University of Hawai‘i Sea Grant College Program

Briefing Book

NOAA National Sea Grant
Program Review Site Visit
December 3-4, 2014

University of Hawai‘i Sea Grant College Program Site Review

December 3-4, 2014
Hawai‘i Institute of Geophysics, Room 210
University of Hawai‘i at Mānoa

Site Review Team

Mr. Michael Liffmann, Site Review Team Chair, Federal Program Officer, National Sea Grant College Program
Mr. Frank Beal, Site Review Team Co-Chair, National Sea Grant Advisory Board Member
Dr. Shelby Walker, Director, Oregon Sea Grant
Dr. Michael Spranger, Professor and Extension Specialist Community Development, University of Florida
Dr. Don Scavia, Family Professor of Sustainability and Director of the Graham Sustainability Institute and Special Counsel to the University of Michigan President for Sustainability.

AGENDA

TUESDAY, DECEMBER 2, 2014

5:00pm – 6:00pm Site Review Team meeting/check-in with chair and co-chair (at hotel)

6:00pm – 7:30pm Site Review Team dinner (location TBA)

WEDNESDAY, DECEMBER 3, 2014

7:30am – 8:00am Breakfast meeting with UH Sea Grant director and extension leader

8:00am – 8:10am Welcome & introductions

8:10am – 8:30am Orientation & Site Review Team focus (Mr. Liffmann and Mr. Beal)

ORGANIZING AND MANAGING THE PROGRAM

8:30am – 9:00am Overview of Program; Organizing for success

9:00am – 9:15am Break

9:15am – 9:45am Integrated research, extension, and education

9:45am – 10:15am Communications

10:15am – 11:30am Roundtable conversation with Center of Excellence directors

11:30am – 11:45am Break (seating of UH administration)

11:45am – 12:15pm Roundtable conversation with UH administration: program/director engagement with UH

12:15pm – 1:15pm Lunch with UH administrators

STAKEHOLDER ENGAGEMENT

1:15pm – 2:15pm	Roundtable-conversation with Advisory Council representatives
2:15pm – 2:30pm	Break
2:30pm – 3:30pm	Stakeholder and partner panel
3:45pm – 5:15pm	Sustainability initiative faculty award overview and faculty presentations
6:00pm – 8:00pm	Student poster mini-symposium

THURSDAY, DECEMBER 4, 2014

7:30am – 8:00am	Breakfast meeting with UH Sea Grant management team

COLLABORATIVE NETWORK/NOAA/REGIONAL ACTIVITIES

8:00am – 8:45am	Network panel conference call
8:45am – 9:30am	NOAA and agency panel
9:30am – 9:45am	Break
9:45am – 10:30am	Regional partnerships panel
10:30am – 11:15am	Connecting with researchers
11:15am – Noon	UH Sea Grant management team and SRT wrap-up (Final Q & A)
Noon – 1:00pm	Working lunch (closed session Site Review Team)
1:00pm – 3:30pm	Draft report (closed session Site Review Team)
3:30pm – 4:00pm	Exit interview with UH Sea Grant director
4:00pm – 4:30pm	Exit interview with UH administration
4:30pm – 5:00pm	Wrap up with UH Sea Grant management team

University of Hawai‘i Sea Grant College Program Site Review
December 3-4, 2014

Site Review Team (SRT) members

Mr. Michael Liffmann, SRT Chair, Federal Program Officer, National Sea Grant College Program

Mr. Mike Liffmann is NOAA National Sea Grant College Program Extension Leader and Program Officer for the Alaska, Georgia, Guam, Hawai‘i, Michigan, MIT and Woods Hole Sea Grant Programs.

Liffmann has been with the National Sea Grant Office since 2007. Prior to that, he worked with the Louisiana Sea Grant College Program (LSG) administered by LSU in Baton Rouge. He began working with LSG in 1984 and between 2002 and 2007 served as its Associate Executive Director. In that capacity, he provided leadership and program direction to the program's primary outreach components, i.e., Sea Grant Extension, Marine Education, and Communications and assisted in planning and proposal preparation processes. He holds a M.A. (Regional and Latin American Economics) from LSU in 1971 and a B.S. (Economics) from Lamar University in 1969.

Mr. Frank Beal, SRT Co-Chair, National Sea Grant Advisory Board Member

Mr. Frank H. Beal is executive director of Metropolis Strategies, formerly Chicago Metropolis 2020. Beal previously served as president of Ryerson International Inc., an operating unit of the former Inland Steel Industries.

Beal was also president and chief executive officer of Ryerson/West; general manager of corporate planning and development for Inland Steel Industries; general manager of purchasing for Inland Steel Company; and COO and general manager of raw materials for Inland Steel Coal Company. Prior to joining Inland Steel Industries, Beal was director of the Illinois Department of Energy and Natural Resources. He also was a special assistant for energy and environmental affairs for Governor James Thompson.

Previously, under Governor Richard Ogilvie, Beal served as the state’s first deputy director of the Institute for Environmental Quality, which conducts research on energy, natural resources and environmental issues for the state. Beal serves on the board of Business and Professional People for the Public Interest (BPI) and was appointed by Mayor Daley to serve on the board of the Chicago Metropolitan Agency for Planning (CMAP) where he chairs the Regional Tax Policy Committee. As a member of the American Planning Association, he has edited and published several books, articles and research reports on urban affairs and land use planning as well as given numerous speeches nationally on those topics. Beal received his Master’s degree in urban planning from the University of Illinois and his Bachelor’s degree in engineering from Antioch College.

Dr. Shelby Walker, Director, Oregon Sea Grant

Dr. Walker comes to Oregon Sea Grant from the NOAA Office of Oceanic and Atmospheric Research's Office of Policy, Planning and Evaluation, where she has been responsible for NOAA research planning efforts, and serves as associate director for the NOAA RESTORE Act Science Program. Prior to NOAA, she was an associate program director in the National Science Foundation's Ocean Sciences Division, where she helped lead the Ocean Technology and Interdisciplinary Coordination Program. She holds a Ph.D. in marine science from the College of William and Mary, and is a former Sea Grant Knauss Fellow.

Dr. Michael Spranger, Professor and Extension Specialist Community Development, University of Florida

Dr. Spranger joined the Department of Family, Youth and Community Sciences in 2000. He has B.A. degrees in History and Political Science from the University of Wisconsin-Parkside; a M.A. in Public Policy and Administration and M.S. in Water Resources Management from the University of Wisconsin-Madison; and a Ph.D. in Urban and Public Affairs from Portland State University.

Spranger has 30 years of professional experience in university extension and outreach activities, including program administration, planning, development and evaluation and has experience in teaching and applied research at local, state, regional and national levels. He previously worked at the University of Washington, Washington State University and University of Wisconsin. During his career he has served as an extension administrator, extension state specialist and community resource development agent, at the county level.

He has served in a number of leadership roles regionally and nationally in the areas of marine education, ocean observing systems, and extension. He was one of the founding members and served as chair of the National Assembly of Sea Grant Extension Program Leaders and President of the National Marine Educators Association. Internationally, he has worked with university and governmental officials in building capacity and development of extension programs in a number of countries including Korea, China, Taiwan, Indonesia, and Japan.

His current interest areas include public issues education, community development and capacity building, resource sustainability, marine education and ocean literacy; resource sustainability, civic engagement, and organizational development.

Dr. Don Scavia, Family Professor of Sustainability and Director of the Graham Sustainability Institute, University of Michigan

Dr. Don Scavia is the Graham Family Professor of Sustainability and Director of the Graham Sustainability Institute. He also serves as Special Counsel to the University of Michigan President for Sustainability. In these capacities, he is responsible for engaging the full multidisciplinary assets of the University of Michigan to develop and implement the education, research, and operational goals of its flagship sustainability enterprise, Planet Blue, in support of sustainable communities, ecosystems, and economies from local to global scales.

Scavia is also Professor of Civil and Environmental Engineering and of Natural Resources and Environment. In that capacity, he and his students combine numerical models and environmental assessments to improve the understanding of interactions between human activities on land and their impacts on coastal marine and freshwater ecosystems. Most of thier recent work has focused on impacts on the iconic Gulf of Mexico, Chesapeake Bay, and Great Lakes. His research also supports development and application of Integrated Assessment, a tool that brings together natural systems science, social science, engineering, and environmental policy-making.

Scavia serves on advisory committees for a diverse group of external and internal organizations, and has served as Associate Editor for Estuaries and Coasts and Frontiers in Ecology and Environment, and on the Boards of Directors for the American Society of Limnology and Oceanography, the International Association for Great Lakes Research and the Great Lakes Observing System.

Scavia served as director of Michigan Sea Grant from 2004-2009, SNRE's Research Associate Dean from 2004-2006, and Director of the Cooperative Institute for Limnology and Ecosystems Research from 2004-2007. Prior to joining the Michigan faculty in 2004, he was Chief Scientist for NOAA's National Ocean Service, Director of the National Centers for Coastal Ocean Science, Director of NOAA's Coastal Ocean Program, and research scientist with NOAA's Great Lakes Environmental Research Laboratory. Scavia holds Bachelors, Masters, and Doctorate degrees in Environmental Engineering from Rensselaer Polytechnic Institute and the University of Michigan.

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About the University of Hawai‘i Sea Grant College Program



Hawai‘i’s islands are almost 2,500 miles from the nearest continental landmass and are aesthetically, geographically, culturally, and biologically unique. This presents great opportunities and also challenges for residents and for visitors. At present, residents are largely reliant on imported food and energy, and their distance from the contiguous states complicates the ability of federal resources to respond to natural hazards. Climate change will require changes to lifestyles and commerce both in urban Honolulu and the state’s rural areas. In Hawai‘i, the environment is the economy.

Tourism, the dominant industry, is supported by attractive tropical marine and terrestrial ecosystems, but at significant cost in natural resource use (e.g., energy, water), underlining the need for long-term sustainable solutions to the issues facing Hawai‘i’s communities. While not unique in this regard, Hawai‘i’s isolation underscores a need and urgency to face these issues. As a microcosm for the nation’s coastal communities, Hawai‘i can serve both as a lesson and model for building sustainable, resilient coastal communities supported by healthy productive ecosystems.

The University of Hawai‘i Sea Grant College Program (UH Sea Grant) is part of the prestigious School of Ocean and Earth Science and Technology (SOEST), a unit of the state’s only Carnegie I Research Institution, the University of Hawai‘i at Mānoa (UHM). Nevertheless, the program’s service is truly region-wide, with responsibilities spanning a greater geographic area than any other Sea Grant program. UH Sea Grant integrates research, instructional, and extension faculty, and staff who create and communicate knowledge that builds human resources, and allows citizens, decision-makers, and resource managers to create policy and develop the tools and means to address both the challenges and opportunities ahead. UH Sea Grant has a presence on each of Hawai‘i’s islands, as well as in the U.S.-associated Republic of the Marshall Islands and the U.S. Territory of American Samoa.

