

Dhahran Geoscience Society Mid Year Newsletter

2025

Summary

This newsletter highlights recent activities by the Dhahran Geoscience Society (DGS). We are pleased to announce the formation of a Steering Committee, composed of key leaders of geosciences in the industry, bringing them together to direct and empower our executive committee. Aligned with this formation, DGS has updated its vision and mission, providing inspiration to become the leading society in the region in the near future.

During the first half of this year, DGS 2025 Executive Committee have organized and executed many engaging events that are highlighted in this newsletter. Among these events are novel initiatives that enable further effective engagement of our members. One notable initiative is the DGS Cafe, introduced this year by the technical exchange team, inviting technical experts to engage with members to share knowledge in a small casual setting.

We hope you enjoy reading this edition of the newsletter, and we are looking forward to see you in our future events!

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New Vision and Mission



Vision:

To become the preeminent regional society that enables geoscience and affiliated professionals to acquire technical knowledge, grow professional skills, and engage in public outreach.

Mission:

Empowering industry and academia through the development of members' technical, professional, and social skills, while increasing interest in geosciences within the broader community.



Goals:

- Enable knowledge exchange & transfer
- Support professional development
- Expand society reach in the community



DGS Steering Committee Members

DGS is proud to announce the formation of the DGS Steering Committee, chaired by the SVP of Exploration and composed of strategic members of executive management. This establishes a strategic framework for advancing geoscience initiatives, promote collaboration and engagement, and set the activities for the year. During the session, the committee reaffirmed DGS's commitment to its vision, mission, and goals, which were endorsed by all members present. The committee is planned to meet three times throughout the year to ensure continuous progress, assess the impact of ongoing activities and adapt plans to align with emerging industry trends and community needs. The next meeting will be held in late August, reconvening to highlight achievements and get the direction on the path forward.



