

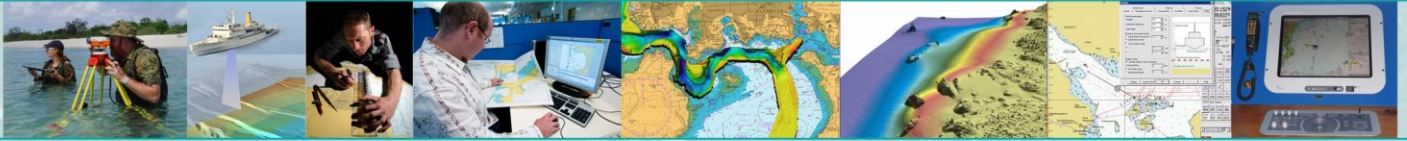
**VISIT TO THE UNIVERSITY OF SOUTHERN MISSISSIPPI (USM)  
 FACILITIES AND THE GRADUATION CEREMONY OF THE  
 CATEGORY "A" MASTER OF SCIENCE IN HYDROGRAPHIC SCIENCE  
 AT THE UNIVERSITY OF SOUTHERN MISSISSIPPI,  
 USA, 31 July – 2 August**

<b>Contribution to the IHO Work Programme 2023</b>	
Task 3.3.9.1	Maintain relations with KHOA for the management of Cat A Course at University of Southern Mississippi

The Graduation Ceremony of the Category "A" Master of Science in Hydrographic Science and Category "B" Bachelor of Science in Marine Science (Hydrography) was held at the University of Southern Mississippi (USM), USA on 1 August 2023. One student from Guatemala graduated from the Category "A" Master of Science in Hydrographic Science Programme under the IHO-Republic of Korea (ROK) Programme of Technical Cooperation.



*Participants at the graduation ceremony at USM*

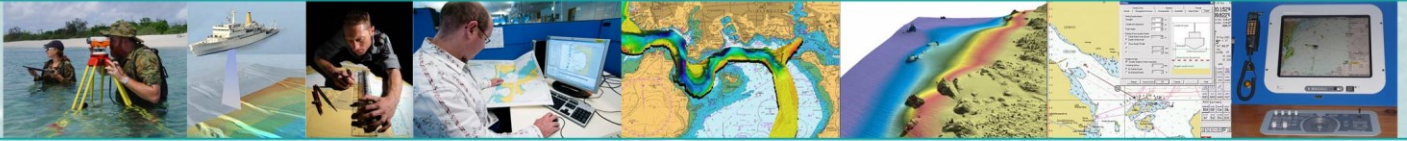


The ceremony was hosted by Dr Leila Hamden, Associate Vice President Research, Coastal operations of the USM, and moderated by Prof Stephan Howden, Director Hydrographic Science Research Center of the USM. Fifteen students graduated from the Master of Science in Hydrographic Science this year, including one supported by the IHO-ROK Programme and two by the U.S. Navy. Three students graduated from the Bachelor of Science in Marine Science. Two representatives from sponsoring countries (Mr Sangkil Lee, Counsellor of ROK Embassy in the U.S. and Dr Joe Calantoni, Technical Director, U.S. Navy Naval Meteorology and Oceanography Command) attended the ceremony. The IHO Secretariat was represented by Director Luigi Sinapi.

Since 2000, the USM has been organizing the Category "A" Master of Science course in Hydrographic Science, recognized by the IBSC (FIG/IHO/ICA International Board on Standards of Competence for Hydrographic Surveyors and Nautical Cartographers). The IHO-ROK Technical Cooperation Programme under the Memorandum of Understanding between the IHO and ROK commenced with supporting students to attend the course from 2013 to contribute to the IHO Capacity Building Programme. The number of successful graduate students from the programme totals 21, including one from the 2022-2023 academic year, from 13 IHO Member States (Bahrain, Bangladesh, Estonia, Guatemala, Jamaica, Malaysia, Mauritius, Mexico, Nigeria, Philippines, Romania, Thailand and Tunisia). The Korea Hydrographic and Oceanographic Agency (KHOA), in collaboration with the International Hydrographic Organization, has planned a workshop in September 2023 in Busan (Republic of Korea) for the international students of the IHO-ROK Program of Technical Cooperation to celebrate the anniversary of the first 10 years since the signing of that agreement between the Republic of Korea and the IHO that started the IHO-ROK Program of Technical Cooperation.



