

## HYDROGRAPHIC SCIENCE RESEARCH CENTER

The Hydrographic Science Research Center (HSRC) at The University of Southern Mississippi was created to develop and broaden the applications of hydrography, ocean mapping and navigation technology.

### RESEARCH AND DEVELOPMENT

The HSRC, with government partner NOAA Office of Coast Survey, is developing techniques and procedures for the use of unmanned surface vessels in hydrographic operations. A NOAA grant provided HSRC with a 5 meter unmanned surface vessel that will be a test and development platform for new sensors and instruments while providing insight into autonomous operations.

#### Tailored Hydrographic Instruction

Drawing on the University's established leadership

as an International Hydrographic Organization (IHO)/International Federation of Surveyors (FIG)/International Cartographic Association (ICA) Category A Certified hydrographic science education program, the HSRC can provide classroom instruction and hands-on training on virtually any aspect of hydrographic data collection, data processing, data management, and product generation. With a holistic view of hydrography from equipment installation through hydrographic production, training can be tailored to suit the client's needs.

### SPECIFIC AREAS OF EXPERTISE

#### Hydrographic vessel configuration

- Equipment installation
- Calibration
- Software configuration
- Vessel configuration survey

- **Hydrographic data collection**

- Single beam echo sounders
- Side scan sonars
- Multibeam echo sounders
- Phase differencing swath bathymetry sonars

- **Hydrographic data collection and management**

- QINSy
- SonarWiz
- Fledermaus
- HyPack
- Caris

- **Precise positioning**

- Static processing techniques (Network, single baseline and Precise Point Positioning solutions)
- Real Time Kinematic GPS

- Real Time Gipsy GPS
- Post Processing Kinematic GPS
- Post Processing Kinematic Precise Point Positioning

- **IHO and international organizational relationships**

- **Nautical Science**

- **Tides and water level theory and measurement**

- **Acoustics**

- **Hydrographic survey specifications and reports**

EOE/F/M/VETS/DISABILITY