

# 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 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, Charlene 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*

- 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*
- Diatoms diminish dolomite—*Huifang Xu\**, *Yihang Fang*, *Franklin Hobbs*

## **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 pCO<sub>2</sub>—*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*, *Zhanfeng Qiao\**
- 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*
- 10.40–11.00   *Poster popups*
- 11.00–12.00   **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 Gaghman\**, *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*

### ***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 CO<sub>2</sub> 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*
- 14.10–14.30 500-year wet/dry cycles and extreme hydroclimate events between early-1100s and mid-1200s recorded in Deep Springs Lake, California—*Huifang Xu\**, *Jianru Cheng*
- 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