

NATIONAL SEA GRANT ADVISORY BOARD

MARCH 7-8, 2016

SPRING 2016 MEETING

BRIEFING BOOK

NAME

WASHINGTON PLAZA HOTEL

WASHINGTON, DC



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Agenda



Agenda
National Sea Grant Advisory Board (NSGAB) Spring Meeting
March 7-8, 2016
The Washington Plaza
10 Thomas Circle, NW, Washington, DC
(near McPherson Square Metro Station)

Monday, March 7, 2016

Jefferson Room

OPEN TO THE PUBLIC 8:30 am – 5:00 pm EST

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| 7:00-8:30 | Breakfast (No. 10 Thomas Restaurant-onsite) |
| 8:30 – 9:00 | Welcome, introduction of new members, review of agenda, approval of minutes, Chair’s Update (Dale Baker, Chair, NSGAB) |
| 9:00 – 9:45 | National Sea Grant College Program (NSGCP) Update (Nikola Garber, Deputy Director, NSGCP) |
| 9:45 – 10:30 | NOAA Research Update & Discussion (Craig McLean, Deputy Assistant Administrator, NOAA Research) |
| 10:30 – 11:00 | Break |
| 11:00 – 11:45 | Sea Grant Association (SGA)/Sea Grant Week Update (Sylvain DeGuise, President, SGA) |
| 11:45 – 12:00 | Member-at-Large Slate and Vote (D. Baker, NSGAB) |
| 12:00 – 1:00 | Break for Lunch (in meeting room) |
| 1:00 – 1:30 | 10-Year NOAA Sea Grant Aquaculture Vision (LaDon Swann, SGA) |
| 1:30 – 2:15 | Strategic Planning (Peg Brady, Detail, National Sea Grant Office; S. DeGuise, SGA) |
| 2:15 – 3:00 | Focus Area Updates (NSGO Knauss Fellows) |
| 3:00 – 3:30 | Break |
| 3:30 –4:00 | Globalization (Richard Vortmann, NSGAB) |
| 4:00 – 4:30 | Program Implementation & Evaluation (PIE) Committee II Report (Richard West) |

- 4:30 – 5:00 Discussion of day’s topics and wrap-up (D.Baker, NSGAB)
- 5:00 Public Meeting recessed until 8:30 am Tuesday, March 8, 2016
- 5:00 – 6:00 Advisory Board Business Meeting (Board Only)**

Tuesday, March 8, 2016

Jefferson Room

OPEN TO THE PUBLIC 8:30 am – 12:00 pm EST

- 8:30 – 8:45 Call to Order and follow up from previous days meeting
- 8:45 – 9:00 Public Comment Period
- 9:00 – 9:45 NOAA Liaison Report (D. Baker, NSGAB; Elizabeth Rohring, NSGO)
- 9:45 – 10:00 National Ocean Sciences Bowl (NOSB) Update (Rosanne Fortner, NSGAB)
- 10:00 – 10:30 Break
- 10:30 – 10:45 Sea Grant 50th Anniversary Update (Brooke Carney, NSGO)
- 10:45 – 11:15 Biennial Report Update (R. Fortner, NSGAB)
- 11:15 – 11:45 Member Updates
- 11:45 – 12:00 Discussion of meeting topics and wrap-up (D. Baker, NSGAB)
- 12:00 Meeting Adjourned (Lunch is in the Ballroom Foyer)**

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November 2015 Draft Minutes



National Sea Grant Advisory Board (NSGAB) Fall Meeting
November 3-4, 2015
Meeting Minutes

Hilton Hawaiian Hotel
2005 Kalia Road
Honolulu, HI 96815

Tuesday, November 03, 2015

OPEN TO THE PUBLIC 8:00 AM-5:00 PM HST

Roll Call:

Dale Baker, Paulinus Chigbu, Rosanne Fortner, Judith Gray, Brian Helmuth, Amber Mace, Michael Orbach, Nancy Rabalais, Rolland Schmitt, Richard Vortmann, Richard West, Nikola Garber (*ex-officio*), Sylvain DeGuise (*ex-officio*)

National Sea Grant Office (NSGO): Jim Berkson, Joshua Brown, David Chorney, Jonathan Eigen (Designated Federal Officer), Elizabeth Rohring

Other Attendees: Devaney Cherie, MS-AL Sea Grant; Penelope Dalton, Washington Sea Grant; Tim Downs, MIT Sea Grant; Edward Gordon Grau, Consultant for the NSGAB; Jennifer Hinden, National Sea Grant Office Contractor, Acentia; James Hurley, Wisconsin Sea Grant; Darren Lerner, Hawaii Sea Grant; Craig McLean, National Oceanic and Atmospheric Administration (NOAA) Office of Oceanic and Atmospheric Research (OAR); Jen Merrill, Delaware Sea Grant; James Murray, Consultant for the NSGAB; Lynn Wardwell, Maine Sea Grant; Joel Widder, Sea Grant Association; and Kathy Bryant, Starshine, Yiju Huang, Karman, and Ariana Kim from the Office of Senator Brian Schatz

Introductions, review agenda, approval of minutes, etc. (R. Schmitt, Chair, NSGAB)

March 2015 Draft Minutes

Motion by Dr. Rabalais to approve the March 2015 draft minutes with recommended changes that will be sent by the NSGAB to Ms. Hinden.

Dr. Mace 2nd, unanimous approval.

