



# UNDERWATER MINERALS CONFERENCE 2025



## Sunday, November 9, 2025 - WELCOME RECEPTION

INTRODUCTION by Dr. John Wiltshire - Welcome; Introduce IMMS, then Speech by HOST - Tom Frazer, Dean of USF CMS

15:00	PRE-REGISTRATION STARTS - Desk located at the Reception
<b>17:00</b> begin <b>21:00</b> end	<b>WELCOME COCKTAIL AT THE COCONUT ROOM OUTSIDE (open bar)</b>

## Monday, November 10, 2025 - TECHNICAL SESSIONS I, II, III

#	Time	Presenter	Affiliation	Country	Title
	8:00	REGISTRATION STARTS - Desk located in front of the Conference Room			
	<b>8:30</b>	Session Chair Dr. John Wiltshire	University of Hawaii	USA	INTRODUCTION to Presentations of <b>Technical Session I - Updates from Jurisdictions with Marine Minerals</b>
1	8:35	Paul O. Knorr	Bureau of Ocean Energy Management	USA	Improving Offshore Minerals Management in the United States
2	9:00	John Parianos	Cook Islands Seabed Minerals Authority	Cook Islands	Recent and Forthcoming Seabed Minerals Developments in the Cook Islands
3	9:25	Hilde Braut	Norwegian Offshore Directorate	Norway	Seabed mineral activity on the Norwegian continental shelf
	9:50	Session Chair Dr. John Wiltshire	University of Hawaii	USA	INTRODUCTION to Presentations of <b>Technical Session II - Latest Developments in Marine Mineral Exploration &amp; Related</b>
4	9:55	Adam Soule	Ocean Exploration Cooperative Institute	USA	Ocean Exploration benefits for seabed mineral decision-making in the Pacific: Ocean Exploration Cooperative Institute
5	10:20	Stefan Wegerer	Bauer Maschinen	Germany	New Strategies in Seabed Geotechnical Exploration - from Scientific Drilling to Marine Minerals Prospection
	<b>10:45</b>	<b>Coffee Break - 20 minutes</b>			
6	11:05	Yoon-mi KIM	Korea Institute of Geoscience and Mineral	Korea	Exploring Rare Earth Elements in Deep-Sea Sediments: From Pacific-Wide Distribution to Western Pacific Exploration
7	11:30	John Halkyard	Deep Reach Technology	USA	Deep Sea Rare Earth Enriched Sediments: Are they a potential economic source of REEs?
8	11:55	Jeroen Ingels	Earth Sciences New Zealand	New Zealand	Exploring New Zealand's abyssal ferromanganese nodule fields
9	12:20	Simon Freeman	MITRE	USA	New Technologies for Seafloor Minerals Survey
	<b>12:45</b>	<b>LUNCH Break- 1 hour</b>			
10	13:45	Simon Graham	Soil Machine Dynamics	UK	The Significant Benefits of a DC Power System for Deep Water Polymetallic Nodule Mining
11	14:10	Craig Wallace	Deep Sea Vision	USA	The mineral survey migration with AUV, from understanding to extraction
12	14:35	Brian Connon	Saildrone, Inc	USA	Exploratoin and Discovery Using Long Endurance Uncrewed Surface Vehicles
	<b>15:00</b>	Session Chair Mark Luther	University of South Florida	USA	INTRODUCTION to Presentations of <b>Technical Session III- Risk and Management of Marine Minerals</b>
13	15:05	Tanga Morris	SBMA	Cook Islands	The Cook Islands Ecosystem Based Management Framework and Strategic Environmental Assessment for Seabed Minerals
14	15:30	Farida Mustafina	Norwegian University of Science and Technology	Norway	Corporate perceptions of risk in the deep-sea mining sector
	<b>15:55</b>	<b>Coffee Break - 20 minutes</b>			
15	16:15	Keisuke Nishi	Deep Ocean Resources Development Co., Ltd.	Japan	Study on Improving the Economic Feasibility of Polymetallic Nodule
16	16:40	Elena Guillet	Vinson & Elkins RLLP	UK	Deep-Sea Mining: Risks, Challenges, and Lessons from Offshore Industries
17	17:05	Jim Wodehouse	Deep Reach Technology Inc.	USA	Status of Discussions with Regulatory Authorities for the Shipping of Polymetallic Nodules in Accordance with the International Maritime Solid Bulk
18	17:30	Frank Lim / Andrew Lipman	Marine Technology Innovation Center / ABS	China	International Technical Standards for Seabed Mining
	<b>18:00</b> begin <b>21:00</b> end	<b>WOOLPERT SPONSORED COCKTAIL AT THE ST. PETERSBURG INNOVATION HUB (free to all UMC participants, buses from the hotel lobby will leave from 6pm to the Hub)</b>			



