

1st Annual UMERC Summit Report

Introduction

On September 13-14, 2022, the 1st Annual UMERC Summit was held in coordination with the Marine Energy Technology Symposium (METS) and the Ocean Renewable Energy Conference (OREC).

The UMERC Summit is a requirement of the UMERC Program per Subtask 2.8.o of the SOPO – Annual Summit. The SOPO task states: ‘The annual summit will facilitate research collaboration and coordination. The summit will take place adjacent to a research conference and the location will rotate geographically within the U.S. to increase accessibility by members of the U.S. marine energy research community from diverse geographies, backgrounds, and career stages. To further support a diversity in attendees, POET may provide travel assistance to a subset of attendees. During odd years (e.g., first year of the project), the conference will be industry-focused, but accessible to the entire research community. During even years (e.g., second year of the project), the conference will be academic-focused, but accessible to industry. The structure and content for the annual summit will be planned by the Board of Directors and POET, liaising with the planning committees for the adjacent conference to maximize collaboration and coordination of the entire marine energy research community.’

Conference Details

The conference was held over two whole days (September 14-15), and was held ahead of the OREC Conference. The decision to coordinate the conference with METS was because METS is an established research conference that had not happened for the last couple of years due to COVID-19. The METS Board of Directors was ready to re-start the conference again but did not want to hold it alongside Water Power Week, and also wanted to hold the conference somewhere other than DC.



Furthermore, the Pacific Ocean Energy Trust puts on an annual conference in Portland so it was decided that we should hold all three activities together. Using expertise of conference planning from both OREC and METS, we felt that this was the perfect pairing to kick off the 1st UMERC Summit. POET worked with Andrea Copping from Pacific Northwest National Laboratory and Michael Lawson from National Renewable Energy Laboratory from METS.

Abstract Submission

Several abstract submission software was reviewed in order to find something that was user friendly for the submitters, reviewers and for the organizers. While there was some software that were less expensive, Ex-Ordo was ultimately chosen due to its user-friendliness, which in the end saved everyone time. Ex-Ordo is an Ireland based company with a view easy interface that has all the capabilities we need. It even allowed us to create and export the final program. The user dashboard can be seen below in Figure 1.