Motion Approved.

NOAA Research Update & Discussion (Craig McLean, Assistant Administrator, NOAA Research)

Mr. McLean discussed a possible marketing plan for Sea Grant. The public increasingly relies on NOAA's products and no one knows that better than Sea Grant Extension.

Q&A/Comments: Dr. Orbach asked what the NSGAB can do to be more useful to the NSGO and/ or to Mr. McLean. Mr. McLean replied the NSGAB can make the rest of NOAA aware of how great Sea Grant is, as you provide your feedback to NOAA through the chain of command, and by describing to Dr. Sullivan where you see how Sea Grant can be maximized.

Dr. Grau noted it would be beneficial for NOAA to brainstorm how Sea Grant is important to NOAA. Mr. McLean thinks it would be a great thing to add to the marketing plan. Where he really sees the gap is in awareness of what Sea Grant is and how it works. There are some people in NOAA who don't know what line office Sea Grant is in. He thinks we can close those gaps by mobilizing Sea Grant veterans. The notion would be to increase the engagement of the utility of Sea Grant where Sea Grant can be funded by other programs such as Coastal Services, National Ocean Service (NOS), National Marine Fisheries Service (NMFS), and National Weather Service (NWS).

Dr. Murray asked Mr. McLean to elaborate on the idea of a marketing plan and whether or not there is a need for the NSGAB. Back in 1999, the NSGAB had a committee chaired by John Byrne that developed a really excellent report "A Mandate to Engage Coastal Users". There are institutional issues that need to be revisited. He feels the marketing plan can building on the report that was done long ago. Mr. McLean noted there is a high value in looking at similar products. There is currently a critical period in the staffing of the NSGO. Mr. McLean feels senior voices of the SGA and NSGAB along with the AA in unison should engage other line offices.

National Sea Grant College Program (NSGCP), Director's Update (Nikola Garber, Acting Director, NSGCP)

Handouts: Sea Grant Appropriations & Program Officer Roles

Referred Reports for reading: Building Partnerships in NOAA-Byrne Report; Response, Integration Team Report; Sea Grant Research Report; Harvard Ledge Study.

Q&A/Comments: Admiral West noted pass-through money is the way to grow. Mr. Eigen noted the NSGO does not always accept overhead costs for pass-through money with the anticipation of building a partnership in the future. Some funds take a lot of work, and they want to encourage others to go through the NSGO. Dr. Garber added that the NSGO brings in \$140K a year in overhead for the John D. Knauss Marine Policy Fellowship Program.

In response to the Intergovernmental Personnel Agreement (IPA) discussion, Dr. DeGuise noted it is a heavy commitment on the programs to send their staff to the NSGO because they are also low on staffing. He suggested the NSGO look into the possibility of IPA's working part-time. It would be more ideal to have them work 2-3 days a month on a topic and develop relationships. It's very unlikely someone can commit a year or two. It would be better to define tasks rather than a time frame.

Sea Grant Association Update (Sylvain DeGuise, President, Sea Grant Association)

Comments: Admiral West noted the Science Research Council (SRC) came up with a future study to discuss what the NOAA OAR's role is 20 years from now. The SGA, NSGAB, and NSGO are all looking into the future of Sea Grant, and it needs to be in line with the study, and to make sure Sea Grant's capabilities are included.

Sea Grant 50th Anniversary Update (M. Orbach, NSGAB)

Dr. Orbach and Mr. Schmitt are representatives from the NSGAB. The Sea Grant 50th Anniversary will kick off in Washington, D.C. in March 2016. There will be a series of events involving the Hill and NOAA, followed by monthly themes.

The Knauss reception will include high level officials and Sea Grant Ambassadors. Representative Frank Pallone and Senator Brian Schatz were recommended as possible speakers as Sea Grant played a major role in their career. The monthly themes are as follows: March 2016 - The First 50 Years of Sea Grant, April 2016 - Knauss Marine Policy Fellowship, May 2016 - Community Resilience, June 2016 - Coastal Tourism, July 2016 - Water Resources, August 2016 - Graduate Education, September 2016 - Healthy Coastal Habitats, October 2016 - Aquaculture and Seafood, November 2016 - Workforce Development, December 2016 - Sustainable Development, January 2017 - "K to Gray" Education, February 2017 - Climate, and March 2017 - The Next 50 Years of Sea Grant.

A few things the committee is working on: showcasing Sea Grant trainees and Knauss fellows on where they are now, a 5-7 minute video, a congressional resolution, and a presidential proclamation addressing Sea Grant.

Comments: It was suggested that the group approach the National Marine Sanctuaries to showcase Sea Grant and have a speaker, a display at the Smithsonian Folklife Festival, and a national press release. Dr. DeGuise noted that West End Communications did a 71 page report on how Sea Grant can improve their communication and includes press contacts. Dr. Fortner suggested doing a series of stories on how Sea Grant has impacted a community or a life.

Reauthorization (N. Garber, NSGCP; R. Schmitt, NSGAB; S. DeGuise, SGA)

The S. 764 Reauthorization bill was replaced with Planned Parenthood. It is now under H.R. 1900 and being represented by Congresswoman Brenda Lawrence in Michigan. The Reauthorization bill has not been changed since replaced by the Parenthood Act. The goal is to correct the perception that is a Democratic bill. This is a bi-partisan bill in the Senate and that is the goal in the House Resources Committee.

