MIT SEA GRANT
COLLEGE PROGRAM

Where ocean science meets cutting edge technology

For over 40 years MIT Sea Grant has brought the expertise of the Massachusetts Institute of Technology to bear on ocean-related challenges. MIT Sea Grant is part of a nationwide network of 33 university-based Sea Grant programs located in every coastal and Great Lakes state.

Research Highlights

MIT Sea Grant awards grants to Massachusetts based researchers for applied research relevant to our stakeholders. In 2015 we funded three projects focused on the impacts of ocean acidification and continued funding 12 projects ranging from the development of biomimetic underwater sensors to water quality monitoring in the Boston Harbor.

Reducing Nitrogen Loading
Research from UMass Boston resulted in the town of Falmouth, MA implementing a low cost barrier which effectively removes nitrogen from groundwater. Several other Cape Cod towns are considering these barriers.
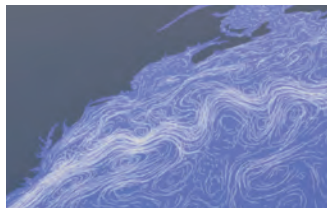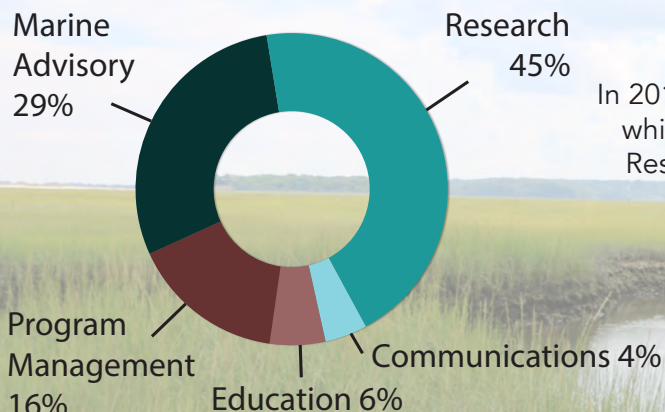
Predicting Storm Inundation
Research from UMass Dartmouth and Woods Hole Oceanographic Institute enhanced the regional ocean model, FVCOM, predictions to incorporate the impact of sea level rise on storms-induced coastal inundation in Massachusetts.

Developing New Sensors
Research from Woods Hole Oceanographic Institute led to the development of platforms and sensors that provide real-time information enabling accurate and timely shellfish management in local waters.

Funding Highlights

Marine Advisory 29%
Research 45%
Program Management 16%
Communications 4%
Education 6%

In 2015 MIT Sea Grant received $2 million in federal funding from NOAA, which was matched by $2 million from state, local, and private partners. Research continues to be a priority with 45% of our funding awarded to Massachusetts university-based research scientists.

Additional funding is brought in through grants our staff receive. Since 2010 MIT Sea Grant staff have received over **$12 million in outside leveraged funding.**

Total Annual Funding: $4,216,091

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Marine Advisory Program
Provides science-based information to stakeholders

MIT Sea Grant's Advisory Program conducts research and outreach that informs management decisions. This past year our activities included working with the Northeast Fisheries Management council to address social impact assessments, providing much needed data on carbon storage in eelgrass beds, and assisting the City of Chelsea in incorperating climate change and sea level rise predictions in their city planning.

AUV lab
Develops marine sensing platforms

The AUV Lab is currently developing a marine sensing platform consisting of an autonomous unmanned surface vessel and a tethered underwater component to deploy sensors and remotely operated vehicles. The AUV Lab serves as a training ground for graduate and undergraduate students, visiting engineers, and scientists, from all over.

Design lab
Understands, analyzes, and designs engineering systems

The MIT Sea Grant Design Lab develops variable-fidelity models from first principles for a variety of engineering and scientific applications. They solve these models using computational methods that they develop. Some recent highlights include system-level thermal modeling of all electric ships, high-fidelity simulations of thermal components aboard naval ships, and developing computational methods to predict rare events such as extreme waves.
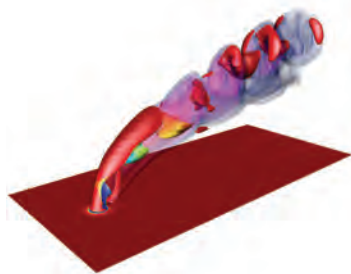
Education
Develops innovative, hands-on, educational programs

MIT Sea Grant is committed to helping meet the critical need for quality science, technology, engineering, and math (STEM) education and increased ocean literacy. We continue to use the extremely successful Sea Perch underwater robotics program developed at MIT Sea Grant to teach students about engineering. Our two labs and Advisory program offer opportunities for both highschool and undergraduate research opportunities. We supported 35 undergraduates and 38 graduate students in the past year and reached over 25,000 people through informal educational outreach.