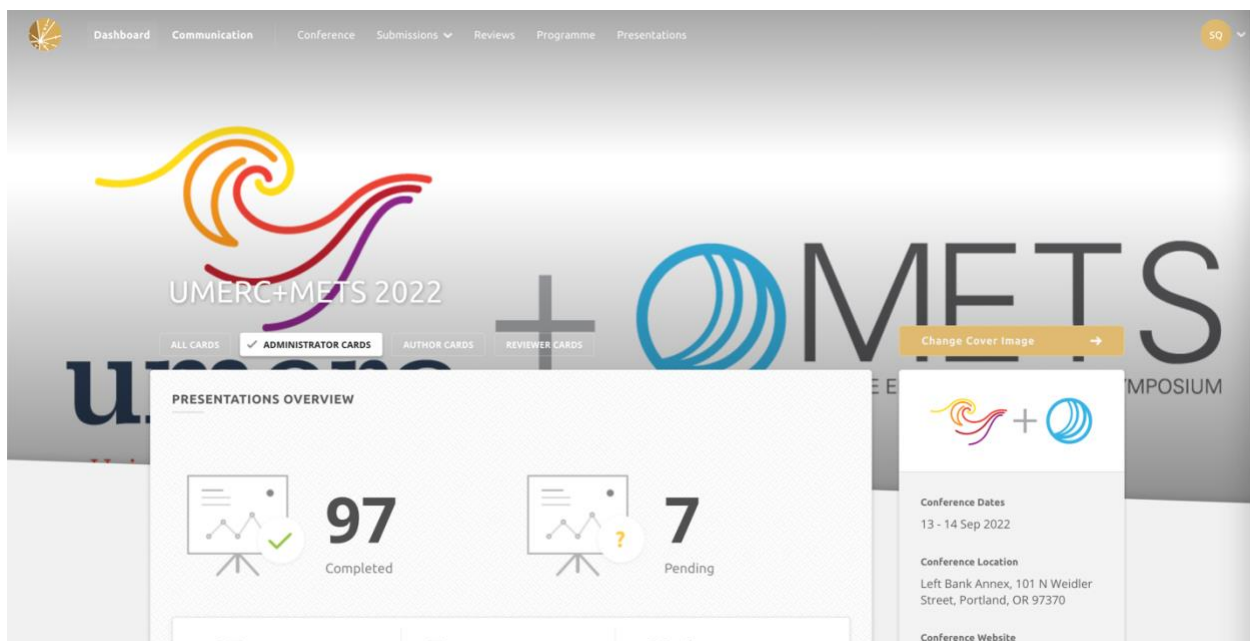


Figure 1. Ex Ordo user/admin dashboard.



The call for abstracts was opened mid-March and closed on May 16th, 2022. We received 111 abstracts, of which 72 were from non-students and 32 were from students (and 1 abstract that was out of scope and discarded). The call for abstracts can be seen below in Figure 2.

UMERC+METS 2022

orec2022.exordo.com

The Marine Energy Technology Symposium (METS) and University Marine Energy Research Community (UMERC) will jointly sponsor a marine energy research conference in Portland OR, September 13th-14th 2022. The conference will be held in conjunction with the Ocean Renewable Energy Conference (OREC) on September 14th-15th 2022, which also provides an opportunity to meet with marine energy developers and stakeholders.

METS and UMERC 2022 Call for Papers

We are seeking one-page (~500 words) abstracts that describe advances in the design, analysis, environmental evaluation, and socio-economic evaluation of marine energy systems. We are interested in research relating to all end-use markets, from systems that might produce a few watts or kilowatts for Blue Economy applications, to utility-scale electricity in the megawatts. All levels of technology development are welcome, from basic research to in-water testing.

Specific areas of interest include:

- Marine energy converter design, analysis, simulation, and optimization
- Environmental effects evaluation and simulation
- Resource assessment and characterization
- Laboratory and open water experimental testing
- Materials and coatings
- Design and analysis of mooring systems
- Array layout and optimization
- Installation, operations, and maintenance (IO&M) strategies
- Techno-economic modeling
- Code validation and verification
- Social science
- Governmental policy and regulatory considerations

Authors whose abstracts are accepted will be given the opportunity to give a podium presentation.

These sessions will provide a venue where technical experts can present marine energy research that helps accelerate the pace of sustainable technology development. We particularly encourage students and early career researchers to present their work.

Figure 2. UMERC+METS Call for Abstracts.



All abstracts were reviewed by at least 2 reviewers. The review board consisted of people from the UMERC and METS boards. The reviewers made the final suggestions of whether or not an abstract would be presented as an oral presentation or a poster.

Poster and Presentation Selections

All abstracts were given either a poster presentation or an oral presentation spot, which resulted in 65 oral presentations, at least 45 posters (some people also brought posters for fun) and 1 INORE workshop.

To accommodate all the presentations and speakers, we decided to run 2 tracks. There was not necessarily any difference to the tracks, except for their location and making sure that people who had multiple speaking slots weren't overlapping themselves.

The final simple program can be found below in Figure 3, while you can find a full program in the appendix of this document.