Biennial Report to Congress (R. Fortner, NSGAB)

It is required that the NSGAB report to Congress every two years on the state of Sea Grant. The document lets the legislators know what's important to Sea Grant and where the program areas are meeting their responsibilities.

The proposed Sea Grant Reauthorization amends the language to production of this report at least every 3 years. It was suggested that the new report reflect Sea Grant's 50th Anniversary theme and what's been accomplished since inception.

Sea Grant Visioning/Sea Grant Roadmap (N. Garber, NSGCP; R. Schmitt, NSGAB; S. DeGuise, SGA)

During the last joint NSGAB and SGA meeting, the need to maintain the viability of Sea Grant was discussed. There was general support when that concept was put forward. The NSGAB and SGA need to look at the next 10 to 20 years, rather than the normal 4-year Strategic Plan. Sea Grant has brought forward the many great topics looking into the future that include climate change, weather, sea level rise, coastal resiliency, El Niño, and El Niña.

The Visioning Committee would have representation from the NSGAB, NSGO, and SGA. The goal is to have a draft by the March 2016 meeting and a final product in 2017. The audience of the document is NOAA, Congress, and Sea Grant partners and stakeholders. The document should discuss where Sea Grant will be 20 or so years from now and how to do it once a vision has been reached. The roadmap can come after the vision is accepted.

Comments: Dr. DeGuise noted if Sea Grant is going to engage in a campaign within NOAA, it would be nice to know where the committee is going in January before the President's budget is out.

Dr. Murray suggested stakeholders be involved in the comments, as well. This is an ally for selling and promoting Sea Grant's vision. Mr. Schmitt and Dr. Garber will collect suggested names of stakeholders.

Program Implementation & Evaluation (PIE) (N. Garber, NSGCP)

Admiral West suggested the NSGAB conduct a PIE II Committee to re-review the process and bring recommendations back to the NSGAB.

Comments: The Board agrees that the site visits should be incorporated into the review process. There is also a concern with the frequency of reviews and it was suggested that the reviews be conducted every three years and the PIE cycle be extended to 5 years. It was noted that the SGA has been discussing the process and also have recommendations.

Motion by Admiral West that he chair the PIE II Committee to review both the PIE and SRT processes.

Dr. Orbach 2nd, unanimous approval.

Motion approved.

Strategic Planning 2018-2021 (N.Garber, NSGCP)

Dr. Garber is looking for volunteers to be a part of the National Strategic Planning Committee to discuss whether or not the process should stay the same or change. The final draft NSGP should be complete by FY16 so that programs could put out their requests for proposals. Dr. Garber suggested an FY 18-19 plan followed by a 4-5 year plan.

Q&A/Comments: Dr. DeGuise noted that the evaluation process is not a concern, but calling for proposals for the next two years and not knowing what you are doing for the next 4 years is a problem, because it has to be relevant with the Strategic Plan. It will be discussed during the SGA meeting the following day.

Dr. Hurley suggested giving the SGA more time at Sea Grant Week. Dr. DeGuise suggested the committee think more along the lines of visioning rather than mandating a big exercise. Mr. Eigen noted the NSGO is considering a two year tabling of long term strategic planning and extend the current plan 2 years with minor updates where necessary and really go forward with long term strategic planning and visioning.

Dr. Garber suggested moving forward with a visioning committee and PIE II Committee to look at both of these processes with a draft final by the 2016 March Meeting. After the report, the Strategic Planning Committee will update or massage the current Strategic Plan with any updates for a 2 year period, and then the State programs can update their Strategic Plans. Following that the NSGO would do a full fledged 20-23 strategic planning process.

Dr. Grau suggested constituting theme teams. Dr. Garber replied theme teams help with ideas for focus areas which could feed off of visioning and that's a lot of information that could go into the Strategic Plan. It helps lessen the burden of the few people making up the review team. Dr. Mace noted if the theme teams feed into the Strategic Plan it needs more buy-in and engagement. We can fill this time with the engagement we said we didn't get last time and discuss how we want to engage.

Dr. DeGuise suggested the Program Mission Committee to have a discussion on how that could work, what could be the steps and timing and what could be the process that would influence the next Strategic Plan and report in March before the process is laid out.

Chair, Vice-Chair, Member-at-large Vote (R. Schmitten, NSGAB)

The Nominating Committee nominated for Chair, Mr. Dale Baker, and Dr. Amber Mace for Vice Chair pending no other nominations. No other nominations were brought forward. The NSGAB will vote on the Member-at-large position during the spring 2016 meeting.

Mr. Vortmann motioned to approve the nominations put forth by the Nominating Committee, as is. Dr. Rosanne Fortner 2nd, unanimous approval. Motion Approved.

National Ocean Sciences Bowl (R. West, NSGAB)

A brief overview was given on the National Ocean Sciences Bowl (NOSB) and the issues with the recent budget and how it has hurt the programs that fund the NOSB. Admiral West proposed the NSGAB look at a more formal relationship with Sea Grant and the NOSB, and see how Sea Grant can play a role in continuing this event. Admiral West wants Sea Grant to support the NOSB if they go to the Hill, etc. He wants solidity within the NOSB budget line and match it. A reasonable budget for the NOSB to run is \$1.2M a year, and the current budget is less than \$1M.