UH Sea Grant has five focus areas, all of which support and/or complement the national focus areas while maintaining responsiveness to the unique issues in the insular Pacific. The focus areas are: Sustainable Coastal Development; Hazard Resilience in Coastal Communities; Sustainable Coastal Tourism; Water Resource Sustainability; and Indigenous Cultural Heritage. To address these foci, UH Sea Grant has established Centers of Excellence, a structure which was identified as unique within the Sea Grant network and identified as a “Best Management Practice” by the 2011 Site Review Team. Current centers include the Center for Smart Building and Community Design, Center for Sustainable Coastal Tourism, and Center for Marine Science Education. Two other centers are under consideration for development, the Center for Coastal Processes and Hazard Resilience and Center for Water Resource Sustainability.

A. Organizing and Managing the Program

Leadership

Management team composition and responsibilities

The UH Sea Grant management team provides leadership in service to the people of Hawai‘i through the development and day-to-day implementation of the UH Sea Grant strategic plan. This mobilizes the assets of UH Sea Grant, the university, the state, and the Sea Grant network to address the strategic plan’s objectives and performance measures, and engage stakeholders and partners in collaborative action. Sea Grant management and administration engage in standing weekly meetings, regularly including their National Sea Grant program officer, to update one another, resolve issues, and identify opportunities for collaboration and action. Included below is a partial list of the responsibilities of each team member.

- **Director**: Provides vision for overall program, ensures program activities directly support the UH Sea Grant, National Sea Grant Office (NSGO) and NOAA strategic plans and identifies programmatic opportunities.

- **Associate Director:** Assists the director in the above activities, manages day-to-day programmatic operations, ensures the program meets the requirements of the NSGO and coordinates research from development of proposals through the final reporting stage.

- **Extension Leader**: Supervises extension faculty and staff and oversees all aspects of extension programming and activities.

- **Communications Leader**: Supervises communications staff; develops and manages all media, website, and social networking materials; seeks and identifies opportunities to share the work of Sea Grant locally, regionally, nationally, and internationally; and manages program databases (publication, alumni, eProjects, etc.).

- **Fiscal Administrator**: Supervises support staff and ensures execution of all administrative and fiscal matters consistent with federal, state, and local regulations.

- **Executive Planning Coordinator**: Supervises office staff, provides executive and proposal support, and serves as the contact for the UH Sea Grant Advisory Council, its legislative activities, and university engagement.

- **Program Management Specialist (2)**: Provide logistical and travel support for meetings, executive support services to UH Sea Grant Center of Excellence directors, and assists the executive planning coordinator.

University of Hawai‘i Sea Grant staff and faculty and source of funding

Employee	Title	SG Omnibus	Leveraged Funds	Total
E. Gordon Grau	Director		0.80	0.80
Darren Lerner	Associate Director		1.00	1.00
Ruth Goldstein	Executive Planning Coordinator	1.00		1.00
Kelly Ching	Program Management Specialist		1.00	1.00
Lisa Heindl	Program Management Specialist		1.00	1.00
		1.00	3.80	4.80
Communications				
Lucinda Knapman	Communications Leader	0.50	0.50	1.00
Heather Dudock	Multimedia Specialist	0.70	0.30	1.00
N. Harold Richman	Information Technology Specialist	1.00		1.00
Lyneth Peou	Data Management Specialist	0.80	0.20	1.00
		3.00	1.00	4.00
Fiscal/Human Resources				
Bruce Hamakawa	Fiscal Administrator		1.00	1.00
Joan Yamada	Administrative Officer	1.00		1.00
Diane Sakamoto	Administrative Officer	1.00		1.00
Jaime Hongo	Human Resources Specialist	1.00		1.00
		3.00	1.00	4.00
Extension				
Darren Okimoto	Extension Leader		1.00	1.00
Rosanna Alegado	Sustainability Initiative Faculty (Oceanography)		1.00	1.00
Kelley Anderson Tagarino	Aquaculture Extension Agent	1.00		1.00
Adam Asquith	Extension Specialist	0.10	0.50	0.60
Pelika Bertelmann	Extension Agent	0.50	0.50	1.00
Andrew Bohlander	Shoreline Specialist	0.30	0.70	1.00
Maxine Burkett	Director, Center for Island Climate Adaptation & Policy		1.00	1.00
John Carey	Sustainability Coordinator	0.49		0.49
Shawn Carrier	Outreach Coordinator		1.00	1.00
Chantal Chung	Extension Assistant		0.50	0.50
John Corbin	Affiliate Faculty			0.00
Eric Crispin	Affiliate Faculty			0.00
Mary J. Donohue	Program Specialist	0.50		0.50
Dolan Eversole	NOAA Coastal Storms Program Coordinator for the Pacific Region		1.00	1.00
Karl Fellenius	Coastal Management Extension Agent		1.00	1.00
Oceana Francis	Sustainability Initiative Faculty (Engineering)		1.00	1.00
Matthew Gonser	Community Planning & Design Extension Agent	0.50	0.50	1.00
Christopher Hawkins	Affiliate Faculty			0.00
Kevin Hopkins	Director, Center for Sustainable Aquaculture		1.00	1.00
Robert Howerton	Aquaculture Extension Specialist		0.50	0.50
Dennis Hwang	Coastal Hazard Mitigation Specialist		0.20	0.20
Gavin Iwai	Education Assistant		1.00	1.00
Denise Konan	Director, Center for Sustainable Coastal Tourism		1.00	1.00
Cassidy Lum	Assistant Volunteer Coordinator		0.75	0.75
Morgan Mamizuka	Volunteer Program Coordinator		1.00	1.00
Elizabeth Maynard	Environment Education Extension Agent		1.00	1.00
Stephen Meder	Director, Center for Smart Building & Community Design		1.00	1.00
Wendy Meguro	Sustainability Initiative Faculty (Architecture)		1.00	1.00

Employee	Title	SG Omnibus	Leveraged Funds	Total
Craig Nelson	Sustainability Initiative Faculty (Oceanography)		1.00	1.00
Tara Owens	Coastal Processes Extension Agent		1.00	1.00
Ruby Pap	Coastal Land Use Extension Agent	0.10	0.90	1.00
Stephen M. Pauley	Affiliate Faculty			0.00
Eileen Peppard	Sustainability Specialist	0.15	0.85	1.00
Michael Roberts	Sustainability Initiative Faculty (Economics)		1.00	1.00
Bradley Romine	Coastal Management Specialist	0.20	0.80	1.00
Anne Rosa	Marine Education Specialist		1.00	1.00
Dale Sartor	Affiliate Faculty			0.00
Kanesa Seraphin	Director, Center for Marine Science Education		1.00	1.00
Daniele Spirandelli	Sustainability Initiative Faculty (Urbain & Regional Planning)		1.00	1.00
Sierra Tobiason	Extension Agent	0.06	0.94	1.00
James Turnbull	Affiliate Faculty			0.00
Mehana Vaughan	Sustainability Initiative Faculty (Natural Resources & Environmental Mgmt)		1.00	1.00
Phillip Wirdzek	Affiliate Faculty			0.00
		3.90	28.64	32.54
Total FTE		**10.90**	**34.44**	**45.34**
Total Count				56

Advisory Council membership and function

The UH Sea Grant Advisory Council (SGAC) plays a vital role in guiding the UH Sea Grant management team in program operations. The SGAC members bring broad expertise, experience, strategic advice, and diverse perspectives to the program and include senior officials and leaders from business and industry, county, state, and federal government, educational institutions, and private foundations and organizations, among others. Council members serve two-year terms but may be reappointed to additional terms based upon the needs of UH Sea Grant, our stakeholders, and constituents.

In response to a suggestion by the 2011 NSGO Site Review Team, the SGAC has been provided more regular opportunities to offer new ideas and suggestions to the program and enhance the council's "sense of purpose." This has been achieved, in large part, through enhanced and deeper engagement of individual members or subgroups of the SGAC in various aspects and levels of program development. This is particularly useful as the stature of SGAC members presents scheduling challenges in convening the group in entirety. Nonetheless, the SGAC meets as a group as frequently as needed by UH Sea Grant, on average about twice per year.

Centers of excellence and extension specialists also receive input from their own advisory bodies composed of stakeholders specific to their work.

Examples of Advisory Council Engagement: Since February 1, 2010 members of the UH Sea Grant Advisory Council have been engaged in a combination of formal meetings of the whole, meetings of smaller subsets for topically related foci or "one-on-one" with Sea Grant leadership more than 66 times. As a whole, the council has been convened twice related to formal strategic planning, three times for pre-proposal review and five times for formal broad-based, topical stakeholder engagement workshops. Additionally, on a minimum of 56 other occasions council members have met in smaller groups or "one-on-one" to discuss topically focused strategic planning or specific project ideas.

Advisory Council membership, 2009-2012*, 2012-2014**, and 2014-2016*** funding cycles

Member	Position/Title	Organization	Funding Cycle		
			*1**	*2***	*3****
Bruce Anderson, Ph.D.	Former President and Chief Executive Officer	Hawai'i Health Systems	X	X	X
Geoffrey Anderson	President and Chief Executive Officer	Smart Growth America	X	X	X
Alan M. Arakawa	Mayor	County of Maui			X
George Atta	Director	City and County of Honolulu, Department of Planning and Permitting	X	X	X
Robin Bond	President (retired)	Friends of Hanauma Bay	X		

Member	Position/Title	Organization	Funding Cycle		
			*1**	*2***	*3****
Denny Coffman	House of Representatives - 6th District	Hawai‘i State Legislature			X
Eric Crispin	Vice President	Ohana Real Estate Investors, LLC			X
John Corbin	Program Manager (retired)	Aquaculture Development Program, State of Hawai‘i	X	X	X
H. Mitchell D’Olier	President (retired)	Kāne‘ohe Ranch Company, Ltd.	X	X	X
Rick Egged	President	Waikīkī Improvement Association	X	X	X
Henry Eng	Director	City and County of Honolulu, Department of Planning and Permitting	X		
Alan Everson	Aquaculture Coordinator	NMFS Pacific Islands Regional Office		X	X
Joseph Ferraro	Principal	Ferraro Choi and Associates, Ltd.	X	X	X
Jay M. Fidell	President	ThinkTech Hawaii Inc.			X
Robert “Tim” Guard	President	Pacific Marine Life Foundation		X	X
Neil Hannahs	Director	Land Assets Division, Kamehameha Schools	X	X	X
Rebecca Hommon	Region Environmental Counsel	Commander, Navy Region Hawai‘i		X	X
Hi’ilei Kawelo	Executive Director	Paepae O He‘eia			X
Kevin Hopkins	Director	University of Hawai‘i at Hilo, Pacific Aquaculture and Coastal Resources Center	X		
Robbie Ann Kane	Product Development Manager	Hawai‘i Tourism Authority		X	
Maurice Kaya	Project Director	Hawai‘i Renewable Energy Development Venture		X	X
Harry Kim	Mayor	County of Hawai‘i	X		
Jeff LaDouce	Director (retired)	National Weather Service, Pacific Region		X	X
Samuel L. Lemmo	Chief Planner	State of Hawai‘i Department of Land and Natural Resources, Office of Conservation and Coastal Lands		X	X
Barbara Littenberg	Projects Coordinator	The Medical Foundation for the Study of the Environment	X		
Richard Littenberg, M.D.	Former President and Chief Executive Officer	Honolulu Medical Group	X		
Kem Lowry, Ph.D.	Professor Emeritus	University of Hawai'i, Department of Urban and Regional Planning			X
Jeffrey Mikulina	Executive Director	Blue Planet Foundation	X	X	X
Hermina M. Morita	Former Hawai‘i State Representative; Chair	Hawai‘i State Legislature; State of Hawai‘i Public Utilities Commission	X	X	X
Ernest Nishizaki	Former Executive Vice President and Chief Operating Officer	Kyo-ya Hotels and Resorts		X	X
Robert Parsons	Environmental Coordinator	County of Maui, Office of the Mayor			X
Marylyn Pauley	Board Member	Edwin W. Pauley Foundation and Board of Trustees Pomona College	X	X	X
Dan Polhemus, Ph.D.	Former Administrator	State of Hawai‘i Department of Land and Natural, Division of Aquatic Resources	X		