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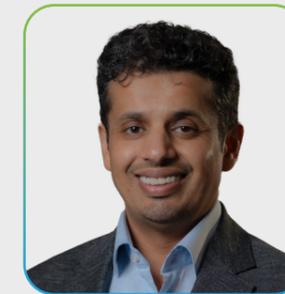
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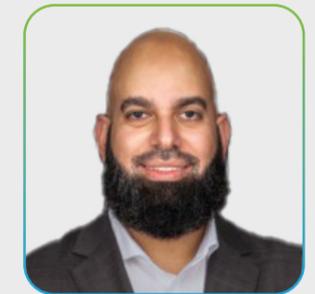
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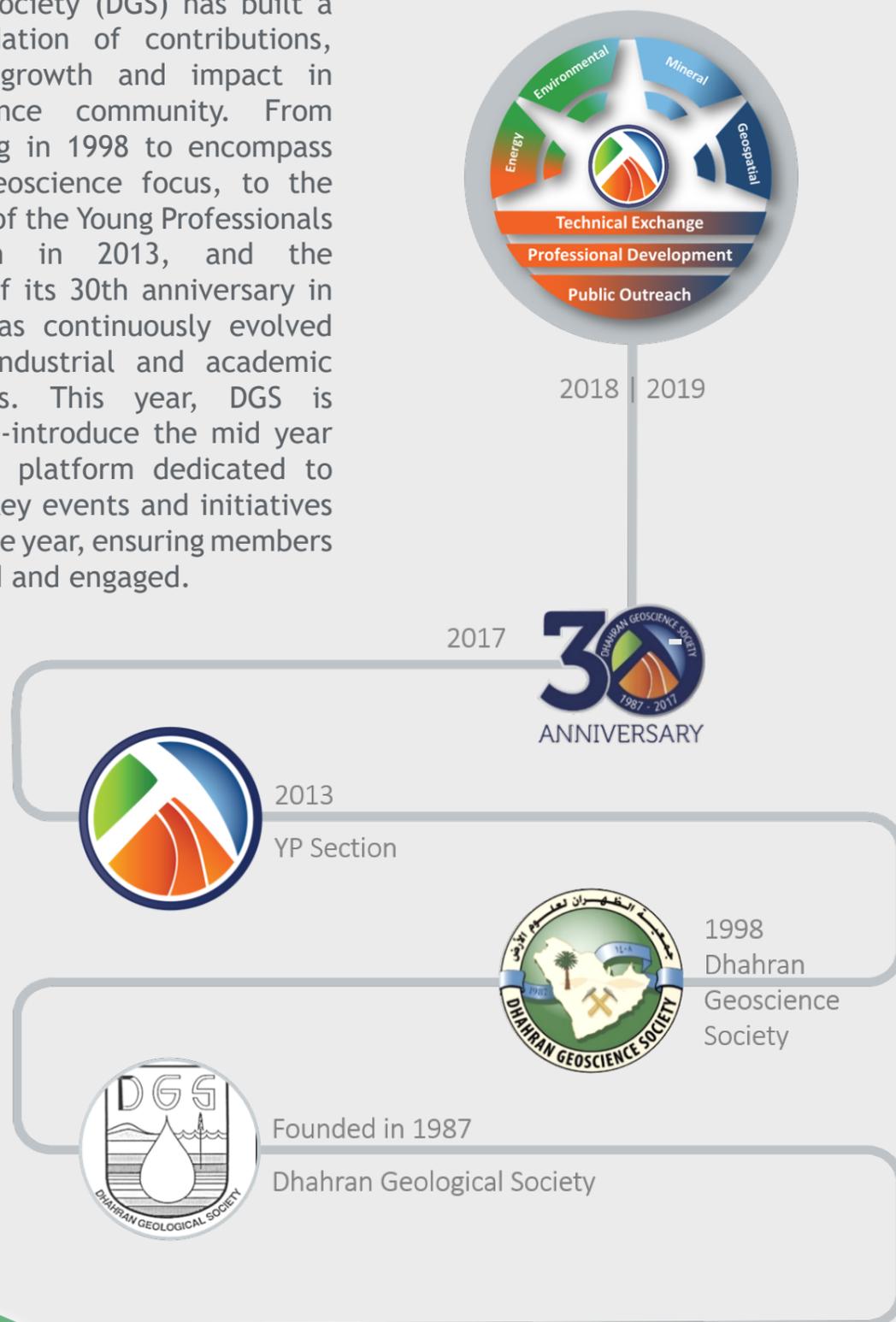
Fares M. Al-Aboud
DGS Past President

Highlights



Our History

Since its founding in 1987, the Dhahran Geoscience Society (DGS) has built a strong foundation of contributions, shaping its growth and impact in the geoscience community. From its rebranding in 1998 to encompass a broader geoscience focus, to the introduction of the Young Professionals (YP) section in 2013, and the celebration of its 30th anniversary in 2017, DGS has continuously evolved to support industrial and academic advancements. This year, DGS is excited to re-introduce the mid year newsletter—a platform dedicated to highlighting key events and initiatives throughout the year, ensuring members stay informed and engaged.



DGS Luncheon

On January 14th, DGS hosted a luncheon featuring Tony Bowman, CEO of PXGeo, who highlighted seismic innovations, including OBN and AUV technologies solutions, and proprietary advancements.

The event was organized by DGS Vice President of Technical Exchange, Ali Alfaraj, and Technical Meeting Officer, Naser Alnaser. Senior management from Exploration, including Vice President Ahmed M. Hakami and Director Aiman M. Bakhorji, attended the event, emphasizing the significance of staying updated on cutting-edge seismic exploration technologies. Mr. Bowman's presentation showcased the potential of these innovations in enhancing discovery rates, reducing costs, and promoting sustainable exploration practices.



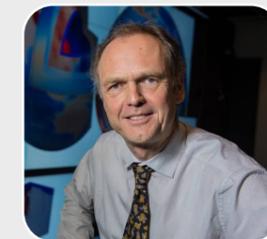
Technical speaker Mr. Tony Bowman, CEO of PXGEO (Center) receiving token of appreciation by Mr. Ahmed Al Hakami, VP CFDG at Saudi Aramco (to his left).



