

Interview with Dr. Gang Han, 2022 ARMA President

Q1. Why and when did you consider a career in the oil and gas industry?

I was born and raised in China near the second largest oil field in China---The Shengli Oil Field located in the Yellow River Delta in the north of Shandong province. My childhood was surrounded by petroleum engineering professionals. I learned at an early age to love the excitement and the challenges that come with working in the oil and gas industry.

When I graduated from high school, my fate was already determined. I did not hesitate for a second to apply to the China University of Petroleum, majoring in Production Engineering.

Q2. What is the most important thing that helped you as a young professional?

Ironically, skills acquired *outside* the petroleum curriculum were a great benefit. The additional computer and math classes I took expanded my horizons and landed me the first job as a developer for the largest reservoir simulation software company in Abingdon, England. My learnings from the Mars Very Deep Drilling Project with NASA Jet Propulsion Laboratory helped me tackle the challenges at 30,000 ft deep in the Gulf of Mexico with the Global Drilling Department of a major oil company based in Houston, Texas.

Q3. As the president of ARMA, what are the benefits from your perspective to be involved in professional societies?

ARMA is unique in that it is multi-disciplinary involving multi-industries. From petroleum, mining, civil, geothermal to underground storage and utilization, diverse professionals share a similar passion and the fundamentals in geomechanics.

For example, hydraulic fracturing has been a key to the success of unconventional oil and gas developments in the past 15 years. Its rapid development and deployment have everything to do fracture mechanics, which came from the mining industry centuries ago and applied by petroleum engineers in 1940s.

ARMA members may easily connect and collaborate with other disciplines such as geology, geophysics, drilling, completion, production, and reservoir engineering. This is the main reason the International Geomechanics Symposium has attracted all professional societies with petroleum interests, including DGS, SEG, AAPG, SPWLA, EAGE, SPE, and ARMA.

Q4. What skills are needed to become the president of ARMA?

I have been blessed with professional support from the ARMA Board of Directors, Fellows, Technical Committees, and members, including many Aramco colleagues.

I've observed other successful leaders, including DGS former Presidents Mohammed Duhailan, Abdulaziz AlMuhaidib, Khalaf AlTemimi, Abdulaziz Mansour, and the sitting President Nasher AlBinHassan, and my Houston-based colleague Gretchen Gillis who is the President of AAPG.

Three skills stand out:

- **Have a clear vision.** Like many other professional societies, ARMA is facing with unprecedented challenges in this extraordinary era. To navigate, we have established a clear vision to “develop ARMA into a more technological, innovative, diverse, and transparent society contributing to net-zero and the energy transition”.
- **Take informed actions.** Besides regular society meetings, I have been hosting a “President’s Coffee” to meet and hear suggestions from ARMA members. These suggestions are being acted upon. New committees are addressing recruitment, strategic goals, and journal publications. New task forces are in high gear, focusing on communications, Diversity, Equity, and Inclusion (DEI), and sponsorships.
- **Be a good listener.** Reflect critically on yourself and your leadership style.

Q5. ARMA is focusing on expanding its student chapters globally, how important is it to build and nurture these chapters?

It is the students who teach me to be a better leader, rather than the other way around.

Three years ago, we were concerned about ARMA’s future when the Covid pandemic hit. With only four active student chapters and half of the members not renewing their membership, ARMA faced an unprecedented challenge that many other professional societies shared.

Fast forward and today ARMA has grown its student chapters to 18, including the first Middle East chapters at KFUPM and KAUST, along with global participants from China, India, Australia, Columbia, Canada, and the US.

These energetic and creative new generation of students have become the most active advocates for geomechanics. They organize technical seminars, field trips, industry visits, career developments, undergraduate design competition, graduate research competition, photo contests, and many more. These activities are attracting more students onboard.

Every time I interact with students, I am refueled with their passion and inspiration. In my visit to the KAUST chapter, the students were challenged with a 5k “ARMA Run” on its beautiful campus by the Red Sea. The SPE chapter also joined the early 5:30 a.m. weekend morning run.

Q6. What role does rock mechanics play in the current sustainability movement?

If the shale revolution was a big boost for rock mechanics, the energy transition will be transformational. Rock mechanics is one of the enablers for advancing net-zero goals. Recently I have been involved in mineral mining for energy storage, which is another eye-opening arena for rock mechanics. The opportunities are plenty. But they can only be turned into reality if you are well prepared.

Q7. Any advice for DGS members?

It is actually the other way around: I treasure the opportunities to work with and learn from many DGS leaders and colleagues. If I have to make one proposal, as a devoted marathon runner, how about a “DGS-ARMA 5k” run along the beautiful seashore in Al Khobar during my next visit? Let’s all enjoy the inspiring and refreshing experience.