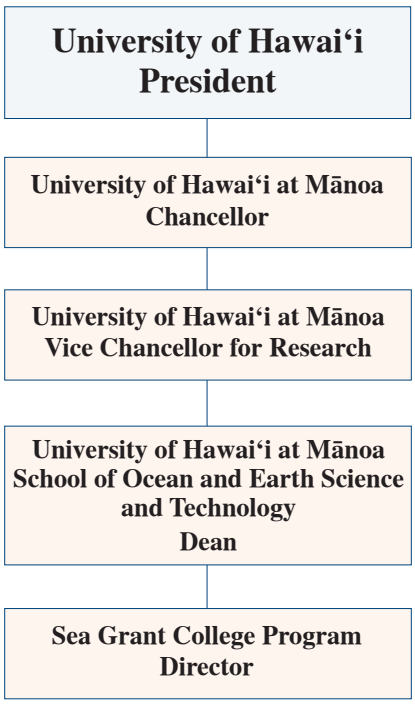
***Funding Cycle 1* = 2009-2012; ****Funding Cycle 2* = 2012-2014; *****Funding Cycle 3* = 2014-2016.**

Member	Position/Title	Organization	Funding Cycle		
			*1**	*2***	*3****
Samuel Pooley, Ph.D.	Director (retired)	Pacific Islands Fisheries Science Center, NMFS, NOAA	X	X	X
C. Barry Raleigh, Ph.D.	Researcher	Hawai‘i Natural Energy Institute	X		
Brian E. Schatz	Former Lieutenant Governor; U.S. Senator	State of Hawai‘i	X	X	X
Francis Schuler, Ph.D.	Executive Director (retired)	National Sea Grant College Program		X	X
Eileen Shea	Pacific Islands Regional Coordinator	NOAA National Environmental Satellite, Data, and Information Service		X	X
Jesse Souki	First Deputy	State of Hawai‘i Department of Land and Natural Resources			X
William Tam	Deputy Director	State of Hawai‘i Commission on Water Resource Management, Department of Land and Natural Resources			X
Edward T. Texeira	Former Vice Director	State of Hawai‘i Civil Defense		X	X
Cynthia Thielen	Representative, 50th District	Hawai‘i State Legislature	X	X	X
Laura Thielen	Former Chairperson; Senator	State of Hawai‘i Department of Land and Natural Resources; Hawai‘i State Legislature	X	X	X
Laura Thompson	Founder	Mālama Maunalua	X	X	
David Waller	Vice President (retired)	Hawaiian Electric Company, Inc.	X	X	X
Ronald Weidenbach	President	Hawai‘i Aquaculture Association	X	X	X

***Funding Cycle 1* = 2009-2012; ****Funding Cycle 2* = 2012-2014; *****Funding Cycle 3* = 2014-2016.**

Program setting within the university and reporting structure (organizational chart)

SEA GRANT COLLEGE PROGRAM ORGANIZATION CHART



Recruiting Talent

Process used to develop request for proposal (RFP) priorities

Competitive research in UH Sea Grant supports the strategic plans of our program, the NSGO, NOAA, and the UHM in the service of our constituents and stakeholders. Our program's research portfolio also serves as a foundation for our graduate education and extension activities. Three research proposal funding cycles have fully or partially spanned the last four years and the period subsequent to the 2010 Site Review Team (SRT) visit and NSGO evaluation of UH Sea Grant. These include the 2009-2012 three-year cycle, which enabled the NSGO to synchronize the proposal cycles of all Sea Grant programs, and the 2012-2014 and 2014-2016 biennia.

The NSGO strategic plan and the UH Sea Grant strategic plan provide foundational guidance to the formulation of our RFP. Broad local constituent participation is also sought for developing RFP priorities. The SGAC provides advice on the relevance of proposals and programs to the needs of the community, state, region, and nation, and assists UH Sea Grant in identifying current and emerging priority areas. The participation of community and business leaders, among others, ensures that this guidance is reflective of diverse community interests. Guidance on current and emerging research themes is also obtained organically from the community through the centers of excellence. The center of excellence model has demonstrated its utility in many ways, including enhancing the development of

RFP priorities through engagement of a broader community base. In 2004, UH Sea Grant founded the first Center of Excellence in Smart Building and Community Design, an interdisciplinary center composed of research and extension faculty from UH Sea Grant and other traditional and non-traditional university units and partners to increase both our ability to deliver services and focus Sea Grant resources. This model proved so effective that over the next ten years, the program organized many of its activities under the centers of excellence model including the Center for Smart Building and Community Design, Sustainable Coastal Tourism, and Marine Science Education. These centers have proven to be effective tools for engaging in both "in-reach" to the broader range of university resources and outreach to the community-at-large. Through the centers' activities, strategic planning meetings with the SGAC and others, and diverse faculty and staff participation, UH Sea Grant maintains a rich foundation on which to identify priorities for inclusion in the research proposal RFPs.

Proposal review process including composition of review panels

A rigorous multi-tiered peer review process that emulates that conducted by the U.S. National Science Foundation was implemented in 2000 by the UH Sea Grant director. Since then, the management and administrative team have refined this process to further increase transparency and competitiveness.

Preliminary Proposal Selection

The review process commences with a request for preliminary proposals (RFPP) announced no later than the first week of December, 14 months prior to the start of the funding cycle (for example, for the 2009-2012 funding cycle the RFPP was announced in December 2007) with a submission deadline approximately three months later. The RFPP is sent to UH campuses system-wide, the University of Guam, Brigham Young University - Hawai'i, Chaminade University, and Hawai'i Pacific University. Notice is also placed in the University of Hawai'i campus bulletin, local newspapers, and sent to an extensive email listserv to achieve broad distribution throughout the state and region. This listserv includes an extensive current and potential list of principal investigators that is maintained and augmented continuously.

The SGAC meets to advise UH Sea Grant on the relevance of submitted pre-proposals to constituents and the greater community. In addition, UH Sea Grant extension faculty provide their input on pre-proposal relevance. To complete the process, an expert Science Review Panel incorporates an assessment of all other reviews (SGAC and extension faculty) and makes recommendations for development of full proposals. The panel for the 2009-2012 funding cycle included Dr. Francis Schuler, (retired) deputy director of the National Sea Grant College Program; Mr. Paul Anderson, director of Maine Sea Grant; and Professor Tetsuya Hirano, (retired) director of the University of Tokyo, Ocean Research Institute. The panel for the 2012-2014 funding cycle included Dr. Francis Schuler, (retired) deputy director of the National Sea Grant College Program; Mr. Paul Anderson, director of Maine Sea Grant; Dr. Russell Moll, (retired) director University of California Sea Grant; Dr. Charles Wilson, Executive Director, Louisiana Sea Grant College Program; and Professor Tetsuya Hirano, (retired) director of the University of Tokyo, Ocean Research Institute. The panel for the 2014-2016 funding cycle included Dr. Ronald Baird, Adjunct Professor, Graduate Faculty University of Rhode Island and (retired) Director of the National Sea Grant College Program; Mr. James Murray (retired), Deputy Director National Sea Grant Office, and; Dr. Nancy Targett, Director, Delaware Sea Grant and Dean, University of Delaware College of Earth, Ocean, and Environment.

Full Proposal Review and Selection

From the Science Review Panel recommendations, UH Sea Grant solicits full proposals and receives them no later than mid-summer in the year prior to award funding. Each full proposal received is evaluated by a minimum of three external (out-of-state) ad hoc referees with expertise in appropriate scientific fields.





Full proposals are evaluated based on the following standardized criteria:

1. Scientific merit and feasibility.
2. Relevance of the proposed effort to the priorities identified in UH Sea Grant's mission and strategic plan, or to other pressing issues in Hawai'i that may arise but are not yet included in the most recent strategic plan.
3. The "track record" of the principal investigator and any affiliate investigators as demonstrated by peer-reviewed papers published, students mentored, and their graduation rate and post-graduation placement, and other peer-refereed competitive grant awards.
4. Value to users, including industry, decision-makers, researchers, and/or graduate, and undergraduate education.
5. Benefit to Hawai'i, its residents, ecosystems, and the public.
6. Investigator's current and proposed collaboration with UH Sea Grant outreach components.
7. The degree of, or potential for, interdisciplinary collaboration and cooperation.
8. The overall value of the proposed work and the potential for successful completion of work within the proposed time frame and budget.

Following this review and based on the content of the full proposals, appropriate External Review Panels are formed for each funding cycle to undertake a final review and proposal selection. Panel members are scholars from outside Hawai'i in disciplines relevant to the proposals' content. External Review Panel members receive copies of all the proposals and ad hoc peer reviews described above. Each member is asked to provide a written review and lead a group discussion as primary reviewer for several proposals and to act as a secondary (written review) and tertiary reviewer for several additional proposals. All panel members are asked to have a working knowledge of all proposals submitted in that funding cycle. Thus, each proposal is initially considered in a dialogue among the three assigned panel reviewers. Other panel members are also invited to add to the discussion of each proposal. The number of proposals assigned to each panel member depends upon the number of full proposals received within their areas of expertise. The External Review Panels meet in early autumn in the year prior to the funding cycle (i.e., September 2008 for the 2009-2012 funding cycle). The full proposal review process is overseen, monitored, and endorsed by the NSGO program officer assigned to UH Sea Grant.

To date, every External Review Panel has been unanimous in their recommendations for funding. They provided the UH Sea Grant director with a list of proposals in the "must fund," "fund if possible," and "do not fund" categories. In each funding cycle, based on the recommendations of the External Review Panel, some principal investigators, who were not recommended for funding, were encouraged to apply for program development funding to improve their concepts, data, or methodology prior to the next call for proposals. The UH Sea Grant director notifies the NSGO of these decisions, documents the rationale for them, and informs potential investigators of the decisions after final approval by the NSGO.