Members of DGS attending Mr. Bowman Technical Luncheon at the Upstream Professional Development Center, Saudi Aramco.

DGS Cafés

On February 12th, DGS hosted two distinguished professors who shared cutting-edge insights into the advances in machine learning and its transformative applications. The event was organized by DGS Vice President of Technical Exchange, Ali Alfaraj, and Technical Meeting Officer, Naser Alnaser.



Dr. Maarten V. De Hoop

Professor of Computational and Applied Mathematics and Earth Science, Rice University.

Presentation: Advances in Scientific Machine Learning and Applications in Seismology and Fluid Dynamics.

Dr. De Hoop captivated the audience by exploring how modern machine learning techniques—such as foundation models, transformers, and contextual learning—are reshaping the fields of seismology and fluid dynamics. He demonstrated how pretrained models like SeisLM can distinguish earthquake signals from noise, achieving over 75% accuracy in classifying foreshocks and aftershocks, and outperforming many state-of-the-art deep learning methods. His insights highlighted the potential for more accurate, efficient, and data-driven approaches in seismic research, paving the way for groundbreaking advances in the field.



Dr. Matti Lassas

Professor, Department of Mathematics and Statistics, University of Helsinki.

Presentation: Mapping Properties of Neural Networks and Inverse Problems.

Dr. Lassas discussed how modern, data-driven approaches—specifically neural networks integrated with manifold analysis—can reveal hidden patterns within classical inverse problems. He examined whether surface measurements, like voltage and current readings, can accurately determine the internal conductivity of a material. This approach not only enriches our theoretical understanding but also opens up practical possibilities in areas such as medical imaging and geophysical exploration, where inferring internal properties from boundary data is crucial.

Stay tuned for more updates and future events from the DGS Café as we continue to explore the frontiers of technology and research.



DGS members engagement during Dr. Maarten V. De Hoop talk as part of DGS café.

On February 12th, DGS welcomed Dr. Toti Larson, who shared an overview of his research, specifically pertaining to stimulating subsurface Hydrogen production from Iron-bearing Rocks.



Dr. Toti Larson

Research Associate and Principal Investigator, Mudrock Systems Research Laboratory (MRSL) Consortium, University of Texas at Austin.

Presentation: Subsurface Hydrogen Production from Iron-Bearing Rocks.

Dr. Larson’s study explores the concept of generating hydrogen by stimulating olivine-rich formations through water injection, leveraging natural reactions that produce hydrogen (H₂). Calculations indicate significant potential yields, with estimates suggesting that 1 km³ of olivine could produce vast quantities of hydrogen. The relationship to GeoH₂ systems and natural seepage was noted, with these environments typically found in subduction zones and rift settings.



Technical speaker Mr. Toti Larson (center) receives a certificate of appreciation from Dr. Ali Alfaraj, DGS VP Technical Exchange

Current drilling projects are investigating hydrogen concentrations in such geological contexts, showing promising results. Laboratory experiments confirm that hydrogen can be generated at relatively low temperatures (~90°C), with catalysts and CO₂ shown to enhance production. Key geological targets include ultramafic, mafic, and banded iron formations. At least two distinct natural hydrogen systems are under evaluation in North America. We were honored to have Dr. Larson present his findings, and paved the way for future collaboration and cross-functional research opportunities.



Engaged DGS members during Dr. Toti Larson talk as part of DGS café.

On May 15th, DGS hosted a Technology Fellow for Geoscience & Energy Transition who highlighted the value of biostratigraphy in improving subsurface interpretation and modeling.



Dr. Mike Simmons

Technology Fellow for Geoscience & Energy Transition, Halliburton.

Presentation: Biostratigraphy: A Critical Tool for Subsurface Characterization.

Mr. Simmons showed how fossil-based age markers enhance geomodelling accuracy, support rock property prediction by linking depositional environments to reservoir quality, and improve facies mapping through better age control and stratigraphic continuity. Biostratigraphy also aids in well correlation by aligning biozones across wells and helping to identify unconformities in the stratigraphic column that may be missed by seismic or log data. The session concluded with applications in Geosteering, where real-time bio stratigraphic data-driven well placement, and in geothermal exploration, where it helps characterize reservoirs and target thermally favorable intervals.

