



Rhode Island (**RI**) Consortium for **Coastal Ecology Assessment, Innovation, and **Modeling (RI C-AIM)****

Geoff Bothun (PI - URI)
Breea Govenar (Co-PI, RIC)
Jeff Morgan (Co-PI, Brown)
Lewis Rothstein (Co-PI, URI)
Neal Overstrom (Co-PI, RISD)

8 Collaborating RI Institutions of Higher Education: URI (lead institution),
Brown Univ., Bryant Univ., Providence College, Rhode Island College,
Rhode Island School of Design, Roger Williams Univ., and Salve Regina Univ.



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5-Year (9/17 – 8/22) Funding

NSF: \$19 million

RI STAC: \$3.6 million

Research Program: Goal

- **To understand how anthropogenic and natural stressors impact ecological interactions and responses within Narragansett Bay**
- Achieved through the integration of:
 - **Observations**
 - Augmenting historical Narragansett Bay observatories with a new networked sensor array; altogether **The Bay Observatory**
 - Developing new sensor technologies: nano-sensors; living biosensors
 - **Predictive and Process Modeling**
 - Developing innovative multi-scale, coupled biogeochemical/ecological/circulation natural science models: **“Genes-to-Ecosystems”**
 - Coupling with social science (socio-economic) models
 - **Data Analyses, Visualization and Imaging**
 - Establishing the **RI Center for Data Discovery (RICDD)**