# UMC 2025 UNDERWATER MINERALS CONFERENCE



Tuesday, November 11, 2025 - TECHNICAL SESSIONS IV, V and VI

#	Time	Presenter	Affiliation	Country	Title
	8:30	Session Chair Dr. Charles Morgan	Moana Hohonu Consulting	USA	INTRODUCTION to Presentations of <b>Technical Session IV - Polymetallic Sulphide (aka SMS) Deposits</b>
19	8:35	Julian Malnic	Magellan Ltd.	Australia	Back to the Future – The Bismarck Sea SMS Deposits are Now Economic
20	9:00	Yuichi Morishita	Shizuoka University	Japan	SIMS discovers invisible gold in pyrite from the high-grade seafloor hydrothermal deposits in the Higashi-Aogashima caldera, Izu-Ogasawara arc,
21	9:25	Alden Denny	Adepth Minerals	Norway	Sulphides Are Everywhere: Evidence from the Troodos Ophiolite and an applied framework for SMS exploration
22	9:50	Cornel de Ronde	Earth Sciences New Zealand	New Zealand	Massive sulfide mineralization of the Kermadec arc, New Zealand: a review
23	10:15	João Carvalho	DeepFocus	Portugal	Fast-tracking exploration for SMS deposits with Ai: where are the large SMS deposits?
	10:40	<b>Coffee Break - 20 minutes</b>			
	11:00	Session Chair Dr. Samantha Smith	Blue Globe Solutions	Canada	INTRODUCTION to Presentations of <b>Technical Session V - Environmental Baselines, Impacts and Impact Assessment</b>
24	11:00	Patrick Schwing	Eckerd College	USA	Establishing comprehensive geochemical baselines from various geological settings in the CCZ
25	11:20	Steven Meyers	University of South Florida	USA	Met-Ocean Data in Support of Deep-Water Resource Extraction
26	11:45	Ebbe Hartz	Aker BP	Norway	Seabed Mineral Exploration and Impact Assessment: Norwegian Advances with Global Implications
27	12:10	Daniel Rivera	Eckerd College	USA	A Refined Suite of X-Ray Analysis Techniques for Evaluating Deep-Sea Mining Sediment Plume Impacts
	12:35	<b>LUNCH Break- 1 hour</b>			
28	13:35	Shelby Gunnells	Texas A&M University	USA	Chemical characterization of midwater and benthic plumes created by deep-sea mining of polymetallic nodules
29	14:00	Shaheen Wahab	Delft University of Technology	Netherlands	Influence of bed composition and flocculation dynamics on turbidity current propagation
30	14:25	Andy Banks	DHI Water and Environment	USA	Results from Numerical Simulation of Benthic and Midwater Sediment Plumes Generated During the 2022 NORI-D Pilot Collector Tests and Forecasting of
31	14:50	Alex Webber	The Metals Company	Canada	Benthic plume generation from a production scale model of polymetallic nodule collection
32	15:15	Matthew Piscitelli	SEARCH	USA	Considering the Improbable and the Intangible: Cultural Heritage Impact Assessment for the NORI-D Deep Sea Mining Project
	17:00	Session Chair Dr. Mark Luther	University of South Florida	USA	<b>Technical Session VI: Pre-Banquet POSTER SESSION outside in front of the Conference Room (open bar)</b>