Meet the Expert

On June 1st, DGS hosted a professor who encouraged audience in thought-provoking talk addressing how cognitive types of Geological biases can hinder scientific progress in geology.



Dr. Abdulkader Afifi

Professor, Department of Energy Resources and Petroleum Engineering, KAUST.

Dr. Afifi addressed how biases (e.g. inheritance, analogue, pessimism, optimism, groupthink) and resistance to change can hinder geological scientific progress. Using the Red Sea rifting as a case study, he showed how outdated geological models persisted despite new evidence, due to academic consensus and institutional inertia. He emphasized the need for critical thinking and openness to new data to overcome bias and advance geoscience understanding.



Dr. Afifi illustrates the Red Sea rifting as a case study of how cognitive types of Geological biases can hinder scientific progress in geology.

Ramadan 2025 Basket Campaign

As part of DGS's commitment to community service, on February 26th, DGS launched its annual Ramadan Basket campaign in collaboration with Al-Barakah Charity Association. Through this initiative, approximately 400 baskets were distributed to families in need. This effort aims to support those facing hardship by providing them with the essential supplies, thereby ensuring they can observe the holy month of Ramadan with ease and comfort. We extend our gratitude to everyone who contributed to making this campaign a success. DGS remains dedicated to fostering a spirit of unity, generosity, and compassion within the community.



DGS members volunteer for Ramadan Basket campaign with Al-Barakah Charity Association.

DGS 2025 Townhall Meeting

On February 27th, DGS successfully hosted its first Townhall, providing members with a platform to engage with the executive committee and gain insights into the organization's vision. The event opened with remarks from DGS president Ezzedeem Alfataierge, who introduced the executive committee's general plan, along with the newly defined mission and vision. This was followed by a panel discussion featuring the Vice Presidents, who outlined their key plans and goals. This Townhall reinforces DGS's commitment to transparency, collaboration, and growth with its members.



DGS hosts first Townhall, unveiling new mission, vision, and VP plans.

DGS-KFUPM Student Chapter Highlights

On March 13th, the DGS-KFUPM Opening Ceremony and Introductory Program marked a significant milestone in fostering a dynamic geoscientific academic culture at King Fahd University of Petroleum and Minerals. 'Under the patronage of the Dhahran Geoscience Society (DGS) and the College of Petroleum Engineering and Geosciences (CPG), this event marked the official launch of the DGS-KFUPM Student Chapter. With a forward-thinking vision, the chapter aims to foster a dynamic bridge between academia and the geoscience industry, promoting collaboration, innovation, and knowledge sharing.

The program served as an engagement platform for students, faculty, and industry professionals to explore DGS-KFUPM's mission, upcoming initiatives, and opportunities for academic-industry collaboration, in alignment with Saudi Arabia's Vision 2030. Emphasis was placed on fostering a culture of innovation, interdisciplinary learning, and inclusivity aimed at elevating KFUPM's global academic footprint.



KFUPM students during the DGS-KFUPM Student Chapter under patronage of DGS and CPG.

DGS-KAUST Student Chapter Highlights

The DGS-KAUST Student Chapter has had a dynamic and enriching start to 2025. On February 27th, we had the pleasure of hosting Thomas Jerome, M.Sc., Director of Geomodeling Knowledge who delivered a highly informative talk titled “Geomodeling for O&G projects, and by extension for CCUS, geothermal or lithium brine mining.” His presentation offered students and researchers valuable insights into subsurface modeling techniques used across various industries, sparking engaging discussions on the future of geomodeling in sustainable resource development.

Just a day earlier, on February 26th, the chapter organized a lively Geoscience Quiz Night, where students tested their knowledge on geology, the Dhahran Geoscience Society, and general earth science trivia. The event was hit-packed with laughter, teamwork, and of course delicious pizza.