Admiral West motioned that Dr. Fortner chair the committee with his assistance to review the NOSB and how Sea Grant can participate with no assurance of funding. Dr. Helmuth offered his assistance. Dr. Nancy Rabalais 2nd, unanimous Approval. Motion approved.

Public meeting recessed until 8:00 am Wednesday, November 4, 2015.

Wednesday, November 4, 2015

OPEN TO THE PUBLIC 8:00 AM-12:00 PM HST

Roll Call:

Dale Baker, Paulinus Chigbu, Rosanne Fortner, Judith Gray, Brian Helmuth, Amber Mace, Michael Orbach, Nancy Rabalais, Rolland Schmitten, Richard Vortmann, Richard West, Nikola Garber (*ex-officio*), Sylvain DeGuise (*ex-officio*)

National Sea Grant Office: Jim Berkson, Joshua Brown, David Chorney, Jonathan Eigen (Designated Federal Officer)

Other Attendees: Penny Dalton, Washington Sea Grant; Edward Gordon Grau, Consultant for the NSGAB; Jennifer Hinden, National Sea Grant Office Contractor, Acentia; Darren Lerner, Hawaii Sea Grant; James Murray, Consultant for the NSGAB

Public Comment Period

No Public Comments

Charge to the Board-Review of the Sea Grant Extension-NOAA Liaison Positions (Dale Baker, NSGAB)

An overview of the charge was given. A conclusion of the review was not reached. The main goal is to standardize the agreements and discuss how to expand them further. Currently, there is a lack of knowledge on the need for these positions, as well as, the uncertainty of federal funding. It was discussed that the agreed upon cost each section pays is very ad hoc although newer agreements have been negotiated in the recent years.

Comments: Dr. Brown noted, the person in the position is responsible for finding funding to pay for part of their salary and it weighs heavily on their ability to perform.

Dr. Murray noted Sea Grant should put aside National Strategic Investment Money (NSI) money to help market Sea Grant. Sea Grant can lay out their outreach needs and put together an agreement. The NSGAB agreed the final product should be marketed within NOAA.

Mr. Schmitten concluded the conversation noting the committee will have their finished product to present to the NSGAB at the March meeting.

Globalization of the Sea Grant Model (R. Vortmann, NSGAB)

The purpose of the discussion is to look at options of expanding the Sea Grant model around the world. There needs to be legal clarity on the legislative language in the Sea Grant Legislation as to what Sea Grant can and can't do globally. For the short term the Globalization Committee will seek to invite Korea

to attend the March/October Meeting to discuss their relationship with Sea Grant and how other countries can participate legally.

Q&A and Comments: Mr. Schmitt noted NOAA has an Office of International Affairs Assistant Director who would be a great person to talk to on promoting the Sea Grant model.

Mr. Eigen noted the international language has been taken out of Sea Grant's Legislation, but the regular bill limits where we are supposed to do our work. This includes the US Coastal Zone, territories and high seas. We can't work in other governments' territorial waters.

Dr. Grau noted he has a lot of connections with Japan, and he has suggested using something close to the Sea Grant model. They are very interested, but have the same issue Sea Grant faces with funding. One idea to get around that is to have a Sea Grant conference at the Tokyo University Science and Technology Center to involve Sea Grant, Korea, and Japan. Also, there is a new graduate school of science and technology that has expressed interested in developing a Sea Grant like outreach program.

Dr. Helmuth noted that in the past 5 years he's been building an international coalition with ten different countries. They are looking for models to train scientists in other countries and branching out into the Middle East.

Dr. Murray noted Sea Grant needs to be able to learn from other countries and think of ways to have our extension agents go across the globe on sabbatical to learn about their techniques for holding back the ocean. The NSGO office can't do this alone and a relationship with the Office of International Affairs is important.

Dr. Mace noted this conversation fits well into the visioning conversation. We can bring people from other nations to program offices and the NSGO to develop changes. Mr. Darren Lerner noted he is working with folks involved with Korea Sea Grant and possibly something involving Japan.

Dr. Helmuth noted China has mentioned they wanted to bring someone in the US for a year to learn more about NOAA. They would like to sit in Silver Spring in the NOAA Climate Office. Mr. Schmitt suggested introducing them to the Sea Grant model, as well as, extension. Dr. Garber noted the NSGO is open to details.

Mr. Schmitt concluded the conversation by saying the NSGAB supports the continued discussion of globalization for the Sea Grant programs through the visioning process and targeting opportunities and seeking advice. Discussions should be dedicated at Sea Grant Week. Dr. Orbach suggested discussions with OAR International and Dr. Murray suggested speaking to Mr. Ruperto Chaparro and Dr. Karl Havens about "Shovel Ready" work with Cuba.

NSGAB Member Updates

NOAA Cooperative Science Centers (P Chigbu, NSGAB)

Q&A/Comments: Dr. Garber noted last fall Dr. Chigbu hosted the NOAA Educational Partnership Program. Dr. Garber talked about careers, NMFS and Knauss Fellowships. The NSGO is working with the NOAA office of Education on tracking students that have now become Knauss and NMFS Sea Grant fellows. Dr. Chigbu noted they have students that went through their summer bridge program that went to the University of Miami and is now a Hollings Scholar.

501C3 Committee Update (M. Orbach, A. Mace, R. Vortmann, NSGAB; & J. Eigen, NSGO)

The purpose of this committee was to get more money into Sea Grant programs at the state levels and the national level. The committee members include Dr. Michael Orbach, Dr. Amber Mace, Mr. Richard Vortmann from the NSGAB; and Mr. Jonathan Eigen from the NSGO.