1		Hans Petter Klohs	Adepth Minerals	Norway	The EGG concept: responsible resource exploration
2		Matthias Semel	Bauer Maschinen	Germany	Research Project Deep Sea Sampling II - Holistic Approach to the Exploration and
3		Gregory Busch	Busch Marine Inc.	USA	Advancing Deep-Sea Mineral Prospecting: A Review of Innovative Technologies for
4		Steven Rizea	Deep Reach Technology	USA	UMC 2025 DSM Model
5		Rudy Helmons	Delft University	Netherlands	Analysis of turbidity sources of mining equipment
6		Mayumi Inoue	E&E Solutions Inc.	Japan	Conceptual design of the environmental monitoring of exploitation
7		Jeroen Ingels	Earth Sciences New Zealand	New Zealand	Meiofauna in the mining zone: natural variability, impacts, and recovery
8		Jackson Wheat	Eckerd College	USA	Mineralogical and Elemental Characterization of Pre-Mining Geochemical Conditions
9		Abby Malatia	Eckerd College	USA	Development and Application of Th-228 for Tracking Deep Sea Mining Collector Plume
10		Rebekka Larson	Eckerd College	USA	A Radioisotope Landscape Approach to Evaluate Deep Sea Sedimentary Records
11		Milena S. Lynch	Eckerd College	USA	Sedimentary Elemental and Mineralogical Analysis of Deep Sea Mining Influence in the
12		Bryan O'Malley	Eckerd College	USA	A tale of two tracks: Immediate, annual, and decadal-scale impacts and recovery
13		Isabella Iannotta	Eckerd College & USF	USA	Spatiotemporal Characterization of Sedimentary Phytopigments in the Southeastern
14		Josef Flieg	Eckerd College	USA	Using Biogenic Silica as a sediment distribution proxy following seafloor mining operations
15		Breann Galliher	Eckerd College	USA	Analysis of Biogenic Structures within Deep-sea Polymetallic Nodules
16		Ernie Tapanes	Impossible Metals	Canada	Myth-busting False and Misleading Statements About Deep Sea Mining
17		Jason Gillham	Impossible Metals	Canada	Latest Techno Economic Analysis (TEA) on the Eureka Collection System
19		Yuri Kim	Korea Institute of Geoscience	Korea	Spatial Distribution and Enrichment Mechanisms of REY in Pacific Deep-Sea Sediments
20		Jake Russell	Orpheus Ocean	USA	Imaging Nodules in the US EEZ with the Ultra-Scalable Orpheus AUV
21		Tetsuo YAMAZAKI	Osaka Metropolitan University	Japan	Secondary economic feasibility analysis of shallow type methane hydrate mining
22		Erik Werner	RSC	Canada	Standardisation of polymetallic nodule box core sample quality assessment and
23		Bård Brekke Jørgensen	Seabed Solutions Kristiansand	Norway	Securing the Top Core: Improving Efficiency in Seabed Mineral Exploration
24		Kristine Beran	Teledyne Marine	USA	Optimizing Calibration of ADCPs for Determination of Suspended Sediment Concentrations
25		Alexander Moelle	TU Bergakademie Freiberg	Germany	Underwater Inertial Navigation System for Deep-Sea Sampling
26		Eric Macris	Viridian Biometals	USA	Update: Clean, low-cost processing for seabed nodules via bacteria that breathe rocks