UMERC+METS 2022 13 - 14 Sep 2022 All times in PDT



Tuesday, 13 September		Wednesday, 14 September	
8am	Registration, Coffee and Breakfast Leftbank Annex	8:30am	Coffee and Breakfast Great Room (Upstairs)
9am	Opening Remarks Great Room (Upstairs)	9am	Track 1, Session 5 - Laboratory and Tank Testing Great Room (Upstairs)
9:30am	Track 1, Session 1 - Modeling: WECS, Turbines, Controls and Debris Great Room (Upstairs)	10:30am	Social Sciences Club Room (Downstairs)
	Track 2, Session 1 - Powering the Blue Economy Club Room (Downstairs)	11:30am	Community-Driven Marine Energy Design and Analysis Club Room (Downstairs)
11am	Networking Break and Visit Posters Everywhere		Coffee
11:15am	Plenary #1 - Plenary Session - Unlocking the power of ocean energy: The need for standardization, and transfer of data and technology Great Room (Upstairs)		Poster Session #1 Everywhere
11:45am	Track 1, Session 2 - Materials and Modeling Great Room (Upstairs)	12:30pm	Lunch Great Room (Upstairs)
	Track 2, Session 2 - Desalination and Innovative marine energy harvest Club Room (Downstairs)	1:30pm	Track 1, Session 6 - Open Water and Laboratory Testing Club Room (Downstairs)
	1:15pm		Track 2, Session 6 - Environmental Breakout Room (Downstairs)
	Lunch Great Room (Upstairs)		3pm
	2:15pm		Coffee Break Everywhere
	Track 1, Session 3 - Innovative Tools, LCOE, and Efficiencies for Marine Energy Great Room (Upstairs)		Poster Session #2 Everywhere
	Track 2, Session 3 - Resource Assessment and Characterization Club Room (Downstairs)		3:30pm
	3:45pm		Track 1, Session 7 - Array Layout and Optimization Club Room (Downstairs)
	Networking Break and Visit Posters Everywhere		Track 2, Session 7 - Novel WECS and Turbines Breakout Room (Downstairs)
	4pm		5pm
	Track 1, Session 4 - Software and Databases for Marine Energy Great Room (Upstairs)		Closing Remarks and Awards Club Room (Downstairs)
	Track 2, Session 4 - INORE Workshop Breakout Room (Downstairs)		5:30pm
	5:30pm		OREC Reception
	UMERC+METS Reception Great Room (Upstairs)		

Powered by Ex Ordo, everything you need to run a research conference.

Page 1

Figure 3. Simple UMERC+METS conference program.

The Conference

The conference commenced on September 13-14, 2022, at the Left Bank Annex in Portland, Oregon. Approximately 225 people registered and attended the UMERC+METS Conference. Of those 225 attendees, 102 were associated with universities, representing 26 different universities. The 123 other people were from the national labs, industry, and other entities.

Most of the conference presentations and posters can be found on Ex Ordo dashboard as well as on the UMERC Portal:

- Ex Ordo: <https://orec2022.exordo.com/programme/preview/presentations>
- UMERC Portal: https://umerc-us.org/media_center/folder/18f77c84-61a6-4a09-be65-14a3ecc16386

We were lucky to have a photographer there who was able to capture many great moments throughout the conference including a group photo seen below.



Figure 4. Group photo from the inaugural UMERc Conference, 2022.

INORE Workshop

As noted, an INORE workshop was held on September 13th as part of Track 2. This workshop was organized by Jia Mi who is the INORE representative on the UMERc Board of Directors. The summary provided is as follows, and the presentation is attached as an appendix:

- **Type of event:** Career development panel discussion with mutual interaction via Menti.
- **Participants:** Around 30-40 people
- **Panel Speakers:** Dr. Michael Lawson (NREL), Professor Maha Haji (Cornell University), Mr. Daniel Petcovic (CalWave Power Technologies), Ms. Hayley Farr (PNNL)



- **Media:**

<https://www.linkedin.com/feed/update/urn:li:activity:6976382694100189184>

Travel and Registration Stipends

UMERC was able to provide a total of 49 travel and registration stipends, which helped people from all over attend the conference. Of these 49 requests, 46 requested and received free registration, while 30 people requested and received travel assistance. This resulted in assisting people with over \$20,000 in registration assistance and about \$47,000 in travel assistance.