Almost all state Sea Grant programs have mechanisms or some sort of 501c3 where constituents can donate directly to the Sea Grant program or specific project. The committee looked at models within the National Estuarine Research Reserve Association, the National Marine Sanctuaries Foundation, and the National Fish and Wildlife Foundation (NFWF). All models are very place based, or with NFWF which is nationally congressionally mandated. None of these models seem to be Sea Grant appropriate. Dr. Mace made the point that it's easier to get people to give to a particular project or familiar location than it is to say we are going to raise money to run the administrative office in DC.

The committee came to the conclusion that since state based programs have their own model, and the model isn't clear for the NSGO that they lie low for now. It isn't clear who would be finding the funding or doing that particular function in the NSGO.

Dr. Garber noted in the Senate Reauthorization bill that died, it was suggested that the NSGAB should do a report on looking at foundation support and how to fund more Knauss Fellows on the Hill.

Dr. Orbach noted if it does come back up again, we need to think about whether or not the NSOB needs a general foundation or if it's better to create a national NOSB foundation. Dr. Mace noted you need to have a hook, something specific like the NOSB could be something to fund raise for, but it does not make sense to have its' own 501C3. The Knauss Fellowship would be another very good specific target.

Meeting adjourned.

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10-Year SG Aquaculture Vision (Feb 2016)



10-Year NOAA Sea Grant Aquaculture Vision

February 2016

Sea Grant's 10-Year Aquaculture Vision: Sea Grant will be instrumental in creating and applying new aquaculture products, tools, and services to foster the expansion of a sustainable US marine and Great Lakes aquaculture industry (Figure 1).

Introduction

For nearly 50 years, The National Oceanic and Atmospheric Administration's (NOAA) National Sea Grant College Program (NSGCP) has invested in the development of sustainable marine and Great Lakes aquaculture businesses. For example, a \$26 million investment in aquaculture research and technology transfer from 2012-2015 led to an economic impact of \$200 million including the creation or retention of 8,000 jobs.

Sea Grant will likely be investing \$50 to \$75 million in aquaculture research and technology transfer over the next ten years. A clear vision will help guide strategic investments to expand the aquaculture industry. In March 2015, the Sea Grant Association established a committee to develop a 10-year vision for aquaculture investments by NOAA's NSGCP. The purpose of this 10-year vision is to (1) determine Sea Grant's most appropriate roles over the next ten years, and (2) identify priority research and outreach strategies leading to sustainable economic development, environmental conservation, and social well-being.

The remainder of this document describes Sea Grant's 10-year aquaculture vision.

Background

The United States government has invested in developing the country's aquaculture industry for decades. Recently, the White House and Congress have placed additional emphasis on aquaculture development by outlining plans and implementing strategies to accelerate development and expand aquaculture production.

Over the 50 years of its existence, NOAA's NSGCP has made substantial investments in aquaculture research and outreach, which have led to the creation of new industry sectors for abalone, clams, oysters, shrimp, striped bass, sturgeon, yellow perch, assorted marine finfish, and other species. Sea Grant investments in research and sustained technology transfer continue to result in significant advancements in shellfish, finfish, and crustacean aquaculture in areas such as nutrition, genetics, animal health, reproduction, husbandry, economics, business management, and policy. Most Sea Grant investments have had significant impact at the small business level, where new and existing farmers and allied industries have taken advantage of Sea Grant information, tools and services.

Other federal and state programs involved in aquaculture

There are additional federal and state-supported entities and industry associations that invest in aquaculture. Examples include:

- NOAA's Office of Aquaculture
- Aquaculture Interagency Working Group
- US Department of Agriculture
 - Regional Aquaculture Centers
- National Association of State Aquaculture Coordinators
- Food and Drug Administration
- US Fish and Wildlife Service
- Industry Associations
 - World Aquaculture Society
 - US Aquaculture Association
 - National Shellfisheries Association
 - State Aquaculture Associations
 - US Aquaculture Supplier Associations

Priority Focus Areas

The national Sea Grant office and state Sea Grant Programs contributed to developing the Sea Grant Aquaculture Focus Areas. Twenty-two of the 33 state Sea Grant programs provided input in the development of a forward-looking aquaculture vision via an online survey. Sea Grant programs could identify three national-level and three state-level marine and Great Lakes aquaculture issues. Follow-up questions for each issue obtained input on how Sea Grant should respond to the issue, what resources are needed to respond, and an example statement describing a successful response.

Based on the survey results five priority focus areas emerged. The focus areas are 1) Commerce, 2) Permitting and Policies, 3) Current and Emerging Species, 4) Production Systems, and 5) Seafood Safety and Quality.

Focus Area: Commerce

Priority

Provide economic and marketing research and associated outreach program to increase the profitability and environmental sustainability of aquaculture businesses.

Background

US is imported creating an annual seafood trade deficit exceeding \$12 billion. The development of the US aquaculture industry will depend on its competitiveness in the global marketplace.

On the domestic front, interstate commerce is challenging because of the involvement of many state and federal agencies. Efficient trade activities across state lines will require a better understanding of regional and interstate commerce policies and legal issues and increased focus on coordination.