On April 24th, DGS-KAUST Student Chapter organized a Games Night, bringing together their student members for an evening of board and card games. The event was well-attended and filled with laughter and camaraderie, so much so that it’s already on their calendar to repeat.



Mr. Thomas Jerome with KAUST students at DGS-KAUST Student Chapter.

On May 8th, they had the pleasure of hosting Dr. Niccolò Mengoni for an engaging online talk on “Drones and Virtual Geosciences.” Dr. Mengoni showcased innovative applications of drone-based photogrammetry and 3D modeling in geological fieldwork, with compelling case studies from Jizan, Saudi Arabia. His talk emphasized how virtual outcrops and high-resolution topographic data are transforming the way geoscientists interpret complex structures and stratigraphy remotely.

To close the mid year cycle, the chapter was invited to attend a week-long Petrophysics course at the end of May, delivered by Joe Bildstein. This comprehensive course on petrophysical fundamentals was an excellent learning opportunity and was attended by several student members and DGS officers. Among all their activities, the highlight of the past six months was undoubtedly the visit to Aramco Research Center at KAUST, which was attended by over 40 students. This unique experience gave members a firsthand look at cutting-edge research in energy and geosciences, strengthening the connection between academia and industry.



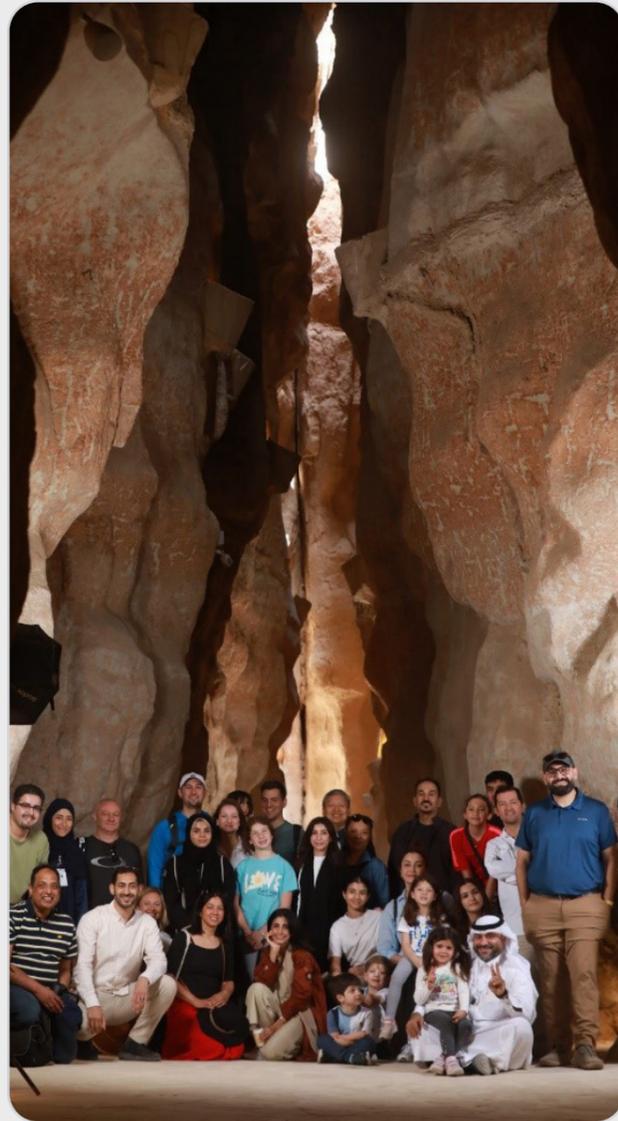
DGS members and students attend Mr. Joe Bildstein's petrophysical fundamentals course.



