

Mountjoy IV Conference

10–13 August 2025, Montreal, Canada

Sunday, 10 August

17.00–19.00 *Pre-Conference Icebreaker*
Redpath Museum

Monday, 11 August

7.30–8.30 *Registration and Coffee*
8.30–8.40 *Conference Welcome and Introduction*

Carbonate Depositional Systems Technical Talks

8.40–9.00 A deep-water refuge for reefs during extreme ocean warming: Triassic metazoan-algal reefs originated on mesophotic to dysphotic carbonate platform slopes following the end-Permian extinction—*Brian Kelley, Xiaowei Li, Evan Ritchey, Joshua Garber, Demir Altiner, Meiyi Yu, Jonathan Payne, Daniel Lehrmann, Marcello Minzoni, Clark Sherman*

9.00–9.20 TBD

9.20–9.40 Why is the bucket empty? An underfilled carbonate lagoon in the Red Sea—*Volker Vahrenkamp, Indah Putri, Akbar Wicaksoni, Thomas Lüdman, Christian Betzler, Gianluca Frijia, Anna Cipriani, Alexander Petrovic*

9.40–10.00 *Break*

Carbonate Cyclicity Technical Talks

10.00–10.20 Response of Ediacaran shallow marine carbonates to orbital climate forcing: insights for thrombolitic patch reefs and laminites of the Huns microbial platform—*Ajani Bissick, Bianca Spiering, Andrea Boscaini, Joshua Davies, Galen Halverson, Brandt Gibson, Marc Laflamme, Frederik Hilgen*

10.20–10.40 Impact of astronomically-driven climatic and oceanographic cyclicity on microbial carbonate sediment production and facies distribution in a semi-restricted basin: Upper Jurassic Smackover Formation, Alabama—*Marcello Minzoni, Berry Tew, Bradford Prather*

10.40–11.00 Ordovician carbon cycle and sequence stratigraphy: insight from the St Lawrence platform, Quebec—*Claire Musajo, Heloïse Pinon, Ajani Bissick, Morgann Perrot, Joshua Davies, Galen Halverson*

11.00–11.20 *Poster popups*

11.20–12.00 **Poster Viewing**

12.00–13.30 *Lunch*

Microbialite Technical Talks

- 13.30–13.50 Pre-salt lacustrine reservoirs; new ideas and concepts for the structural evolution of the conjugate margin, lake hydrology and depositional models—*Darryl Green*
- 13.50–14.10 Sea-level and paleoenvironmental controls on thrombolite reef growth following rapid marine flooding of an epicontinental basin, basal Windsor Group (Mississippian), Cape Breton, Canada—*Edward Matheson, Zailynne Durant, George Bradley*
- 14.10–14.30 Evolution of diagenesis and reservoir quality in Brazilian pre-salt resedimented carbonate rocks from the Santos Basin—*Mariane Cristina Trombetta, Sabrina Danni Altenhofen, Jaques Soares Schmidt, William Da Silveira Freitas, Rosalia Barili, Amanda Goulart Rodrigues, Luiz Fernando De Ros*
- 14.30–14.50 *Break*

Microbialite Technical Talks

- 14.50–15.10 Carbonate-rich lacustrine systems—the Green River Formation, western USA and the pre-salt of Brazil—chemistry and climate, shorefaces, microbes, and minerals—*JF (Rick) Sarg*
- 15.10–15.30 Early marine microbial diagenesis in the Abu Dhabi Lagoon (UAE): field experiments and temporal quantification using CT-scan and SEM—*Thomas Teillet, Ronell Sicat, Domingo Lattanzi, Charlène Odobel, Elisa Garuglieri, Kai Hachmann, Daniele Daffonchio, Mónica Sánchez-Román, Volker Vahrenkamp*
- 15.30–15.50 Stratigraphy and preservational variation of reef-building microbialites in the Tonian Reefal assemblage (Fifteenmile Group) of Yukon—*Charlotte Spruzen, Galen Halverson*
- 15.50–17.00 **Poster Viewing**

Monday Poster Presentations

- Lithocodium presence in the Jurassic Arabian Plate carbonates: paleontological and diagenetic insights into enhancing reservoir quality—*Maha Almulla*
- Geochemical variations in the large benthic foraminifera *Sorites orbiculus* from a land-attached Red Sea lagoon, Saudi Arabia: potential proxies for monitoring environmental conditions in modern and ancient lagoons—*Francesca Giovenzana, Klimentsi Cherviakouski, Ksenia Kaprielova, Volker Vahrenkamp*
- From the intertidal to the aphotic—microbes are a ubiquitous and essential component of lithifying carbonate platforms in the Red Sea—*Kai Hachmann, Elisa Garuglieri, Rawan Alhazmi, Ramona Marasco, Viswasanthi Chandra, Daniele Daffonchio, Volker Vahrenkamp*
- Travertine facies and depositional environment of active and fossil thermogenic travertine developed in Guelma are north-east Algeria—*Ouided Laziz, Ait abdelouahab Djaouza, Nasri Fatah*