Cost competitiveness and the use of proven business models, especially for indoor recirculating aquaculture systems (RAS), are two of the main bottlenecks to aquaculture development in the US. While turnkey business models exist for outdoor systems such as salmon in net pens, channel catfish in ponds and rainbow trout in raceways, there are mixed results for indoor RAS for cobia, tilapia, hybrid striped bass, shrimp and other species. Business models should be developed to assess the profitability and sustainability of diverse species. Appropriate business planning would result in job creation, reduced reliance on imported seafood, reinvigorated coastal fishing communities, and diversified local seafood production.

What Sea Grant Should Be Doing

- Research international trade issues (e.g., effects of tariffs); the major drivers of seafood trade into the US; and economic impact of trade on the domestic seafood industry.
- Explore mechanisms to coordinate and liaise among states and synchronize efforts among industry, government, and the research and extension communities.
- Help develop niche markets.
- Support a comprehensive research and outreach effort targeting behavioral and consumer sciences; consumer perception and preferences; food safety; labeling and certifications; seafood demand studies; and promotion of local seafood
- Develop optimal business models for diverse species, which would include hatcheries and grow-out for freshwater, low salinity, and marine species and systems.
- Conduct economic analysis of utilizing public waters, which includes an assessment of ecological and socio-economic impacts.
- Invest in economic analysis, business planning and assessments related to capital investments, financing, insurance, and risk of aquaculture business.
- Guide development of product diversity.
- Support critical research to improve the efficiency of technology and input use in production.

Focus Area: Permitting and Policies

Priority

Provide technical assistance to researchers and the private sector regarding the legal framework and challenges of balancing multiple uses of the coastal zone and inland areas.

Background

The aquaculture permitting process varies by state, aquaculture system and purpose (research versus production). In addition, there can be multiple jurisdictions and permits from numerous agencies required for the same aquaculture venture. This situation forms a complex permitting landscape for agencies, research institutions, and businesses to navigate. Also, some agencies have a goal of ensuring that the seafood in the marketplace is safe, wholesome, and properly labeled. Some agencies also have a goal limit the spread of disease through commerce. However, activities regarding oversight of seafood commerce can be overlapping and confusing. Aquaculture is already at the interface of industry and government regulations with

some strong legal components. Interstate legal issues, in particular for shellfish and selected finfish, adversely affect aquaculture operations. It is important that there is a clear understanding of policies given the diverse nature of aquaculture species.

What Sea Grant Should Be Doing

- Provide technical assistance to researchers working with the aquaculture industry to scale-up technologies. Sea Grant Legal Programs can facilitate dialogue between government agencies, researchers, and the aquaculture industry to increase understanding of current laws and policies, the needs of the aquaculture industry, and options for legal and regulatory reform.
- Facilitate the development of model state laws and guidance to address typical legal and regulatory barriers to the aquaculture industry.
- Conduct extensive outreach programs targeted to aquaculture stakeholders to increase awareness of the legal responsibilities of state agencies as managers of public trust lands and waters, the challenges of balance multiple uses of coastal lands and waters, and the legal authority of local governments to regulate land uses in certain zones.
- Help develop common policies that will ensure uniform regional governance. Sea Grant can guide implementation of consistent interstate aquaculture rules supported by the industry and government.

Focus Area: Current and Emerging Species

Priorities

1. Increase domestic production of currently farmed and promising new species through research and extension supporting improvements in nutrition, reproduction, larval rearing, and genomics to enhance growth, improve health, and adapt to changing conditions like ocean acidification and climate change.
2. Respond to current needs of the industry with timely, relevant research on commonly cultured species, while evaluating potential opportunities with emerging species.
3. Improve hatchery production to produce reliable shellfish seed, macroalgal seedlings, and finfish fingerlings to accelerate industry growth.

Background

Doubling US Aquaculture would create 50,000 jobs and increase farm gate value by more than \$1 billion (Knapp 2008). Nash (2004) proposed a reasonable goal of increasing domestic US aquaculture production by 1 million tonnes per year worth more than \$2 billion by 2025. The lion's share of this production, 760,000 tonnes, will have to be finfish production of which 590,000 tonnes would be marine finfish. Additional production would be 47,000 metric tonnes from increased production of red swamp crayfish and penaeid shrimp. Finally, shellfish production would increase 245,000 tonnes through increases in production targeting American and Pacific oysters and Mediterranean mussels.

Finfish

Significant advances have been achieved in the husbandry and domestication of several promising new marine finfish species, and Sea Grant should continue supporting development of this industry sector. Promising new species such as red drum, *Sciaenops ocellata*, Florida pompano, *Trachinotus carolinus*; Atlantic and Pacific amber jack species, *Seriola dumerili*, *lalandi* and *rivoliiana*; red porgy, *Pagrus pagrus*; cobia, *Rachycentron canadum* and sablefish, *Anoplopoma fimbria* are all commercially grown with potential for significant increases in production. In addition, there is interest in farming marine ornamental species from business and conservation perspectives.

Crustaceans

There is growing interest and potential in production of marine penaeid shrimp in high density recirculating production systems close to high value domestic urban markets. Increases in production of red swamp crawfish in ponds could expand crustacean farming.

Molluscan shellfish

There is a common need for research into genetic improvements to improve yield (survival, growth), quality and safety of commonly cultured species such as oysters, hard shell clams, mussels. Work in this area should account for the potentially changing marine and estuarine environments.