KAUST students during their visit to Aramco Research Center at KAUST

DGS First Field Trip to Al-Ahsa

On April 19th, the DGS embarked on its inaugural 2025 field trip to the historic region of Al-Ahsa, marking a resounding success that was both culturally enriching and geologically insightful. Our journey took us through the breathtaking expanse of the world's largest palm tree oasis, where we marveled at the unique formations of Al Qarra mountain and uncovered the rich heritage of the area. As we immersed ourselves in the local atmosphere, we gained a deeper understanding of Al-Ahsa's agricultural significance and indulged in the region's delectable cuisine, creating an unforgettable experience that was equal parts education and adventure. We extend our sincerest gratitude to the DGS committee, volunteers, and participants whose collective efforts made this trip an outstanding success, and we look forward to many more exciting expeditions to come!



DGS First Field Trip to Al-Ahsa

DGS Formal Dinner Meeting

On May 4th, we hosted a formal dinner meeting, "Unifying Through Geophysics: Purpose, Passion, Potential", featuring John Eastwood, President of the Society of Exploration Geophysicists (SEG). The event brought together colleagues and peers from across our diverse community, providing a unique opportunity for connection and networking. John Eastwood's presentation highlighted the significant role and contributions of SEG worldwide, showcasing the organization's impact on the geophysics community. The audience, comprising of students, young professionals, SMEs, and management, was engaged and enthusiastic, with a lively Q&A session that followed.



SEG President Mr. John Eastwood (center) receives token of appreciation by Mr. Samer Al-Ashgar, SVP of Exploration (to his left) at DGS dinner meeting.

The event provided a valuable platform for attendees to learn from John's expertise and experience, and to discuss topics relevant to our industry. The evening concluded with a sense of unity and purpose, reflecting the event's theme.

We were pleased to see attendees from various levels of our organization come together, sharing ideas and perspectives. The event demonstrated our commitment to fostering a sense of community and collaboration. We're grateful to John Eastwood for sharing his insights with us.



DGS Executive Committee members with Mr. John Eastwood, President of SEG during DGS formal dinner meeting

2025 DGS Executive Committee Members



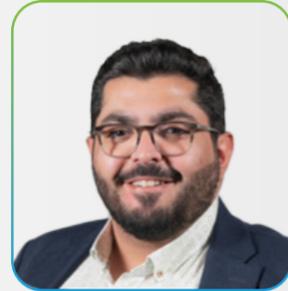
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Ezzedeem AlFataierge



President-Elect
Noha Allababidi



Field Trip Coordinator
Mohammed AlGhadeer



Treasurer
Abdulaziz AlUmrn



Secretary
Renad AlGhamdi



VP Technical Exchange
Ali AlFaraj



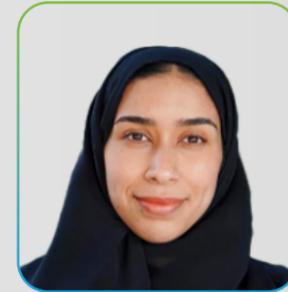
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Naser AlNaser



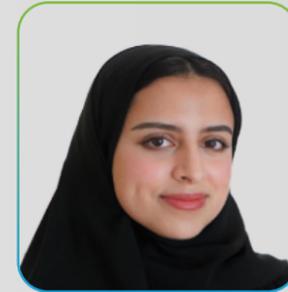
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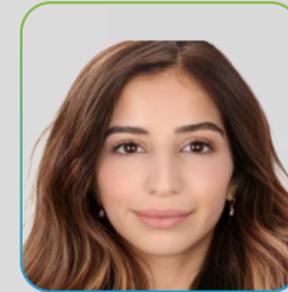
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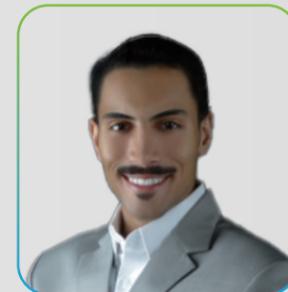
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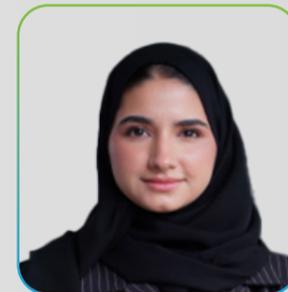
Young Professional Officer
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VP Public Relations
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Digital Media Officer
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Non-profit society, sponsored by