- Impact of sea-water chemistry on carbonate sediment production and stratigraphic architecture of progradational microbial-oolitic carbonate margins—*Marcello Minzoni, Souvik Bhattacharjee, Berry Tew, Bradford Prather*
- New insights on the evolution of carbonate platforms in the Red Sea—*Tihana Pensa, Guillaume Baby, Thomas Teillet, Antoine Delaunay, Antonio Delgado-Huertas, Abdulkader Alafifi*
- Exploring the mesophotic geomorphologies of the Saudi Arabian Red Sea continental shelf—*Thomas Teillet, Guillaume Baby, Antoine Delaunay, Arman Kudbanov, Ronell Sicat, Abdullah Mandili, Dimitris Sakellariou, Fabio Marchese, Francesca Benzoni, Carlos Duarte, Abdelkader Al Afifi*
- Characterization of thrombolites in the Huns platform of the Nama Group, Namibia—*Ava Whitehead, Ajani Bissick, Galen Halverson*
- 500-year wet/dry cycles and extreme hydroclimate events between early-1100s and mid-1200s recorded in Deep Springs Lake, California—*Huifang Xu, Jianru Cheng*

Tuesday, 12 August

7.30–8.30 *Coffee*

8.30–8.40 *Day 2 welcome*

Carbonate Diagenesis Technical Talks

8.40–9.00 Late Permian Zechstein carbonates of the Utsira High, Norwegian North Sea—*Niels Rameil, Ingrid Gianotten, Israel Polonio, Kasper Blinkenberg, Lars Stemmerik*

9.00–9.20 Aragonite neomorphism, aragonite-calcite seas and pCO₂—*Arthur Saller*

9.20–9.40 A new method for reconstructing hydrocarbon accumulation history of deep to ultra-deep carbonate reservoirs—*Anping Hu, Anjiang Shen*

9.40–10.00 *Break*

Carbonate Diagenesis Technical Talks

10.00–10.20 Pore to core plug scale characterization of porosity and permeability heterogeneities in a Cretaceous carbonate reservoir using laboratory measurements and digital rock physics, Abu Dhabi, United Arab Emirates—*Abdulquadri Alabere, Mohamed Soufiane, Mohammad Alsuwaidi, Daniel Morad, Fadi Nader, Fateh Bouchalaa, Emad Al-Shalabi, Osama Al Jallad*

10.20–10.40 TBD

10.40–11.00 Human-induced diagenetic alterations in fine-grained carbonates driven by seawater flushing: Tor Formation, Chalk Group, Danish North Sea—*Umid Kakemem, Kasper Blinkenberg, Julian Espana Zapata, Kresten Anderskov*

11.00–11.20 *Poster popups*

11.20–12.00 ***Poster Viewing***

12.00–13.30 *Lunch*

Karst/Structural Geology and Fractures Technical Talks

13.30–13.50 Geothermal carbonate reservoirs—exploiting a karstified carbonate reservoir in the north alpine foreland basin, Germany—*Joachim Amthor, Daniel Bendias, Kilian Beichel*

13.50–14.10 Karst dynamics in Algeria: understanding fluid–rock interactions and their societal implications—*Hamida Diab*

14.10–14.30 Dolomitization in the Devonian Nowshera Formation in the Peshawar Basin, Swabi, Pakistan—*Hasnain Shah, Waqar Ahmed, Farhan Ghani, Muhammad Rayyan, Faisal Shahzad, Saleem Ullah, Ijaz Ahmad, Luqman Ahmad, Murray Gingras, Mumtaz Muhammad Shah*

14.30–14.45 *Break*

14.45–15.45 *TBA*

15.50–17.00 ***Poster Viewing***

18.30–20.30 ***Conference Dinner***

Tuesday Poster Presentations

- Petrographic characteristics of Friktia Onyx marble, northeastern Algeria—*Ait Abdelouahab Djaouza, Nasri Fatah, Ouidad Laziz*
- Multi-scale fault connectivity in deep shale gas reservoirs: insights from structural topological analysis and its implications for deep shale gas exploration and development in the southern Sichuan Basin—*Mohammed Gaghaman, Yangwen Pei*
- Development and application of new technologies of trace element testing for carbonate minerals—*Feng Liang, Anping Hu*
- Zebra textures in fault-controlled, hydrothermal dolomite bodies: coupled mechanisms of replacement, deformation, and cementation—*Cole McCormick, Ernest Rutter, Hilary Corlett, Matthew Steele-MacInnis, Eivind Block Vagle, Fiona Whitaker, Cathy Hollis*
- Fluid activities and reservoir forming mechanisms associated with strike-slip faults: a case study of Ordovician in Fuman area, Tarim Basin, northwest China—*Zhanfeng Qiao, Tianfu Zhang, Jiajun Chen*
- The equipment innovation of dissolution modelling and its application on porosity formation and preservation in deep-buried carbonate—*Min She, Anping Hu*
- Mechanism of pore formation and preservation in deep to ultra-deep carbonate reservoirs—*Anjiang Shen, Anping Hu*
- Mechanism of pore development and preservation in deep limestone reservoirs: a case study of the Permian formation in Sichuan Basin—*Anjiang Shen, Wenzheng Li*