While there are a number of potential emerging species, the following molluscan shellfish have shown promise as viable commercial candidates that warrant further research to improve production: Olympia oysters, *Ostrea conchaphila*; geoduck clams, *Panopea generosa*; sunray Venus clams, *Macrocallista nimbis*; butter clams, *Saxidomus gigantea*; soft shell clams, *Mya arenaria*; purple-hinge rock scallops, *Crassadoma gigantea*; and razor clams, *Siliqua patula*.

For emerging molluscan species, there are critical research needs to optimize production in all stages, from hatchery through nursery and grow-out. In addition, adoption and commercialization of new species will benefit from extension support.

Marine algae

The most valuable macroalgae are the kelps and a few of the reds. The kelps are the largest of the macroalgae, and all have food, feed, extract, bioremediation, habitat, and biomass market potential. There are many kelp species on the Atlantic and Pacific coasts. All have the same life cycles, and farming programs can use the same basic cultivation techniques. The other seaweeds with high cultivation potential, especially for food, feed and extract production, include the red dulse species (*Palmaria* spp.), nori or laver species (*Porphyra* spp.), and *Gracilaria* species. Research and development are needed in the nursery phase for seed production (to include development of reliable seed stock, breeding, efficiency, density optimization), farm technology (to include sufficient and affordable moorings, harvest technology, and biofouling mitigation), harvesting technology, processing technology, and product development. Another area that will need research is food safety and analysis for

seaweeds grown in different types of classified waters. All aspects of farming will need efficiency to reduce the costs of production.

What Sea Grant Should Be Doing

- Support the creation of collaborative, multidisciplinary research partnerships involving academia, NOAA and USDA scientists, and private industry to bring promising new species into commercial production.
- Develop, through sponsored research, programming to enhance alternative/emerging culture species.

Focus Area: Production Systems

Priority

Link industry needs to basic and applied research efforts, including establishing demonstration centers to develop and refine aquaculture systems and disseminate applied information to end users.

Background

The emerging US marine and Great Lakes aquaculture sector uses several production systems. However, there are limited applied research and demonstration efforts to optimize systems and disseminate applied results to the private sector. In most cases, production system technology was copied from systems used in other countries or have been developed domestically but not standardized. For example, the US has largely developed the recirculating aquaculture system technology. However, producers entering the industry typically do not have an available source of information to select the most appropriate system for their operation or information to assess the economics of systems. Sea Grant should take the lead in developing and providing validated information for both potential and established producers to enhance the sustainability and profitability of their production system.

Table 1 includes a list of current and emerging production systems used by the US aquaculture sector and brief descriptions of needed information to enhance those systems.

Finally, as the US marine aquaculture industry grows, there will be a need to adapt existing or develop new types of production systems for emerging species such as seaweeds (marine macrophytes) and marine invertebrates (including ornamentals). There is also a need to develop energy efficient production systems such as integrated multi-trophic aquaculture systems. The economic feasibility of commercial size operations must be demonstrated to encourage the growth of these sectors.

What Sea Grant Should Be Doing

- Establish a network of regional aquaculture demonstration centers where systems and culture practices can be refined, validated, and demonstrated to the private sector. These centers should be encouraged to foster commercially based collaborative

research and development where the private sector can test production technology on a small-scale to evaluate investment risks for commercial scale production.

- Fund applied research projects focused on optimizing culture systems and practices through state and national competitions. Ensure that outreach and technology transfer is a significant and well-funded aspect of each project.
- Develop, through sponsored research, programming to enhance integrated multi-trophic systems for marine aquaculture development. Ensure that outreach is a significant and well-funded aspect of each project.

DRAFT

Table 1. List of current and emerging production systems used by the US aquaculture sector and a brief description of needed information to enhance those systems.

Species	Type of Production	Needs
Finfish	Recirculating aquaculture systems (RAS)	Development of marine RAS technologies has proceeded greatly over the last two decades in the US. However, efficiencies of different systems need to be compared. There is no template in place to guide potential and established producers in the selection of the best system for their particular needs.
	Offshore systems	Similar to the development of RAS technologies, offshore aquaculture system technologies are in place but production output is largely unproven.
Finfish and Crustaceans (shrimp)	Ponds	Several marine finfish species have been produced in marine ponds for food production and stock enhancement. While freshwater pond production protocols have been established for many years, much less is known regarding the dynamics of marine ponds. As with marine finfish, management strategies for brackish and saltwater shrimp ponds have not been fully established.
Crustaceans (shrimp)	Super-intensive RAS based raceway culture systems	A significant amount of research has been devoted to this culture system, but to date there are no standardized production protocols for producers to follow.
Molluscan shellfish	Surface and submerged gear	A variety of nursery and grow-out technologies including longlines, rafts, and floating container systems are utilized in large-scale production systems. These technologies require optimization for profitability. Research should examine the use of alternative designs and materials.
	Automation	Cost-saving technologies for production, harvest and processing are needed.
Seaweeds	Economics of commercialization	A significant amount of research has focused on grow-out technology and practices, but little data exists on the economics of commercial scale production in the US.
All Species	Reproduction and hatchery systems	Common to all species produced, both reproduction and hatchery production are critical to the success of a commercial operation. Consistent supply of and economically viable production of high-health seed stock remains one of the greatest bottlenecks to industrial expansion.