External Review Panel, 2009 – 2012 funding cycle

Member	Title	Organization
Anders W. Andren, Ph.D.	Director	University of Wisconsin Sea Grant
Peggy Fong, Ph.D.	Professor	University of California at Los Angeles
Margo Haygood, Ph.D.	Distinguished Professor	Oregon Health and Science University
Douglas Lipton, Ph.D.	Associate Professor	University of Maryland Department of Agricultural and Resource Economics and Maryland Sea Grant Program Leader
Christopher S. Martens, Ph.D.	William B. Aycock Professor	University of North Carolina at Chapel Hill
James Murray, Ph.D.	Deputy Director (ex-officio)	National Sea Grant College Program
Carl B. Schreck, Ph.D.	Unit Leader and Professor	USGS Oregon Cooperative Fish and Wildlife Research Unit, Oregon State University
David Secor, Ph.D.	Professor	Chesapeake Biological Laboratory

External Science Panel, 2012 – 2014 funding cycle

Member	Title	Organization
Anders Andren, Ph.D.	Director	University of Wisconsin Sea Grant
Ronald Baird, Ph.D.	Research Professor	University of North Carolina Wilmington
Linda Duguay, Ph.D.	Director	University of South California Sea Grant
Jeremy Firestone, Ph.D.	Associate Professor	College of Earth, Ocean, and Environment, University of Delaware
Christopher S. Martens, Ph.D.	William B. Aycock Professor	University of North Carolina at Chapel Hill
Carl B. Schreck, Ph.D.	Unit Leader and Professor	USGS Oregon Cooperative Fish and Wildlife Research Unit, Oregon State University
Kola Garber, Ph.D.	Acting Deputy Director	National Sea Grant College Program

External Science Panel 2014 – 2016 funding cycle

Member	Title	Organization
Anders W. Andren, Ph.D.	Director	Wisconsin Sea Grant College Program
Douglas Lipton, Ph.D.	Senior Research Economist Program	NOAA Fisheries
Kathleen Matt, Ph.D.	Dean, College of Health Sciences	University of Delaware
Russell Moll, Ph.D.	Retired Director	University of California Sea Grant
Carl B. Schreck, Ph.D.	Unit Leader and Professor	USGS Oregon Cooperative Fish and Wildlife Research Unit, Oregon State University
Michael Liffman	Program Director for Extension	National Sea Grant College Program

Number of institutions represented throughout the RFP process

UHM is the only Carnegie 1 Research Institution in the State of Hawai‘i and U.S.-affiliated Pacific Islands. Nevertheless, UH Sea Grant solicits proposals from any university or college and from state and local organizations and individuals in Hawai‘i, and U.S. Pacific territories. Non-UHM proposal submissions are uncommon, but have included those from The U.S. National Marine Fisheries Service (NMFS), East Carolina University (ECU), Occidental College (OC), University of Hawai‘i at Hilo (UHH) and the private Hawai‘i Pacific University (HPU). These latter two institutions focus on teaching and lack Carnegie 1 level research infrastructure and administrative support, and thus, their proposals are often at a competitive disadvantage. Nonetheless, in the 2009-2012 and 2012-2014 biennia, research proposals from University of Hawai‘i at Hilo were competitively awarded research grants.

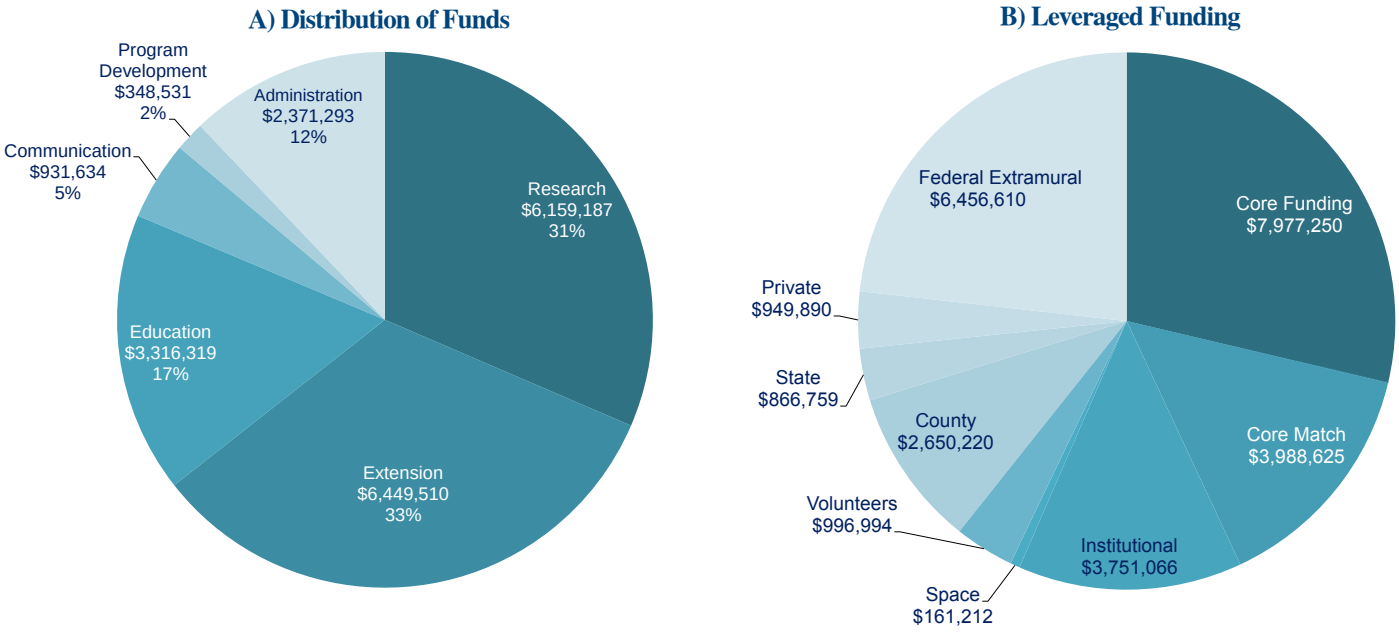
	Funding Cycle		
	2009-2012	**2012-2014**	**2014-2016**
Pre-proposals submitted/#Institutions	42/4	70/5	57/2
Full proposals submitted/#Institutions	30/3	43/4	32/2
Proposals funded/#Institutions	14/2	17/2	15/1

New vs. continuing UH Sea Grant research projects and new research principal investigators

	Funding Cycle		
	2009-2012	**2012-2014**	**2014-2016**
New Projects	10	15	16
Continuing Projects	3	2	1
New Principal Investigators	2	8	7

Funding

Comprehensive A) Distribution of Funds and B) Leveraged Funding 2010-2013



B. Stakeholder Engagement

Sea Grant aligns program priorities with the principal drivers of Hawai‘i’s coupled economy and environment. This ongoing process engages stakeholders from all sectors, a large subset of whom actively partner with the program toward mutual goals at any given time.

Hawai‘i’s coupled economy and environment are dominated by an amalgam of tourism, development and construction, and the state’s mid-ocean location; the most geographically isolated place on planet Earth. Hawai‘i’s population far exceeds the carrying capacity of what its resource base and ecosystems can provide. Only ceaseless importing of food, energy, and other goods allows current lifestyles. For example, though blessed with abundant wind, solar, and wave energy, Hawai‘i is more dependent on imported oil than any other state in the nation; though surrounded by water, most of Hawai‘i’s seafood is imported; though possessing an ideal climate for aquaculture, Hawai‘i’s landmass is limited, and labor costs and the regulatory burden are high; and though construction is a major industry, the great majority of building supplies are shipped in from elsewhere.

Perhaps nowhere is the nexus among activity on land and coastal ecosystem health more apparent than in Hawai‘i. No place in Hawai‘i is farther than 29 miles from a coastline and the state’s isolation means that there is no one to blame for coastal pollution but ourselves. Further still, Hawai‘i, like other coastal and insular locales, is especially vulnerable to the consequences of global climate change, and its attendant rise in sea level, increases in ocean temperature and acidification, and putative increases in the frequency and severity of storms.

These were factors that drove the processes of prioritization and stakeholder engagement. Another factor was the robust presence of NOAA and the University of Hawai‘i’s ocean and coastal research enterprise. The question was how to dovetail and synergize with these capabilities rather than duplicate them to dissipated effect. This led inevitably to the need to exercise care in selecting projects and priorities, and in all cases, to partner. Fortunately, there was a convergence among the priorities identified by our discovery process and the transition that was occurring throughout the Sea Grant network as a whole. In both cases, there has been an engagement of new sets of stakeholders, and a shift in focus and priority.

Another major element of UH Sea Grant’s strategic planning, prioritization, and stakeholder engagement came from its continued participation in the development and implementation of the Hawai‘i Ocean Resources Management Plan (ORMP) led by the local Coastal Zone Management Program. The ORMP process engaged virtually every constituency

and stakeholder group in the state. It provided a separate and independent mechanism that led in all significant ways to a set of priorities that are strongly similar to those found in the NSGO Strategic Plan. It also provided an efficient, cost-shared means for integrating Sea Grant with other state agencies and NOAA assets in addressing the challenges, risks, and opportunities facing coastal Hawai‘i stakeholders.

In 45 years, core federal funding to UH Sea Grant (and many other state Sea Grant programs) has remained relatively flat, effectively reducing our "buying power." Despite this effective reduction in federal investment, UH Sea Grant has increased our service quantitatively, qualitatively, and geographically during this time. A benefit of constrained budgets is that it drives the need for efficiency through partnering. Prior to 2000, UH Sea Grant acted largely in isolation from other units at the University of Hawai‘i, including SOEST. This stemmed to an important degree from the "stovepiped" culture of the university itself. The assets were present, but lacked concerted application. This provided the opportunity to engage the university community through "in-reach" as both stakeholders and as a base of resources that might be applied to the UH Sea Grant enterprise. From this, the "Centers of Excellence" model and structure developed to produce a multidisciplinary capacity that integrates physical, natural, and social sciences with design and law, reflective of the diversity of the constituents we serve. The centers integrate the human resources of UH Sea Grant with those of other units and organizations, both within the University of Hawai‘i System, within government at the state and county levels, and with the private sector. Our aim is to support the development of good policy derived from unbiased fact-based knowledge that, in turn, leads to the implementation of improved and enlightened practice that, in turn, realizes and justifies the policy. The centers, which are served and administered by UH Sea Grant, have produced a synergy and the means for all of the partnering units to serve coastal Hawai‘i stakeholders in a manner that is far more effective than known previously. By design, the centers engage stakeholders in the identification of challenges, risks, and opportunities, in the setting of priorities, and in the enterprise that addresses them.

In addition to its centers, UH Sea Grant engages with its stakeholders in many other ways. Stakeholders serve on the SGAC as well as in advisory capacities in its extension program. SGAC members participate in the UH Sea Grant's strategic planning process, provide input on the relevance of pre-proposals during the RFP process, and provide ongoing informal and formal direction to Sea Grant leadership on priority needs and issues in the state. UH Sea Grant extension faculty engage stakeholders through daily implementation of extension activities; by service on university and government committees, community groups and non-profit boards; and by working on collaborative projects initiated by themselves or their stakeholders. Stakeholder input derived from these various mechanisms of engagement is used in prioritizing our research, outreach, and education efforts as well as in crafting our RFPs.

One means of stakeholder engagement that we have found especially effective and successful is the cost-sharing of UH Sea Grant extension faculty positions with stakeholders where possible. For example, two faculty are based with the State of Hawai‘i Department of Land and Natural Resources and provide technical assistance to state agencies on shoreline assessments, coastal hazard mitigation, policy development, and climate change adaptation. We also have two faculty who are seconded to county planning departments on Kaua‘i and Maui and provide similar services to their respective county departments.