Wednesday, 13 August

7.30–8.30 *Coffee*

8.30–8.40 *Day 3 welcome*

Carbon capture, utilization, and storage (CCUS)/Critical Mineral Resources (CMR) Technical Talks

8.40–9.00 A core-based assessment of the Leduc Formation carbonates in central Alberta, a prime candidate for CO₂ sequestration—*Tyler Hauck, David Herbers, Mark Mallamo*

9.00–9.20 CCS in fine-grained carbonate reservoirs—experiments, petrography, and modeling of the Chalk Group, Danish North Sea—*Umid Kakemem, Kasper Blinkenberg, Nikolai Andrianov, Nicolas Bovet, Knud Dideriksen, Peter Frykman, Wael Fadi Al-Masri, Samira Mohammadkhani, Hanne Dahl Holmslykke, Theis van Beek Pedersen, Behzad Rostami, Kresten Anderskov*

9.20–9.40 An overview of the Devonian analogue investigation—revisiting the Devonian of western Canada with 3D digital outcrop models—*AJ MacNeil*

9.40–10.00 *Break*

Carbonate Dolomitization Technical Talks

10.00–10.20 The role of recrystallization in shaping the geochemical signature of dolomite: an experimental study—*Cole McCormick, Dalton Hardisty, Chelsea Pederson, Watts Deitrich, Isaac Bondzie-Selby, Mohammed Hashim, Kimberly Lau*

10.20–10.40 Dolomite recrystallization as characterized by crystal texture and Mg-C-O isotopes: a case study of Lower Ordovician dolomite from Tarim Basin—*Hairuo Qing, Zhanfeng Qiao, Siyang Zhang*

10.40–11.00 Warm acidified seawater and dolomite formation—*John Rivers*

11.00–11.20 *Poster popups*

11.20–12.00 ***Poster Viewing***

12.00–13.30 *Lunch*

Carbonate Dolomitization Technical Talks

13.30–13.50 Impact of igneous intrusions on dolomitization: a case study of Devonian carbonates in the Peshawar Basin, Pakistan—*Waleed Khan, Waqar Ahmed, Saad Kawnain, Jawad Zaib, Attaullah*

13.50–14.10 Bioturbation controls patterns of dolomitization in Lower Jurassic carbonates on central Saudi Arabia—*Moaz Salih, Hassan Eltom, Robert Goldstein, Francisco Rodríguez-Tovar*

14.10–14.30 Diatoms diminish dolomite—*Huifang Xu, Yihang Fang, Franklin Hobbs*

14.30–14.45 *Final Remarks and closing of talks*

14.45–15.00 *Break*

15.00–16.00 **Poster Viewing**

16.00 Informal Sundowner

Wednesday Poster Presentations

- Mn-driven AOM generating the ^{13}C -depleted Marinoan cap dolostones—*Chunfang Cai, Dawei Liu, Yongjie Hu*
- Energy transition opportunities in an old oil field—Judy Creek Beaverhill Lake Unit, Alberta, Canada—*Andre Chow, Michelle Lund, Joel Collins*
- Age and temperature of authigenic carbonates associated with lithium-bearing illite claystones at Thacker Pass, Nevada, USA—*Kevin Hatton, Troy Rasbury, Gregory Henkes, Jason Kirk, Chris Russo, Francis Sousa, Kathleen Wooton, Steven Jaret, Thomas Benson*
- The genesis of dolomite and dolomite reservoirs: a review, progress, and prospects—*Tianjie Jin, Anjiang Shen*
- Maximizing oil recovery and carbon storage at Redwater Leduc: a blueprint for sustainable energy development—*Michelle Lund, William Sawchuck, Andre Chow*
- Control of stylolites on the dolomitization and primary texture in the Kawawgarh Formation, northern Pakistan—*Muhammad Jawad Munawar, Saif Ur Rehman, Naveed Ahsan*
- Diagenetic processes associated with pre- and post-orogenic events in the late Triassic carbonate successions, Upper Indus Basin, Pakistan—*Mumtaz Muhammad Shah, Imran Ahmad, I Cantarero, JD Martin-Martin, A Travé*
- Distribution of the Permian Guadalupian dolostone in the eastern Sichuan Basin: implications for the constraining effect of lithofacies on hydrothermal dolostone geobodies—*Lu Shi, Ziye Lu, Fei Li, Hairuo Qing, Ning Ye, Bei Zhu, Siyang Zhang*
- Genesis of dolomite of the Middle Permian Maokou formation in central Sichuan Basin: based on petrological, geochemical, and chronological evidence—*Jianfeng Zheng*