RI EPSCoR Research Integration & Investigators

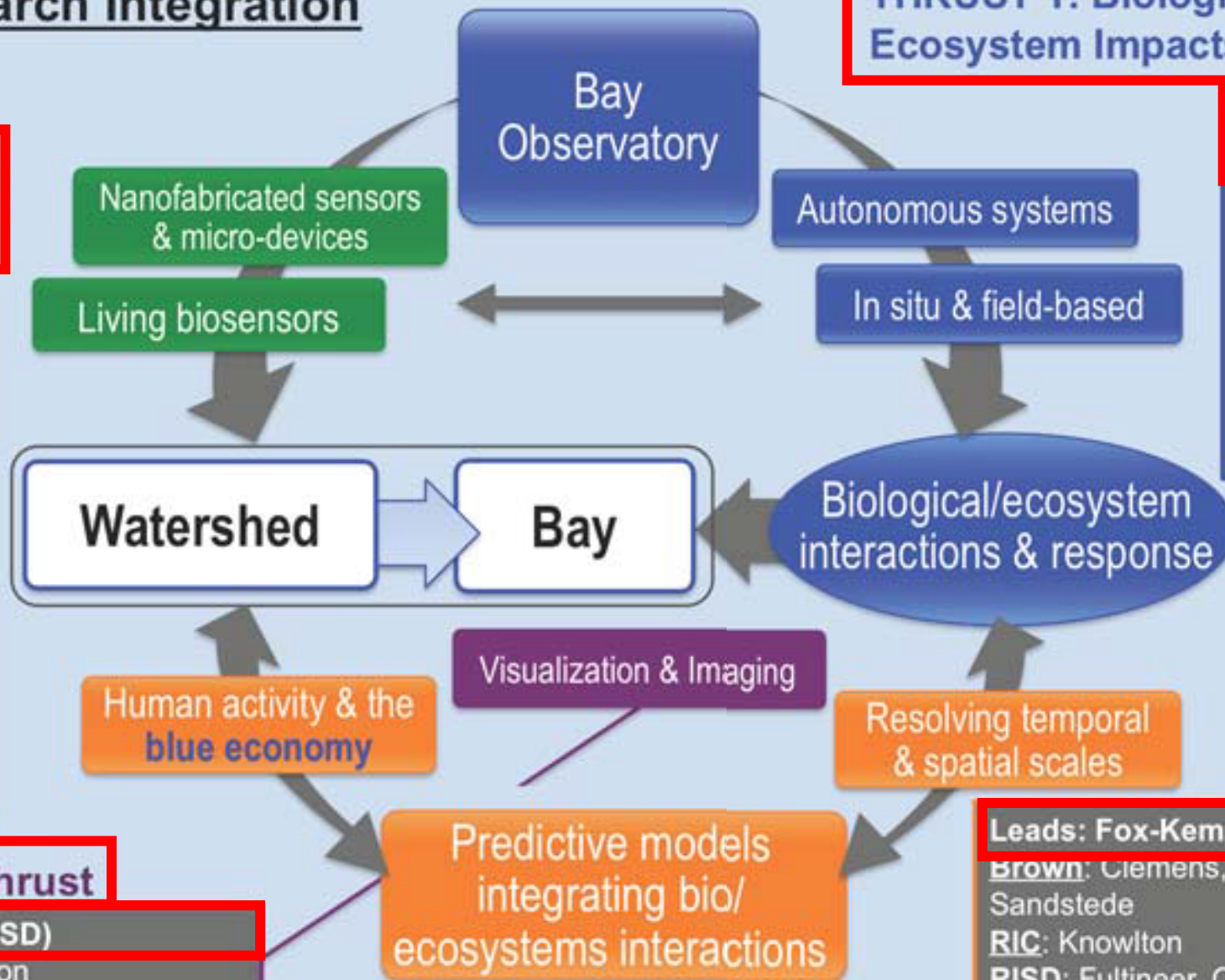
THRUST 3: Enabling Technologies

Leads: Dwyer (URI), Morgan (Brown)

Brown: Boekelheide, Creton, Hurt, Kane, Rand, Shukla, Tripathi, Zhitkovich
PC: Breen
RIC: Stillwell
RISD: Fultineer, Overstrom
RWU: Murphy, O'Shea
SRU: Munge
URI: Bose, Bothun, Craver, Dwyer, Faghri, Gold, Levine, Maranda, Pradhanang

Cross-Cutting Thrust

Lead: Overstrom (RISD)
Brown: Morgan, Creton
PC: DeGiorgis
RISD: Bissonnette.
URI: Bothun, Gomez-Chiarri, Menden-Deuer, E. Uchida



THRUST 1: Biological and Ecosystem Impacts

Leads: Govenar (RIC), Jenkins (URI)

Bryant: C. Reid
RISD: Fultineer, Overstrom
RWU: O'Shea
SRU: Swanson, Axen, A. Reid
URI: Gold, Gomez-Chiarri, Kincaid, Lane, Menden-Deuer, Rynearson, Omand, Pradhanang, Zhang

THRUST 2: Predicting Ecosystem Response

Leads: Fox-Kemper (Brown), Rothstein (URI)
Brown: Clemens, Fox-Kemper, Lynch, Sandstede
RIC: Knowlton
RISD: Fultineer, Overstrom
URI: Collie, Dalton, Forrester, Gomez-Chiarri, Humphries, Kincaid, Lane, Menden-Deuer, Maranda, Opaluch, Oviatt, Pollnac, Thornber, E. Uchida, H. Uchida, Ullman, Zhang

THRUST 2: Predicting Ecosystem Response

Science Questions

- Q1.** How do complex interactions between natural and anthropogenic stressors affect the responses of ecologically- and commercially-important organisms?
- Q2.** How can temporal and spatial detection of pollutants and stressors be enhanced, and data made accessible, to reveal ecological complexity and to improve coastal ecosystem models?
- Q3.** How does the environment affect humans and how can human behavior and responses be modified to improve coastal and economic sustainability?



C-AIM Education & Workforce Development Program



- **Interdisciplinary Research and Mentoring Initiative (IRMI)**
 - Train and mentor undergraduate (through our **SURF** programs) and graduate students (C-AIM research assistantships), and postdocs from diverse backgrounds to enter related careers;
 - support junior faculty to ensure effective mentoring, career advancement, and retention as researchers/educators; and
 - form industry and non-profit partnerships that will promote translational research, engage public stakeholders, and yield internship and employment opportunities (C-AIM's **Academic-Industry-Community Partnership – AICP**)



C-AIM Partnerships and Collaborations



- RI Science and Technology Advisory Council (STAC)
- Statewide STEM Education Programs
 - RIC Center for Research and Creative Activity
 - URI Seeds for Success
- Other New England EPSCoR Programs (RI, ME, NH and VT)
- NIH IDeA Network of Biomedical Research Excellence (RI-INBRE)
 - Sharing research infrastructure
- Others (TBD)



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