

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 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*
- 9.20–9.40 Why is the bucket empty? An underfilled carbonate lagoon in the Red Sea—*Volker Vahrenkamp**, *Indah Putri*, *Akbar Wicaksoni*, *Thomas Lüdmann*, *Christian Betzler*, *Gianluca Frija*, *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*
- 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 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*
- 10.40–11.20 *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

- 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*
- Genesis of dolomite of the Middle Permian Maokou formation in central Sichuan Basin: based on petrological, geochemical, and chronological evidence—*Jianfeng Zheng**

*Presenter