19:00 **53<sup>rd</sup> UMC BANQUET - TROPICAL NIGHT THEME - Come with your tropical outfit**  
**Majestic Conference Room**

22:00 **End of the day**



# UMC 2025 UNDERWATER MINERALS CONFERENCE



Wednesday, November 12, 2025 - TECHNICAL SESSIONS VII and VIII

#	Time	Presenter	Affiliation	Country	Title
	<b>8:30</b>	Session Chair Dr. Samantha Smith	Blue Globe Solutions	Canada	INTRODUCTION to Presentations of <b>Technical Session VII - Baseline, EIA (continued) and Monitoring</b>
33	8:35	Bryan O'Malley	Ecofera	USA	Synthesis of Biological Impact and Recovery from NORI-D Mining Test
34	9:00	Michael Clarke	The Metals Company	Canada	Key Findings of Mid-Water Plume Modelling for Commercial-Scale Polymetallic Nodule Collection Operations in NORI-D
35	9:25	Dani Schmid	Bergwerk	Norway	Leveraging Machine Learning to Map Life on the Ocean Floor: A Tool for Sustainable Deep-Sea Resource Management
36	9:50	Thomas Peacock	atdepth	USA	Ocean Intelligence for Deep-Sea Mining
37	10:15	Pedro Madureira	INESC TEC	Portugal	TRIDENT : project, updates, and tech insights for long-term deep-sea monitoring
<b>10:40 Coffee Break - 20 minutes</b>					
38	11:00	Scott Loranger	Kongsberg Discovery	Norway	Quantifying Suspended Sediment with Broadband Acoustics: Implications for Deep-Sea Mineral Extraction
39	11:25	Susumu Takatsuka	Sony CSL	Japan	High-Speed In Situ Measurement of Marine Particles and Biomass Using an Event-based Vision Sensor (EVS) with Data Compression Capability
40	11:50	Anette Tvedt	Adepth Minerals	Norway	EMINENT – From Ocean Floor to Future Industry
41	12:15	Ulrich Schwarz Schampera	International Seabed Authority	Jamaica	Technological Innovation for Monitoring of Activities in the Oceans and on the Seabed
<b>12:40 LUNCH Break - 1 hour</b>					
	<b>13:40</b>	Session Chair Dr. John Wiltshire	University of Hawaii	USA	INTRODUCTION to Presentations of <b>Technical Session VIII - Marine Minerals Technologies</b>
42	13:40	Alexander Gilbert	Zeno Power Systems, Inc.	USA	Radioisotope Power Systems for Deep Sea Mining Applications
43	14:05	Max Kaufmann	Odyssey Marine Exploration	USA	Angle Range Analysis from Blended Multi-frequency Multibeam Data for Nodule Prospecting
44	14:30	Kiyotaka Orita	Japan Organization for Metals and Energy Security	Japan	Conceptual study on closed-circulation ore lifting system with twin-piston pump
45	14:55	Britt Blankenaar	Allseas Engineering B.V.	Netherlands	Laboratory tests to determine the erosion depth of a Coanda nozzle
46	15:20	Oliver Gunasekara	Impossible Metals	USA	Eureka Collection System Roadmap Update
<b>15:45 Coffee Break - 20 minutes</b>					
47	16:05	Anna Scott	Mithril Minerals	USA	Demonstration of a Distributed Polymetallic Nodule Collection System
48	16:30	Guido van den Bos	NOV	Netherlands	From Seafloor to Surface: Low-Impact Vertical Transport Systems of Deepsea Minerals via NOV's Skiplift and Closed-Loop Riser Technologies
49	16:55	Wouter Duijnste	Allseas Engineering B.V.	Netherlands	Nodule collection vehicle plume reduction approach
50	17:20	Laurens de Jonge	Royal IHC - IHC Mining	Netherlands	From Exploration to Exploitation: technology, operational and environmental gaps
<b>18:00 begin</b>					
<b>21:00 end</b>					
<b>WETSTONE SPONSORED COCKTAIL AT THE DALI MUSEUM (free to all UMC participants, buses from the hotel lobby will leave from 6pm to the Museum)</b>					
<b>21:00 End of the day</b>					



# UMC 2025 UNDERWATER MINERALS CONFERENCE



Thursday, November 13, 2025 - TECHNICAL SESSIONS IX and X

#	Time	Presenter	Affiliation	Country	Title
<b>8:00 IMMS Annual General Meeting (all are welcome)</b>					
<b>8:30</b>		Technical Chair Dr. Samantha Smith	Blue Globe Solutions	Canada	<b>Technical Session IX - International Seabed Authority</b>
8:35		Ulrich Schwarz-Schampera	ISA-OSER		ISA's Multilateral Governance
8:40		Eden Charles	Interim Director-General of the Enterprise of the ISA		ISA UNCLOS Principles
9:10		Akuila Tawake	ISA-CARMU		Update on ISA activities (contractors, since when, exploration/baseline status towards exploitation)
<b>10:00 Coffee Break - 20 minutes</b>					
10:20		Pedro Madureira & Ulrich Schwarz-Schampera	Evora University, INESC TEC ISA-OSER		Regulatory framework of the activities in the Area
10:50		Samantha Smith	Blue Globe Solutions		Environmental Monitoring
11:20		Lucy Muthoni Njue & Hank Hedge	GDC MGD		Capacity building, gender equity and contractors' training programmes
<b>12:00 Lunch Break - 1 hour</b>					
<b>13:00</b>					
<p><b>Unfortunately, due to the US Government shutdown we had to cancel the US Government agencies technical session.</b></p> <p><b>This time can be used a free, networking time. The conference room will be open to all participants. It is a good time to check the exhibition tables and talk to our sponsors.</b></p>					
16:30	<b>End of the day</b>				

Friday, November 14, 2025 - **FIELD TRIP** (Optional - \$120 to partipate including lunch)

8:30	<b>Bus leaves from the Lobby of the Hotel</b>				
10:30	<b>Swimming with Manatees in Crystal River</b>				
13:30	<b>Lunch in Crystal River Historic Town</b>				
14:30	<b>Three Sisters Springs - Walk on boardwalk, visit park</b>				
16:30	<b>Bus back to the Hotel</b>				
14:30	<b>End of the day</b>				

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