prominent company logo included on the workshop survey distributed to all attendees.
- Company logo included in the onsite technical program.

NOT FINDING WHAT YOU ARE LOOKING FOR? CONTACT US!

SPONSORSHIP PACKAGES CAN BE CUSTOMIZED TO BEST SUIT YOUR ORGANIZATION'S GOALS FOR BRAND AWARENESS.

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SPONSORSHIP FORM

YES! OUR COMPANY WANTS TO SUPPORT THIS EVENT.
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