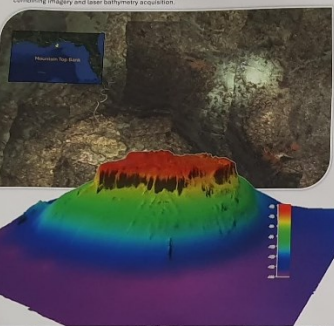
*Highlights of the Ceremony*



Dr Leila Hamden, Associate Vice President Research, Coastal operations of the USM congratulated the graduates and introduced the programme while underlining the increasing demand for competent and highly qualified hydrographers in many fields such as government agencies and industry. IHO Director Luigi Sinapi thanked the USM and the Republic of Korea for this successful program since the 2013-14 academic year, highlighting that the program is a reference in the hydrographic training at international level, capable not only of keeping up with the times, but also and above all, of responding to the ever-increasing demands for training and work coming from the civil and military world, in line with the need to respect the marine environment and those challenges that the humanity is facing in the field of Climate Change and a wise and respectful exploitation of the Ocean. Counsellor Mr Lee from the ROK Embassy to the USA echoed the significance of collaboration of the three organizations behind the Category A programme at the USM and pledged continued support for the Capacity Building programme on behalf of the Director General of KHOA. Dr Calantoni, Technical Director U.S. Navy Naval Meteorology and Oceanography Command presented the “Hydrographer of the Navy Education Award” to Mr Peter Irewole Komolafe (Nigeria), as Mr Komolafe had shown outstanding performance during the 2022-23 academic year.

### USM Contributions to OECI and NRDA

**Below:** Eagle Ray bathymetry and a subset of a Mola Mola photomosaic from Mountain Top Bank. Bathymetry was acquired during a test of the Norbit MBES, and imagery was collected and processed using legacy equipment that will be replaced with the new Voyis Recon system, combining imagery and laser bathymetry acquisition.

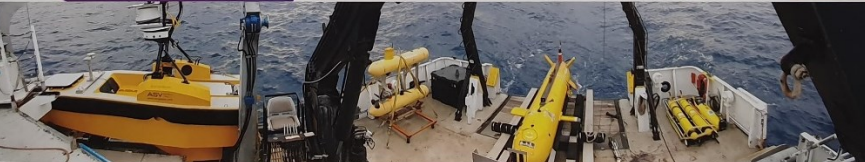


**Recent and upcoming activities:**

- Mapping potential sanctuary sites in the Gulf and Pacific
- Fabricating and deploying landers for NRDA monitoring activities
- Enabling interoperability among OECI assets by integrating Sonardyne tracking and communications technology into Eagle Ray and Mola Mola
- Expanding payload capability in both AUVs:
  - Norbit WBMS multibeam echosounder (Eagle Ray)
  - OFG Self-Compensating Magnetometer (Eagle Ray)
  - Voyis Recon high-resolution color imaging and laser-derived bathymetry (Mola Mola)
- Implementing modern technologies to improve positioning, timing, and communication
- Refitting a tethered recon/deployment platform and accompanying ROV
- Developing CONOPS for individual and joint US operations

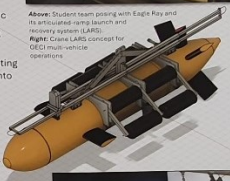
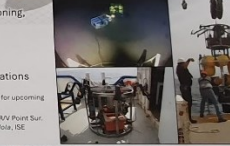
**Right:** Tethered systems developed jointly between USM and UH that are being refit for upcoming contributions to lander placement, guided multicoring, and specimen sampling.

**Below:** Panoramic of equipment gathered for a multi-vehicle expedition aboard the R/V Point Sur. From left to right, USM assets: LiMars C-Worker 3 Sea Eagle, SeaBED AUV Mola Mola, ISE Explorer AUV Eagle Ray, and gliders deployed for NODD and NOAA.



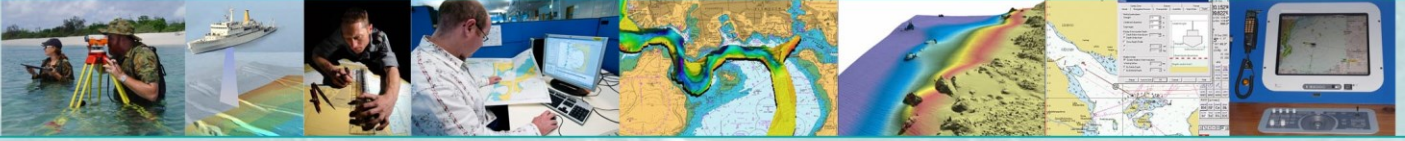
**Above:** Student team posing with Eagle Ray and articulated ring launch and recovery system (LARS).

**Right:** Cruise Lab's concept for OECI multi-vehicle operations.

Programme on Uncrewed Maritime Systems (UMS) at the USM Gulf Park Campus

The ceremony was preceded (31 July) and followed (2 August) by a visit to the USM facilities distributed between the Port of Gulfport, the USM Gulf Park Campus and the Stennis Space Center in Mississippi. Prof Leonardo Macelloni, Associate Director Hydrographic Science Research Center and Mr Marco D'Emidio, Senior Research Scientist, illustrated the functions of new Marine Research Center (MRC) in the Port of Gulfport, the new programme to release the certificates on Uncrewed Maritime Systems (UMS) performed at USM Gulf Park



Campus, and then the oceanographic support facility at the Stennis Space Center. The visit concluded with an informal meeting with representatives of the U.S. Navy Naval Meteorology and Oceanography Command (CNMOC) to illustrate the ongoing and future development cooperation between the USM and CNMOC in the field of education and training in Hydrography.