Leadership by UH Sea Grant staff on boards and committees

UH Sea Grant faculty have held well over 100 leadership and committee positions since the previous site review. Selected examples include:

International, National, and Regional

- Pacific Climate Information System (PaCIS) Steering Committee (Okimoto)
- Association of Collegiate Schools of Architecture, Regional Director (Meder)
- Association of Collegiate Schools of Architecture, Publications Committee (Meder)
- Extension Disaster Education Network (EDEN) Liaison with FEMA NDPTC (Eversole, Bohlander)
- The Coastal Society (TCS), Board of Directors (Bohlander)
- Pacific Risk Management ‘Ohana (PRiMO) Risk Assessment and Planning Hui Sub-Committee (Owens, Eversole, Pap, Bohlander)
- Commonwealth of the Northern Mariana Islands and Guam Coastal Erosion Technical Advisory Committee (Eversole)
- National Marine Sanctuary of American Samoa Sanctuary Advisory Council (Tagarino)
- American Samoa Coral Reef Advisory Group, Department of Commerce (Tagarino)
- American Samoa Coral Reef Advisory Group, Land-Based Sources of Pollution Local Action Strategy Committee (Tagarino)
- American Samoa Coral Reef Advisory Group, Fisheries Local Action Strategy Committee (Tagarino)



- American Samoa Coral Reef Advisory Group, Climate Change Local Action Strategy Committee (Tagarino)
- American Samoa Governor's Coral Reef Advisory Group Scholarship Committee (Tagarino)
- The International Society for Microbial Ecology Journal, Editorial Board (Nelson)
- Journal of Architectural Education Editorial Board (Meder)
- The Council on Food, Agricultural and Resource Economics (C-FARE) Blue Ribbon Panel on Climate Change (Roberts)
- Journal of Environmental Economics and Management, Co-Editor (Roberts)
- Journal of the Association of Environmental and Resource Economists, Co-Editor (Roberts)
- Agricultural and Resource Economics Review, Editorial Board (Roberts)
- Journal of Agricultural and Resource Economics, Editorial Board (Roberts)
- Pacific Islands Ocean Observing System, Marshall Islands, National Liaison (Fellenius)
- Preliminary Environmental Assessment Development Committee, Marshall Islands EPA (Fellenius)
- Environmental Management Plan Review Committee, Marshall Islands EPA (Fellenius)
- The Pacific-American Climate Fund, Climate Change Review Committee – Fisheries & Aquaculture, Micronesia (Fellenius)
- National Marine Educators Association, Board Member (Seraphin)
- ASLO 2014 Ocean Sciences Meeting, Honolulu, HI, Session Organizer and Chair of Sea-ing connections: Ocean science as a catalyst to inspire the next wave of young (preK-16) scientists and keep students engaged within and outside the classroom (Seraphin)
- Na Maka o Papahānaumokuākea, Kuka'i Laulaha Steering Committee (Bertelmann)
- Papahānaumokuākea Marine National Monument Cultural Working Group Chair (Bertelmann)
- Polynesian Voyaging Society World Wide Voyage STEM Initiative (Bertelmann)
- US/Japan Joint Symposium in Ocean, Coastal and Atmospheric Sciences, Board Chair (Lerner)
- General and Comparative Endocrinology, Guest Editor (Lerner)
- Atmosphere and Ocean Research Institute, review panel member (Grau)
- US/Israel Joint Symposium on Cichlid Endocrinology, Co-chair (Lerner)

State and Local

- State of Hawai'i Department of Land and Natural Resources Division of Aquatic Resources, Community Based Subsistence Fishing Area Advisory Committee (Vaughan)
- State of Hawai'i Department of Education, State Science Content Panel (Seraphin)
- OCEANIA (local chapter of the National Marine Educators Association) Chair Elect, Chair, Past Chair, and Board Member (Seraphin)
- National Science Foundation Center for Ocean Science Education Excellence - Island Earth Executive Committee Member and Communications Committee Chair (Seraphin)
- State of Hawai'i Department of Land and Natural Resources Aquatic Organism Taskforce (Donohue)
- State of Hawai'i Selection Committee for Renewable Energy Power Purchasing Agreement (Meder)
- Hawai'i Shore and Beach Preservation Association, Vice President (Eversole)
- Hawai'i Shore and Beach Preservation Association, Board of Directors (Bohlander, Romine, Owens, Pap)
- Hawai'i Coastal Zone Management Program and State of Hawai'i Office of Planning, Ocean Resource Management Plan (ORMP) Committee Working Group (Bohlander, Romine, Owens, Eversole)
- Hawai'i State Civil Defense Tsunami Observer Program (Bohlander, Eversole)
- Hawai'i Clean Energy Initiative (HCEI), State of Hawai'i Department of Business, Economic Development and Tourism (Meder)
- State of Hawai'i Civil Defense Tsunami Technical Review Team (Eversole)
- Society of Building Science Educators Retreat Planning Committee (Meguro)
- American Institute of Architects, New York Committee on the Environment Steering Committee (Meguro)
- Kaua'i County Green Office Challenge Team Green Lantern, Co-Captain (Pap)
- North Shore Greenprint, Steering Committee Member (Bohlander)
- Hanalei to Hā'ena Disaster Resilience Committee (Pap)
- EnVision Downtown Hilo Working Group Member (Bohlander)
- Hilo Bay Watershed Advisory Group (Bohlander)
- Hawaiian Islands Land Trust, Kaua'i Advisory Council (Vaughan)
- Mālama Kaipalaoa Working Group Member (Bohlander)

- Mālama Pūpūkea-Waimea Working Group Member (Bohlander)
- University of Hawai‘i Site Selection and Design Committee for the Obama Presidential Library (Meder)
- Kamehameha Schools Bishop Estate Biotechnology Advisory Committee (Alegado)
- Kailua Urban Design Task Force, Board Member (Meder)
- Native Hawaiian Health Care Systems Institutional Review Board (Alegado)
- Landscape Industry Council of Hawaii, Landscape Sustainability Awards Judging Committee (Meguro)
- American Planning Association, Hawai‘i Chapter, Director-at-Large (Gonser)
- Better Block Hawai‘i, Co-Founder (Gonser)
- Hawai‘i Chapter of the American Planning Association, University of Hawai‘i at Mānoa, Department of Urban & Regional Planning (DURP) Liaison, Committee Chair (Gonser)
- Urban Land Institute (ULI), Hawai‘i District Council, Strategic Planning Committee (Gonser)
- American Society of Landscape Architects, Hawai‘i Chapter, Executive Committee, Member-at-Large (Gonser)
- Neighborhood Board No. 8, McCully-Mō‘ili‘ili, City and County of Honolulu, Treasurer (Gonser)
- Woja Causeway Assessment, Coastal Advisor, Ailinglaplap Atoll, Marshall Islands (Fellenius)
- Airport Causeway Assessment, Coastal Advisor, Jaluit Atoll, Marshall Islands (Fellenius)
- Shoreline Assessment & Protection, Coastal Advisor, Ailuk Atoll, Marshall Islands (Fellenius)
- Aquaculture Researcher Hiring Committee, Land Grant, Majuro, Marshall Islands (Fellenius)
- Maui Nui Marine Resource Council (Owens)
- University of Hawai‘i Maui College Marine Options Program, Advisor (Owens)
- South Maui Volunteers (Hoaloha ‘Āina), Advisor (Owens)
- Hawai‘i Environmental Education Alliance, Executive Advisory Board (Maynard)
- State of Hawai‘i Department of Education Task Force for development and update of statewide framework for environmental education, grades K-12 (Maynard)
- Hawai‘i Audubon Society, Board member (Maynard)
- Hawaiian Islands Humpback Whale National Marine Sanctuary Program - Sanctuary Advisory Council, Vice Chair and Education Chair (Maynard)
- American Samoa Humane Society, Co-chair (Tagarino)
- 2013 Honolulu District Science Fair, Safety Review Committee Chair (Maynard)
- Outrigger Duke Kahanamoku Foundation, Board of Directors (Rosa)
- Paia Learning Center, Maui, Board of Directors (Howerton)
- Ao‘ao O Na Loko I‘a O Maui (Association of the Fishponds of Maui), Board of Directors (Howerton)
- Mayor’s Maui County Agriculture Committee Advisor (Howerton)
- Kailapa Community Association, Wellness Park Steering Committee (Bertelmann)
- Conservation International’s Hawaii Fish Trust Community Stewardship Advisory Group (Bertelmann)
- Mālama Makali‘i Ocean Festival Planning Committee (Bertelmann)
- Na Kalai Wa‘a and Makali‘i Voyaging Ohana, Planning Committee and Crew Member (Bertelmann)
- Na Maka o Papahānaumokuākea, Pilinakai/Na Kilo Aina Steering Committee (Bertelmann)
- Kanu o Ka ‘Āina New Century Charter School, Ka Iwi Kuamo‘o Advisor (Bertelmann)
- Maunalua Fishpond Heritage Center, Board of Directors and Treasurer (Lerner)
- Hawaii Industrial Advisory Board (Lerner)
- Center for a Sustainable Future, President (Grau)
- Network of Volunteer Leaders, Executive Council Secretary (Mamizuka)

Sea Grant

- Sea Grant Association, President and Past President (Grau)
- National Sea Grant College Program Knauss Fellowship Application Review Committee (Knapman, Lerner, Okimoto)
- Sea Grant Extension Assembly Network, Treasurer (Okimoto)
- Sea Grant Extension Assembly Network, Pacific Representative (Okimoto)
- Sea Grant Climate Change Network, Steering Committee (Eversole, Bohlander)
- Sea Grant Climate Change Network, Steering Committee, Pacific Islands Representative (Owens)



• Sea Grant Communication Network, Chair (Knapman)
• Sea Grant Network Advisory Council, Member (Knapman)
• Sea Grant Fisheries Education and Extension Network (Okimoto, Tagarino)
• Sea Grant Sustainable Coastal Community Development Network, Pacific Regional Coordinator (Lerner)
• Sea Grant Sustainable Coastal Community Development Network, Pacific Regional Representative (Gonser)
• Sea Grant Marine Education Network (Seraphin, Maynard)
• National Sea Grant College Program Coastal Natural Hazards Theme Team (Eversole, Owens)
• National Sea Grant College Program Hazard Resilient Coastal Communities Focus Team (Hwang, Bohlander, Lerner)
• National Sea Grant College Program Sustainable Coastal Development Focus Team (Carey)
• University of Hawai'i Sea Grant College Program Ascent Conference, Steering Committee (Grau, Donohue, Lerner, Knapman, Alegado, Roberts, Bertelmann)
• University of Hawai'i Sea Grant College Program Ascent Conference, Green Buildings Session Planning Committee (Donohue, Meguro)
• University of Hawai'i Sea Grant College Program Ascent Conference, Water Session Planning (Okimoto, Pap)

Other NOAA and Agency

• NOAA Pacific Islands Regional Team, UH Sea Grant Representative (Okimoto)
• NOAA Pacific Regional Outreach Group, UH Sea Grant Representative (Okimoto)
• NOAA Pacific Climate Information System Sea-Level Rise Focus Team (Eversole)
• The Pacific Regional Integrated Sciences and Assessments (RISA) Program Advisory Committee (Eversole)
• NOAA American Samoa Working Group (Tagarino)
• NOAA Regional Climate Services, 2014 Marshall Islands Climate Dialogue, Planning Team (Fellenius)
• NOAA Regional Climate Services, 2014 Vanuatu Climate Dialogue, Planning Team (Fellenius)
• Northwestern Hawaiian Islands Coral Reef Ecosystem Reserve Advisory Council (Bertelmann)
• Intertidal Monitoring Partnership, Steering Committee (Bertelmann)

Key partnerships and stakeholders with examples of how the program involves its partners and stakeholders

Sea Grant engages with stakeholders from all sectors, a large subset of whom actively partner with the program toward mutual goals at any given time. All partners are stakeholders as they share in the risk and rewards of joint activities. Stakeholders are affected by an endeavor, e.g., through benefits, and have varying levels of investment in specific activities from simply providing tax dollars to fund federal and state projects to actively conducting research, outreach or education activities with UH Sea Grant faculty and staff. As mandated, UH Sea Grant's primary stakeholders include the residents and visitors of the State of Hawai'i, the National Oceanic and Atmospheric Administration, the National Sea Grant Office, and the University of Hawai'i. Other important stakeholders include the people of the U.S. Affiliated Pacific Islands, e.g., American Samoa and the Marshall Islands. These stakeholders and subsets therein represent UH Sea Grant's partners at any one time.

