The Joint Hydrographic Center (JHC) is a formal cooperative partnership between the University of New Hampshire and the National Oceanic and Atmospheric Administration. This partnership has created a national center of expertise in ocean mapping and hydrographic sciences, providing advanced instruction and cutting-edge research.

The Center for Coastal and Ocean Mapping (CCOM) is a complementary University center that expands the scope of ocean mapping interaction and collaboration with the private sector, other government agencies, and other universities.

The Center’s mission is two-fold—an education program dedicated to training the next generation of hydrographers and ocean mapping scientists, and a research program that develops and evaluates a wide range of state-of-the-art hydrographic and ocean mapping technologies and applications.

EDUCATION
The University of New Hampshire offers an Ocean Mapping option with the Master of Science and Doctor of Philosophy degrees in both Ocean Engineering and Earth Sciences/Natural Resources. Students come into the program with a variety of backgrounds, such as electrical or mechanical engineering, earth sciences, natural resources, ocean engineering, and computer science.

“Category A,” the highest level of international recognition, was awarded by the International Federation of Surveyors/International Hydrographic Organization (FIG/IHO) Advisory Board upon examining the Center’s curriculum in detail and concluding that it provides comprehensive and broad-based knowledge in all aspects of the theory and practice of hydrography and allied disciplines.

RESEARCH
Multibeam Sonar Data
The Center is developing new methods to automatically process data with improved efficiency and remove false soundings. We are also exploring new ways to utilize measurement and error management theory to track uncertainty and improve the quality of survey data.

Sonar Design and Processing
We are developing innovative techniques for enhanced resolution and improved target recognition through the understanding of environmental and instrumental causes of sonar signal degradation. We are also exploring approaches to incorporate advanced sonars into compact AUVs (Autonomous Underwater Vehicles).

Seafloor Characterization
Our goal is to broaden and improve applications of seafloor mapping technologies to provide solutions in fisheries management, habitat and geologic mapping, and environmental characterization.

Funding
In addition to NOAA’s support through the JHC, the Center has had projects funded by the U.S. Geological Survey, the Office of Naval Research, the Naval Research Laboratory, the Naval Oceanographic Office, the Army Corps of Engineers, the Nippon Foundation, and the National Science Foundation. The Center maintains an industrial consortium that has formalized the relationship with private sector partners in the ocean mapping, hydrographic, and electronic charting fields.

Students from the Summer Hydrographic Field Course.