

Carbon Capture and Storage in Saline Aquifers

10 - 14 July 2023, Department of Geoscience & Engineering, Delft, The Netherlands

This school covers the basics of carbon capture, utilization and storage in subsurface formations with special focus on saline aquifers. The underlying trapping mechanisms will be discussed from pore-level to large-scale applications.

Topics Covered:

- CCS in aquifers and depleted oil and gas fields
- CO₂ Trapping mechanisms
- Pressure management in aquifers
- Rock-fluid interaction and geochemistry involved in CCS
- CO₂-EOR to CCUS
- Numerical modeling of CO₂ storage at various scales
- Detection of leak paths
- Surveillance and monitoring

Organizing committee

Dr. Rouhi Farajzadeh
Dr. Denis Voskov

Stevinweg 1
2628CN, Delft
The Netherlands

Registration

For registration, please send an email to delftsummerschool-citg@tudelft.nl

Registration fee

- \$2500 attendees from industry
- \$1000 academic staff and Post doc researchers
- \$600 PhD students

We can admit limited number of participants. People who register earlier will have priority. Registration deadline is 30 April 2023.

For more information, visit <https://www.tudelft.nl/citg/delft-summer-school/>

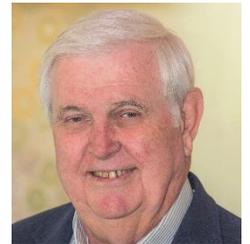
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Marcella Dean has over 20 years of experience as a geophysicist in the energy industry and is currently employed by Shell in the Netherlands. She is leading a subsurface specialist team responsible for developing the next generation of geomechanics, reactive transport modelling and containment monitoring capabilities. The focus is to ensure safe and efficient CO₂, H₂, and energy storage, managing induced seismicity risks, and safeguarding hydrocarbon integrity. Marcella holds a PhD degree in Engineering and Applied Sciences from University of New Orleans. Marcella was the Measurement, Monitoring and Verification (MMV) lead for the former Peterhead CCS project and delivered technology for the Quest CCS project. She leads and participates in collaborations with external research consortia, has grown a substantial network of world class experts in her field and is known as one of Shell's main experts in risk-based MMV for CO₂ storage. Marcella was raised in Switzerland, studied and worked in New Orleans, Brunei and the Netherlands.

Larry W. Lake is a professor in the Department of Petroleum and Geosystems Engineering at The University of Texas at Austin where he holds the Shahid and Sharon Ullah Chair. He holds BSE and PhD degrees in Chemical Engineering from Arizona State University and Rice University, respectively. He is the author or co-author of more than 100 technical papers, four textbooks and the editor of three bound volumes. Dr. Lake has served on the Board of Directors for the Society of Petroleum Engineers (SPE), won the 1996 Anthony F. Lucas Gold Medal of the AIME, the Degoyer Distinguished Service Award in 2002, and has been a member of the US National Academy of Engineers since 1997. He won the SPE/DOE IOR Pioneer Award in 2000.



Tony Kovscek is the Keleen and Carlton Beal Professor at Stanford University where he joined the faculty in 1996. He served as the Chair of the Energy Resources Engineering Department from 2012 to 2018. Kovscek and his research group develop and apply advanced imaging techniques, experimentation, and models to understand complex multiphase flows of gas, water, and organic phases in natural and manufactured porous media with applications in water carbon storage, increased utilization of carbon dioxide for subsurface applications, hydrogen storage, and water reuse. He holds B.S. and Ph.D. degrees in Chemical Engineering from the University of Washington and University of California at Berkeley, respectively.

Jeroen Snippe is a Principal Reservoir Engineer at Shell and an expert in CO₂ storage, Containment and Integrated Reservoir Modelling. After obtaining his PhD in theoretical physics (1997) from Leiden University (Netherlands), he joined Shell in the reservoir simulator development team. Between 2003 and 2009 he worked in Aberdeen (UK) on North Sea well & reservoir management and field redevelopment. In 2009 he moved back to The Netherlands and specialised in research and deployment of Reactive Transport Modelling technologies and specialist simulation for CO₂ sequestration as well as acid gas injection, hydrogen storage and water injection. He regularly provides expert advice towards ongoing operations and planned projects at Shell, and also shares his knowledge externally through peer reviewed publications.



Raul Valdez is a development manager for Kinder Morgan CO₂ Houston, Texas since 2016 and 23 years before that at Shell/Altura/Oxy as the Principal Technical Expert (PTE) in gas injection and sequestration. He is currently maturing multiple projects in Yates Field including CO₂ Expansion, Transition Zone expansion, surfactant, engineered waterflood, and foam. His career began in 1991 working on the largest CO₂ injection field in the world, the Wason Denver Unit. Thereafter he spent several years working various, large CO₂ projects for Altura/Oxy. Rejoining Shell, he then worked on a global studies team on various problems around the globe including assignments in the Netherlands and Oman. He has lectured internally gas injection courses and surveillance. He has numerous patents pending in gas injection related topics and has authored numerous papers. He received his BS in nuclear engineering (fusion focus) and minor in mechanical engineering from the Massachusetts Institute of Technology.

Denis Voskov is an Associate Professor at the Department of Geoscience and Engineering, TU Delft, and Adjunct Professor at the Department of Energy Resources Engineering, Stanford University. He is leading a research group on the development of advanced simulation capability for energy production and storage processes related to deep subsurface. Before joining TU Delft, Denis was a Senior Researcher at the Department of Energy Resources Engineering, Stanford University, Chief Technology Officer of Rock Flow Dynamics Company (developer of t.Navigator), Chief Engineer at YUKOS EP company, and a leading specialist at the Institute for Problems in Mechanics, Russian Academy of Sciences.