The following set of principles helps determine which programs and other entities are ripe for partnering and possible investment by UH Sea Grant:

Scientific Expertise and Track Record: Program is proven commodity with an excellent record of follow-through on commitments. Program is grounded in sound science with proven knowledge and links to a larger body of academic marine, environmental, and social science expertise.

Commonality: Program shares common goals or common audience with UH Sea Grant.

Leveraging: Program has proven capacity to deliver applied research and/or outreach so that UH Sea Grant's investment will pay incremental costs rather than bear the full costs of programs and add value to both partners' efforts.

"Two-Way Street": Both programs can articulate the mutual benefits (both strategic and specific) derived from a UH Sea Grant partnership, and have a mutual understanding of the mandates of the parent organizations.

Responsible Cadre of Interested Partners: Groups have a cadre of qualified, responsible partners who express a strong interest in partnering with UH Sea Grant on a strategic, long-term basis.

Fiscal Stability: Program has stable staff and funding base, assuring that UH Sea Grant investments will be utilized judiciously for the greatest good.

List of key partners/stakeholders with examples

International

- Korea Sea Grant: Korea-U.S. Sea Grant Collaboration International Workshop 2010: Community-based Coastal Area Management through Sea Grant, Fourth Annual Korea Sea Grant Week 2012, Fifth Annual Korea Sea Grant Week 2013, Memorandum of Agreement with Jeju Sea Grant
- NOAA International: NOAA-Korea Integrated Coastal and Ocean Resources Management: Coastal Erosion Workshop 2010, Korea-U.S. Sea Grant Collaboration International Workshop 2010: Community-based Coastal Area Management through Sea Grant, Expo 2012: The Living Ocean and Coast, Fourth Annual Korea Sea Grant Week 2012, Fifth Annual Korea Sea Grant Week 2013
- Okayama University: Cooperative Agreement with UHM to conduct collaborative research and student exchange
- Tokyo University: Cooperative Agreement with UHM to conduct collaborative research and student exchange
- Tokyo University of Marine Science and Technology: Joint Research Collaboration and assistance in development of a Japan Sea Grant Program

National

- National Science Foundation: SOEST Effects of Sea Level on Wave-Driven Inundation for Reef-Fringed Shorelines project in the Marshall Islands project
- Pacific Ocean Literacy for Youth, Publics, Professionals and Scientists (POLYPPS) project through the Center for Marine Science Education
- NOAA Coastal Storms Program: Partnership with UH Sea Grant on the NOAA Sea Grant Pacific Islands Coastal Storms Program
- NOAA Coastal Services Center: NOAA Coastal Management Fellowship Program partner
- NOAA Integrated Ocean Observing System: Partnership with SOEST and UH Sea Grant on the Pacific Island Ocean Observing System project
- NOAA National Marine Fisheries Service (NMFS): Multi-Cultural Marine Conservation Exchange Program project, Pacific Capacity Building project, Pu‘uhonua: Ensuring a safe place for honu (sea turtles) in Hawai‘i through Visitor Industry Outreach and Education, Reef Watch Waikīkī Community Monitoring project, Western and Central Pacific and Hawai‘i Fishery Sustainability: Impacts and Implications of Future Climate Change on Fisheries project, Addressing Bottlenecks to the Development of Hawai‘i’s Bivalve Industry project, An Angler-based Tagging Program for Bonefish (Albula spp.) in Hawai‘i: Engaging Fishermen in Science and Conservation project, Supporting Pacific Islander Capacity Building Through Training in Underwater Surveying Techniques project, Coastal Water Monitoring - Tool Kit (C-Water Kit) project, Multicultural Marine Conservation Exchange Project Phase II project, Multicultural Marine Conservation Exchange Phase II Project: Community Event Series and Videography project, Building Pacific Island Capacity by Documenting Climate Change Events of the Past project
- NOAA National Marine Sanctuaries Program: Partnership on the Ocean Awareness Training Program, Partnership with the Hanauma Bay Education Program, American Samoa and Hawaiian Islands Humpback Whale National Marine Sanctuary Advisory Councils, Memorandum of Agreement with UH Sea Grant
- NOAA National Weather Service Honolulu Office and the Pacific Tsunami Warning Center: Homeowner’s Handbook to Prepare for Natural Hazards project.
- NOAA Oceanic and Atmospheric Research: Sea Grant Association NOAA Employee Survey project
- Labs21 Center of Excellence in Marine Laboratory Design (Labs21 is a joint EPA/DOE initiative)
- US Department of Energy (Labs21): Hawai‘i Institute of Marine Biology Retrofit project
- US Agency for International Development: Residents’ Natural Hazards Handbook for the Republic of the Marshall Islands project
- United States Department of Agriculture: UH Sea Grant research (Grau and Lerner), Increasing Access to Safe Drinking Water for Rural Hawai‘i Island Communities Utilizing Rainwater Catchment project

Regional

- American Samoa Community College: UH Sea Grant Extension partnership, NOAA NMFS Pacific Capacity Building project, Pacific Island Ocean Observing System project, NOAA NMFS Supporting Pacific Islander Capacity Building Through Training in Underwater Surveying Techniques project
- College of the Marshall Islands: UH Sea Grant Extension partnership, Pacific Islands Ocean Observing System project, SOEST Effects of Sea Level on Wave-Driven Inundation for Reef-Fringed Shorelines project in Marshall Islands project, Residents’ Natural Hazards Handbook for the Republic of the Marshall Islands project through the NOAA Sea Grant Pacific Islands Coastal Storms Program and US Agency for International Development, 2014 Marshall Islands Climate Dialogue workshop and 2014 Vanuatu Climate Dialogue workshop
- Delaware Sea Grant: Center for Sustainable Coastal Tourism, Sea Grant Week Sustainable Coastal Tourism Workshop 2010, Delaware Homeowner’s Handbook to Prepare for Natural Hazards project
- USDA Extension Disaster Education Network (EDEN): UH Sea Grant Extension partnership with UHM College of Tropical Agriculture and Human Resources Cooperative Extension
- Gulf of Mexico Alliance: Florida Homeowner’s Handbook to Prepare for Natural Hazards project
- Guam Sea Grant: Pacific Islands Ocean Observing System project, Insular Pacific Regional Research Needs Assessment and Information Planning project, Assessment of Hazards Awareness and Participatory Planning for All Hazards Resiliency on Guam project through the NOAA Sea Grant Pacific Islands Coastal Storms Program
- Louisiana Sea Grant: Sea Grant Week 2010, Louisiana Homeowner’s Handbook to Prepare for Natural Hazards project
- Maine Sea Grant: Hawai‘i Coastal Access Website project, Working Waterfronts Conference, Sea Grant Association, Center for Sustainable Coastal Tourism, Sea Grant Week Sustainable Coastal Tourism Workshop 2010

- Massachusetts Institute of Technology (MIT) Sea Grant/Woods Hole Sea Grant: Massachusetts Homeowner's Handbook to Prepare for Natural Hazards project
- Mississippi/Alabama Sea Grant: NOAA Sea Grant Pacific Islands Coastal Storms Program, Alabama Homeowner's Handbook to Prepare for Natural Hazards project. Mississippi Homeowner's Handbook to Prepare for Natural Hazards project, National Sea Grant Law Center: White Paper on Current State of Law on Regulation of Coastal Development and Managed Retreat project through the Center for Island Climate Adaptation and Policy
- NOAA Pacific Islands Regional Collaboration Team: UH Sea Grant representation
- NOAA Pacific Regional Outreach Group: UH Sea Grant representation
- NOAA Pacific Services Center: NOAA Exploring our Fluid Earth: NOAA Ocean Science Curriculum, Teacher Professional Development and Public Outreach project through the Center for Marine Science Education
- NOAA Pacific Climate Information System (PaCIS): Partnership with the College of the Marshall Islands on the 2014 Marshall Islands Climate Dialogue workshop and 2014 Vanuatu Climate Dialogue workshop
- Non-point Education for Municipal Officials (NEMO): UH Sea Grant Community Planning and Design Extension faculty serve as the Hawai'i point of contact
- Office of US Senator Brian Schatz: Partnership on the "Ascent: Building a Secure and Sustainable Water and Energy Future for Hawai'i conference and the Stephen and Marylyn Pauley Seminar in Sustainability featuring Former US Vice President Al Gore"
- Oregon Sea Grant: Rain Garden Training Workshop project
- Pacific Risk Management 'Ohana (PRiMO): Sea Level Rise Inundation Policy Study through the Center for Island Climate Adaptation and Policy, NOAA Sea Grant Pacific Islands Coastal Storms Program partnership, UH Sea Grant Extension participation
- Pacific Islands Ocean Observing System: Establishment of a regional association and ocean observing system in Hawai'i and the Insular Pacific in partnership with UH Sea Grant and the UHM School of Ocean and Earth Science and Technology
- Texas Sea Grant: Texas Homeowner's Handbook to Prepare for Natural Hazards project
- USDA Center for Tropical and Subtropical Aquaculture: Diversifying Freshwater Aquaculture Products for Hawai'i: Two Crossover Species, The Red and Black Pacu project
- U.S. Agency for International Development: Residents' Natural Hazards Handbook for the Republic of the Marshall Islands project in partnership with the College of the Marshall Islands and NOAA Sea Grant Pacific Islands Coastal Storms Program

State

- Hawai'i Cooperative Fishery Research Unit: Bonefish Tagging Program project, Maunalua Bay Bonefish Fishery and Diet Assessment project
- UH Sea Grant Extension partnership Hawai'i Tourism Authority: Building Community Capacity through Education and Outreach to Address Land-based Pollution in Maunalua Bay project, Waikīkī Ecosystem Restoration Extension project
- Maui Community College: UH Sea Grant Extension partnership
- Natural Energy Laboratory of Hawai'i Authority: UH Sea Grant Extension partnership
- State of Hawai'i Department of Business, Economic Development and Tourism: Sea Water Air Conditioning project through the Center for Sustainable Coastal Tourism, Center for Smart Building and Community Design partnership
- State of Hawai'i Coastal Zone Management Program: Hawai'i Ocean Resources Management Plan Policy and Working Groups participation, Homeowner's Handbook to Prepare for Natural Hazards project, Mālama Maunalua Extension project
- State of Hawai'i Department of Land and Natural Resources: UH Sea Grant Coastal Lands Extension project, UH Sea Grant Shoreline Specialist Extension project, UH Sea Grant South Kohala Coastal Partnership Extension Project
- State of Hawai'i Department of Health: Implementation of best management practices to reduce nonpoint pollution and storm water runoff in the Wai'ula'ula Watershed project
- University of Hawai'i at Hilo Pacific Aquaculture and Coastal Resources Center: Partnership on the Center for Sustainable Aquaculture, UH Sea Grant Marshall Islands Extension project, National Sea Grant Aquaculture Research Initiative 2010, National Sea Grant Aquaculture Extension Initiative 2010, County of Hawai'i GIS-Based Assessment of Coastal Aquaculture Potential, Pacific Islands Ocean Observing System; Insular Pacific Regional Research Needs Assessment and Information Planning project; NOAA NMFS Addressing Bottlenecks to the Development of Hawai'i's Bivalve Industry project, USDA Center for Tropical and Subtropical Aquaculture Developing Bivalve Culture to Diversify and Position Hawai'i as a Supplier of Safe, Premium Edible Shellfish project, Multicultural Marine Conservation Exchange Phase II Project: Community Event Series and Videography project, UH Sea Grant Hawai'i Island Extension Project
- University of Hawai'i Pacific Disaster Center: Geospatial Information Development and Application to Support Effective Decision-Making in the Federated States of Micronesia project through the NOAA Sea Grant Pacific Islands Coastal Storms Program
- UHM Hawai'i Institute of Marine Biology: Center for a Sustainable Future Photovoltaic project, UH Sea Grant research
- UHM College of Social Sciences: Partnerships on the Center for Island Climate Adaptation and Policy, Center for Sustainable Coastal Tourism, Partnership on the Coastal Sustainability Faculty Hiring Initiative (Department of Economics)
- UHM College of Tropical Agriculture and Human Resources: Partnership on Hui 'Āina Momona Faculty Hiring Initiative with the UHM Hawai'inuiākea School of Hawaiian Knowledge (Department of Natural Resources and Environmental Management) and the Hawai'i Rainwater Catchment Program
- UHM Office of the Chancellor Tom Apple: Partnership on the Ascent: Building a Secure and Sustainable Water and Energy Future for Hawai'i conference and the Stephen and Marylyn Pauley Seminar in Sustainability featuring Former US Vice President Al Gore

- UHM School of Ocean and Earth Science and Technology: Partnership on the Center for Island Climate Adaptation and Policy, Center for Sustainable Coastal Tourism, and Pacific Islands Ocean Observing System project; UH Sea Grant research, Insular Pacific Regional Research Needs Assessment and Information Planning project, Partnership on the Coastal Sustainability Faculty Hiring Initiative (Department of Oceanography)
- UHM William S. Richardson School of Law: Partnership on the Center for Island Climate Adaptation and Policy
- UHM School of Architecture: Partnership on the Center for Smart Building and Community Design, Center for Sustainable Coastal Tourism, Partnership on the Coastal Sustainability Faculty Hiring Initiative
- UHM College of Education: Partnership on the Center for Marine Science Education
- UHM College of Engineering: Partnership on the Coastal Sustainability Faculty Hiring Initiative (Department of Civil and Environmental Engineering)
- UHM School of Travel Industry Management: Partnership on the Center for Sustainable Coastal Tourism
- UHM Department of Urban and Regional Planning: Partnership on the Center for Smart Building and Community Design, Center for Sustainable Coastal Tourism, Partnership on the Coastal Sustainability Faculty Hiring Initiative
- UHM Hawai‘inuiākea School of Hawaiian Knowledge: Hawaiian Language Newspaper project, Partnership on the Center for Island Climate Adaptation and Policy and Center for Sustainable Coastal Tourism, Partnership on the Hui ‘Aina Momona Faculty Hiring Initiative with the UHM College of Tropical Agriculture and Human Resources
- UHM Office of the Vice Chancellor for Research and Graduate Education: Partnership with the Aquaculture Program Coordinator

Local

- Awaiaulu: Hawaiian Language Newspaper project, NOAA NMFS Pacific Capacity Building project, Building Pacific Island Capacity by Documenting Climate Change Events of the Past project
- Center for a Sustainable Future: Hawai‘i Institute of Marine Biology Photovoltaic project
- City and County of Honolulu: Center for Smart Building and Community Design, Hanauma Bay Education Program project, Transit-oriented Development project, Homeowner’s Handbook to Prepare for Natural Hazards project, Ready Hawaii Smartphone Application project through the NOAA Sea Grant Pacific Islands Coastal Storms Program
- Conservation International Hawai‘i: Community-based Marine Resource Monitoring and Assessment Toolkit project
- County of Hawai‘i: County of Hawai‘i Coastal Hazards Sea Grant Extension Project, County of Hawai‘i Community Development Plan project, County of Hawai‘i GIS-Based Assessment of Coastal Aquaculture Potential project
- County of Kaua‘i: County of Kaua‘i Sea Grant Extension project
- County of Maui: County of Maui Sea Grant Coastal Hazards Extension project, County of Maui Sea Grant Aquaculture Extension project, Post-Disaster Reconstruction Guidelines and Protocols for Conservation of Coastal Resources and Protection of Coastal Communities, Maui County, Hawai‘i project through the NOAA Sea Grant Pacific Islands Coastal Storms Program
- Kona-Kohala Chamber of Commerce: Partnership with UH Sea Grant Extension on the 10th through 12th annual Earth & Ocean Festival at Keahou, Kona
- Kyo-ya Hotels and Resorts: Sea Water Air Conditioning project through the Center for Sustainable Coastal Tourism, UH Sea Grant Sustainable Coastal Tourism Fellowship Program
- Mālama Maunalua: Partnership with UH Sea Grant Extension, SGAC
- National Association of Counties: Community-based Restoration of the Waikīkī Marine Life Conservation District project
- Pacific Marine Life Foundation: Partnership with UH Sea Grant Extension on the Mālama Maunalua project, SGAC
- The Harold K.L. Castle Foundation: Partnership with UH Sea Grant on the West Hawai‘i Extension project, Waikīkī Ecosystem Restoration Extension project, Mālama Maunalua Extension project, and the ‘Ō‘io Tagging project, SGAC
- The Nature Conservancy: Maunalua Bay Bonefish Fishery and Diet Assessment project
- Waikīkī Aquarium: Waikīkī Ecosystem Restoration project, Hanauma Bay Education Program partnership, Community-Based Restoration of the Waikīkī Marine Life Conservation District project
- Waikīkī Improvement Association: Waikīkī Ecosystem Restoration project

C. Collaborative Network and NOAA Activities

Selected short descriptions of collaborative activities/projects with other Sea Grant, NOAA, and additional agency partners

NOAA Coastal Storms Program

Since 2010 UH Sea Grant has been partnering with the NOAA Coastal Storms Program on a NOAA Sea Grant Pacific Islands Region Coastal Storms Program that serves Hawai‘i and the U.S.-affiliated Pacific Island territories. The regional program assists communities by enhancing their community resilience to storm-related hazards and climate change impacts (e.g., sea-level rise) by providing assessment tools, up-to-date information, and outreach and coordination support. In 2012, the program conducted a small grants proposal process to distribute $1 million in funds for fiscal years 2013-2015. Six projects throughout Hawai‘i, Guam, the Marshall Islands, and Micronesia were selected for funding. The areas of study



include atmospheric and weather modeling and observation, geospatial data hosting and serving, community resilience training, disaster recovery planning, and coastal hazard mitigation and education.

National Sea Grant Climate Change Network

There is a need for education on the immediate and long-term impacts of climate change (and other coastal hazards) on human safety and property along the nation's coasts, as well as how to prepare for and survive these events. UH Sea Grant collaborated with other Sea Grant programs to establish the National Sea Grant Climate Change Network (SGCN). The SGCN charter was approved by the Sea Grant Extension Assembly in 2009 to increase the effectiveness of Sea Grant climate programming and outreach nationwide by coordinating Sea Grant climate-related activities, sharing talent and resources, and working with climate agencies and organizations within NOAA and the communities that Sea Grant serves. Two UH Sea Grant extension agents have served as Pacific Island Representatives on the National Steering Committee for the SGCN from 2011-present and have been involved in supporting programmatic activities. The network conducted a successful workshop entitled "National Sea Grant Climate Network Workshop," in Santa Monica, California in March 2013. The workshop included updates from Sea Grant programs across the nation on Coastal Community Climate Adaptation Initiative (CCCAI) projects, as well as professional development training on climate change communication. In 2013, the network also created a StormSmart Coasts web-based forum for Sea Grant extension faculty to share resources and facilitate discussion on climate-related projects. New in 2014-2015, the network is initiating a monthly webinar series to allow individual Sea Grant programs to highlight their climate-related work for a national audience.

National Collaboration and Focus on Sustainable Coastal Tourism

Tourism is a major economic driver in coastal states. It also presents significant natural, cultural, and social challenges to many coastal communities. Maintaining a healthy, sustainable coastal tourism industry requires that increased attention be given to the energy, water, and waste demands and impacts that tourism places on coastal ecosystems. Our Center for Sustainable Coastal Tourism is working with Delaware and Maine Sea Grant to develop a national research and extension network to address tourism-related issues. Numerous small workshops were held in preparation for the national Coastal Tourism Roundtable led by Hawai'i, Delaware, and Maine Sea Grant, and which included representation from all of the Sea Grant programs, the National Sea Grant Office, the National Sea Grant Advisory Board, and several national leaders in tourism including Isabel Hill, Director of the Department of Commerce, International Trade Administration, Office of Travel and Tourism industries. During the roundtable a development team was identified and subsequent white paper developed and submitted to the National Sea Grant Office. In 2013 UH Sea Grant became a member of the International Congress on Coastal and Marine Tourism and planning is now underway for UH Sea Grant to host the next international coastal and marine tourism congress in the fall of 2015.

Regional Sea Grant Extension Network Support for the Republic of the Marshall Islands

Many Pacific Islands are especially vulnerable to natural hazards and the effects of climate change, especially the Republic of the Marshall Islands (RMI) which consists of 33 low-lying atolls and islands. RMI is also confronted with the effects of rapid urban and industrial development, a common scenario in the insular Pacific. A UH Sea Grant extension faculty position was hired in 2009 and located at the College of the Marshall Islands (CMI) to work in tandem with a local multi-institutional advisory board and the private sector. Extension agent activities include research on coastal processes, public outreach, teaching, and liaising with other technical specialists and relevant regional initiatives. The agent also assists CMI in developing and teaching a coastal management curriculum to build future local capacity.

Regional Sea Grant Extension Network Support for American Samoa

American Samoa is a U.S. Territory in the South Pacific. American Samoa is highly vulnerable to tsunamis and other coastal hazards and is challenged with climate change impacts and waste management issues. Its commercial tuna cannery provides access to fishmeal for aquaculture feed and sustainable aquaculture development. Since 2002, UH Sea Grant has maintained an extension agent at the American Samoa Community College (ASCC) to serve as an extension and education resource. A member of the ASCC Land Grant Program and Science Department faculty, the agent develops local capacity in marine resource management, including aquaculture development, and represents ASCC on several advisory groups. The agent

provides public education aimed at increasing awareness of local ecosystem health and global environmental changes, teaches courses at ASCC, and serves as the American Samoa representative for the NOAA PacIOOS project. The agent also mentors student research projects, internships and service learning programs, and manages accredited, vocational certificate programs in aquaculture and marine science (Marine Option Program).

Pacific Islands Ocean Observing System

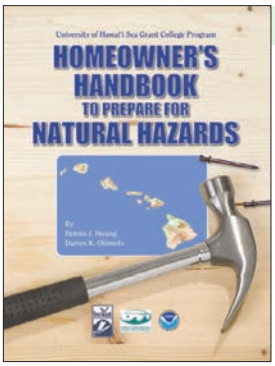
The Pacific Islands Ocean Observing System (PacIOOS) is one of 11 regional observing programs that support the emergence of the U.S. Integrated Ocean Observing System. PacIOOS is guided through a collaborative governance framework, and is administered by the University of Hawai‘i at Mānoa School of Ocean and Earth Science and Technology (SOEST) and funded by NOAA, SOEST, and the state of Hawai‘i. PacIOOS develops observational, modeling, data management, and outreach for an end-to-end ocean observing system designed to ensure a safe, clean, and productive ocean and a resilient coastal zone for the U.S. Pacific Islands. UH Sea Grant extension faculty serve in two positions in PacIOOS as representatives for the Marshall Islands and American Samoa and have been assisting with deploying and maintaining water quality instruments and a wave buoy in the Marshall Islands.

Insular Pacific Regional Research, Information Planning Coordination Project

In 2006, NOAA awarded funding to eight regions for the NSGO Regional Research, Information Planning, and Coordination competition. This project supported the development of regional research and information plans that complement national planning efforts by bridging national and local research and information needs for U.S. ocean, coastal, and Great Lakes areas. From 2006-2011, UH Sea Grant conducted the Insular Pacific region project, which includes the State of Hawai‘i, American Samoa, Guam, and the Commonwealth of the Northern Mariana Islands, as well as the RMI, the Federated States of Micronesia, and the Republic of Palau. Project activities included: 1) establishing a regional coordination group to oversee planning and implementation of the research and information strategy; 2) conducting a “bottom-up” needs assessment with broad user and stakeholder input; 3) identifying research and information gaps; 4) developing a research and information plan for the region that prioritizes actions according to management-critical needs; 5) developing coordination mechanisms to ensure technology and information transfer to end users; and 6) providing an ongoing platform for coordination, collaboration, and resource sharing.

NOAA Pacific Services Center-Led Pacific Risk Management ‘Ohana

The Pacific Risk Management ‘Ohana (PRiMO; ‘ohana is Hawaiian for extended family) is comprised of local, national, and regional agencies, institutions, organizations, and academia engaged in risk management in the Pacific. PRiMO, which is supported through the NOAA Pacific Services Center, is committed to enhancing regional communication, coordination, and collaboration. PRiMO provides a platform to encourage coordination and collaboration to leverage resources for more effective action. Members are experts in their field and together bridge the information gaps between science and service providers, decision-makers, and other stakeholders. The UH Sea Grant associate director and seven Sea Grant faculty participate in PRiMO.



Handbook Developed for Hawai‘i Residents on How to Prepare for Natural Hazards

Hawai‘i stakeholders experience multiple natural hazards that include hurricanes, tsunamis, earthquakes, floods, and climate change impacts (e.g., sea level rise). Many homeowners are unprepared and lack information on emergency planning and preparedness. In response, UH Sea Grant produced the *Homeowner’s Handbook to Prepare for Natural Hazards*. The guidebook provides up-to-date practical information to homeowners and the means to significantly lower serious risks to lives and property. UH Sea Grant led 20 partners, including the NOAA Weather Service and Pacific Tsunami Warning Center, local civil defense agencies, insurance companies, hurricane protection vendors, banks, and the American Red Cross, who contributed technical information and/or funding support for publication. To date, 65,000 copies of the handbook have been printed and distributed to stakeholders and partners. In 2013, UH Sea Grant received the prestigious Dr. Arthur Chiu Award for Excellence in Hurricane Preparedness from the Hawai‘i State Civil Defense for its efforts to make Hawai‘i’s communities safer through its excellent work on the handbook. In addition, university Sea Grant programs in Alabama, Delaware, Florida, Louisiana, Massachusetts, Mississippi, and Texas have produced homeowner handbooks with assistance from UH Sea Grant. New Jersey and Washington Sea Grant programs are currently developing handbooks as well. The College of the Marshall Islands is developing a Marshallese version of the handbook with funding from the NOAA Coastal Storms Program, U.S. Agency for International Development, and UH Sea Grant.

Coastal Hazard Mitigation Guidebooks

UH Sea Grant authored and published the *Hawai'i Coastal Hazard Mitigation Guidebook* for audiences ranging from developers and architects to homeowners and government officials. The book describes how to reduce risks to coastal development by planning for hazards such as erosion, flooding, tsunamis, and hurricanes. The Federal Emergency Management Agency used the guidebook extensively in rebuilding efforts after the 2005 Atlantic hurricane season and government officials in Mississippi and Louisiana requested dozens of copies. Government officials in Indonesia have requested that the author write an Indian Ocean version after he visited Bande Ache to consult on rebuilding efforts after the 2004 tsunami. The author also worked with Louisiana Sea Grant to write an analogous Gulf Coast guidebook.

Maunalua Bay Restoration and National Nonpoint Source Education for Municipal Officials (NEMO)

Maunalua is a highly urbanized region on the island of O'ahu that encompasses Maunalua Bay and its ten adjacent watersheds. The region is approximately 28 square miles in size, with 6.5 square miles of ocean waters and more than seven miles of shoreline. Ten streams and innumerable storm drain outlets empty into the bay and a marina. Major threats to the health of the bay include impaired water quality due to polluted runoff and siltation and invasive algae species. Mālama Maunalua is a community-based non-profit organization restoring the health of Manunalua Bay. UH Sea Grant has partnered with Mālama Maunalua to support the organization's efforts to restore Maunalua Bay through a combination of education, outreach, and coordinated community management efforts. UH Sea Grant helped establish a collaboration with the National Nonpoint Education for Municipal Officials (NEMO) Co-founder Chester Arnold and Network Coordinator David Dickson who conducted a NEMO presentation and scoping meeting for key community, government, and industry partners involved in the restoration of Maunalua Bay. The meeting improved awareness and understanding among the participants of the role of NEMO and its tools and educational resources that could be applied to Maunalua Bay. Follow up meetings are scheduled for February 2015 for other communities in Hawai'i.

Water Resource Sustainability and Security

The availability and security of water resources is emerging as a defining issue domestically as increased demand is coupled with altered rainfall patterns and storm characteristics associated with climate change. Additionally, awareness of the "Energy-Water Nexus," that water is utilized to produce energy and vice versa, is compelling intensified attention in Hawai'i where energy rates are the highest in the nation and most energy is generated by burning imported oil. Much energy is utilized for air conditioning, often employing cooling towers that use millions of gallons of fresh water annually. Research, education, and outreach on sustainable water technologies and practices including rainwater catchment for potable and non-potable uses, stormwater management including rain gardens, and aquaponics are an increasing focus of UH Sea Grant. Some examples of our collaboration in this area include: 1) in 2012, UH Sea Grant conducted a lauded workshop on sustainable water practices with federal, state, and city agencies, academia, industry, elected officials, and the top practitioners of water catchment in Hawai'i and the nation; 2) in 2013, UH Sea Grant entered into an memorandum of understanding with the American Rainwater Catchment Association (ARCSA) to promote adoption of sustainable water practices in the region and conducted a "sold-out" joint ARCSA accreditation and training workshop on O'ahu; 3) in 2013, UH Sea Grant assumed oversight and leadership of the rainwater catchment program established by the College of Tropical Agriculture and Human Resources (CTAHR) at the University of Hawai'i at Mānoa; 4) in 2013, the Sea Grant director was named and remains the interim director of the USGS-funded Water Resources Research Center at UH Mānoa; 5) in 2013, as part of UH Sea Grant's successful sustainability initiative, one of seven new tenure-track faculty members was hired jointly with the CTAHR Department of Natural Resources and Environmental Management. Another of the seven sustainability initiative faculty hired jointly with Department of Civil and Environmental Engineering is an expert in flow dynamics and plumping and is conducting a comprehensive water use study at the university's Hawai'i Institute of Marine Biology on Coconut Island; and 6) in 2014, a UH Sea Grant program specialist was awarded a competitive USDA grant of 150K to conduct outreach on the safe and sustainable use of rainwater catchment to rural, underserved, communities on the island of Hawai'i.



Number and types of regional/multi-program projects/awards

Project	Year	Funding Entity	Award Amount
Exploring our Fluid Earth: NOAA Ocean Science Curriculum, Teacher Professional Development and Public Outreach	2010-2014	NOAA Office of Education	$1,250,000
NOAA Coastal Storms Program	2010-2014	NOAA Coastal Services Center	$2,268,426
Supporting Pacific Islander Capacity Building Through Sea Grant Extension Activities	2010-2013	NOAA NMFS PIRO	$59,352
Western and Central Pacific and Hawaii Fishery Sustainability: Impacts and Implications of Future Climate Change on Fisheries	2009-2011	NOAA NMFS PIRO	$30,000
Regional Network Support RMI	2010-2014	NOAA NGSO	$157,000
Regional Network Support RMI	2008-2011	NOAA NSGO	$210,000
PacIOOS Regional Association Support	2010-2011	NOAA IOOS	$399,973
Insular Pacific Regional Research and Information Planning	2006-2011	NOAA NSGO	$400,000
U.S.-Affiliated Pacific Islands Region Gap Analysis for Hazard Planning Implementation	2012-2013	NOAA	$30,000
Regional Network Support (American Samoa)	2010-2014	NOAA NSGO	$400,000
Marshallese Homeowner's Handbook	2013	USAID	$80,885

Success in Sea Grant national competitions

Competition	FY2010	FY2011	FY2012	FY2013	FY2014
NOAA Sea Grant Aquaculture Research Program National Strategic Initiative	$141.1K	$141.1K	$291K	$91K	
NOAA Sea Grant Aquaculture Extension and Technology Transfer National Strategic Initiative	$100K				
NOAA Sea Grant Coastal Community Climate Adaptation Initiative	$30 K	$30K	$30K	$30 K	
Knauss Fellowship Applications/Awarded/ Accepted	2/1/1	4/3/1	6/3/1	4/2/2	5/1/1

D. Program Changes Resulting from Previous Site Review

The previous SRT highlighted several *Best Practices* at UH Sea Grant, found the program did not warrant *Recommendations* and *no Recommendations* were provided by the 2011 SRT.

The 2011 SRT offered a handful of suggestions for the program's consideration. UH Sea Grant recognized the expertise, wisdom, and value of the SRT's guidance and voluntarily embarked on actions to implement these suggestions. The program's responses to suggestions are available upon request.



University of Hawai‘i Sea Grant College Program
2525 Correa Road, HIG 238 • Honolulu, Hawaii 96822 • (808) 956-7031
http://seagrant.soest.hawaii.edu