Focus Area: Seafood Safety and Quality

Priority

Provide research funding, technical assistance, and outreach to aquaculture producers, resource managers, scientists, and consumers to ensure the safety and quality of sustainably cultured seafood products meet public demand.

Background

There are multiple human health and seafood safety issues facing US aquaculture. They include:

- Maintaining existing or developing new regulatory requirements to ensure a safe and sustainable seafood supply for export and import,
- Developing rapid, affordable and FDA-approved tests to detect human pathogens and toxins,
- Identifying and reducing impacts from existing and emerging contaminants and biotoxins,
- Enhancing product quality and consumer confidence, and
- Managing a sustainable resource.

What Sea Grant Should Be Doing

- Provide extensive consumer education programs on seafood quality and food security.
- Continue HACCP research, technical transfer, and outreach to ensure a safe and wholesome seafood supply.
- Conduct research and provide outreach and technical assistance regarding contaminate and biotoxin environmental monitoring and work to develop forecasting models and faster biotoxin analyses.
- Assess rising concerns about bacteria and viruses such as *Vibrio* species and norovirus in a changing environment.
- Strengthen consumer confidence and build markets by working with seafood handlers, such as meat cutters and fishmongers, to improve seafood quality and safety and provide information to consumers.
- Conduct research and provide technical assistance and outreach to develop value-added aquaculture products.
- Conduct research and provide technical assistance and outreach to improve the understanding of aquaculture interactions with wild stocks and the natural environment relative to diseases and other factors affecting product quality and sustainability.

Resources Needed to Achieve the Vision

A diverse set of resources is required to implement the vision. Table 2 outlines areas to invest resources for each focus area.

Table 2. Areas to invest Sea Grant resources by focus area and broad research, outreach and partnership categories.

Focus Area	Areas to Invest Resources		
	Research	Outreach	Partnership
Commerce	Detailed economic analysis of cost of production for various species and systems	Business and marketing workshops	Nurture partnerships with ongoing marketing programs with industry organizations and other marketing efforts
Permitting and Policy	Extensive background analysis of state laws and policies	Law and policy workshops and facilitate dialogue among permitting agencies.	
Current and Emerging Species	Hatchery and seed stock production technologies and production protocols for emerging species.	Applied demonstration workshops, and support outreach personnel to work directly with existing and new aquaculture producers.	
Production Systems	Production system and emerging species hatchery and seed stock production technologies/production protocol.	Applied demonstration workshops, and support outreach personnel to work directly with existing and new aquaculture producers.	National and State Sea Grant programs should integrate/leverage existing infrastructure capacity at partner institutions towards enhanced outreach and demonstration capacity.
Seafood Safety and Quality	Leverage research support from seafood safety agencies (FDA and USDA).	Leverage outreach support from seafood safety agencies (FDA and USDA).	Develop new and enhance existing partnerships with federal, state and tribal managers and industry leaders.

What Will Happen by Achieving the Vision

When this vision is realized, there will be a vibrant US coastal aquaculture industry able to augment traditional capture fishery communities through increased employment, revenues, and in concert with traditional capture fisheries to increase domestic seafood production and maximize the economic, employment and health benefits of increased supplies of sustainable seafood.

Successful implementation of this vision document will INCREASE:

- US jobs
- farmed seafood consumption
- consumer confidence in farmed seafood
- aquaculture production
- the value and quality of products
- and enhance national seafood safety and security
- and expand markets as a result of stronger and more uniform product standards and better monitoring
- understanding and application of aquaculture laws and policies among key stakeholder groups
- exports of high-quality seafood to growing international markets.

Successful implementation of this vision document will DECREASE:

- the national seafood deficit.
- the number of illnesses from aquaculture products.
- legal barriers to implement new techniques.

Conclusion

The following principles should be considered during the development of implementation strategies to achieve Sea Grant's aquaculture vision. Sea Grant should:

1. Continue to focus its efforts on the business community, where it has made and will continue to make its most significant collective impact.
2. Make investments in priorities that target critical issues and needs as identified throughout the coastal United States, but allow maximum flexibility to address regional, state, and local issues and needs relevant to the aquaculture industry.
3. Support projects and activities that are multi-dimensional in scope and focus, address issues and opportunities holistically, apply an integrated mix of research, education, extension, and/or communications approaches, and when applicable directly involve stakeholders and the industry.
4. Invest in geographically and topically diverse integrated aquaculture research and outreach efforts.

Committee Members

Paul Anderson, Maine Sea Grant
Jim Berkson, National Sea Grant Office
Sarah Bowman, National Sea Grant Office
Penny Dalton, Washington Sea Grant
Rick Devoe, South Carolina Sea Grant
Tessa Getchis, Connecticut Sea Grant
Robert Jones, NOAA Office of Aquaculture
Teri King, Washington Sea Grant
Andy Lazur, Maryland Sea Grant
Mike Liffman, National Sea Grant Office
(retired)
Fredrika Moser, Maryland Sea Grant

Paul Olin, California Sea Grant
Stephanie Otts, National Sea Grant Law
Center
Kwamena Quagraine, Illinois-Indiana Sea
Grant
Michael Schwarz, Virginia Tech University
Stephen Sempier, Mississippi-Alabama Sea
Grant Consortium
Bill Walton, Auburn University
Chuck Weirich, North Carolina Sea Grant
LaDon Swann, Mississippi Alabama Sea
Grant Consortium (Chair)

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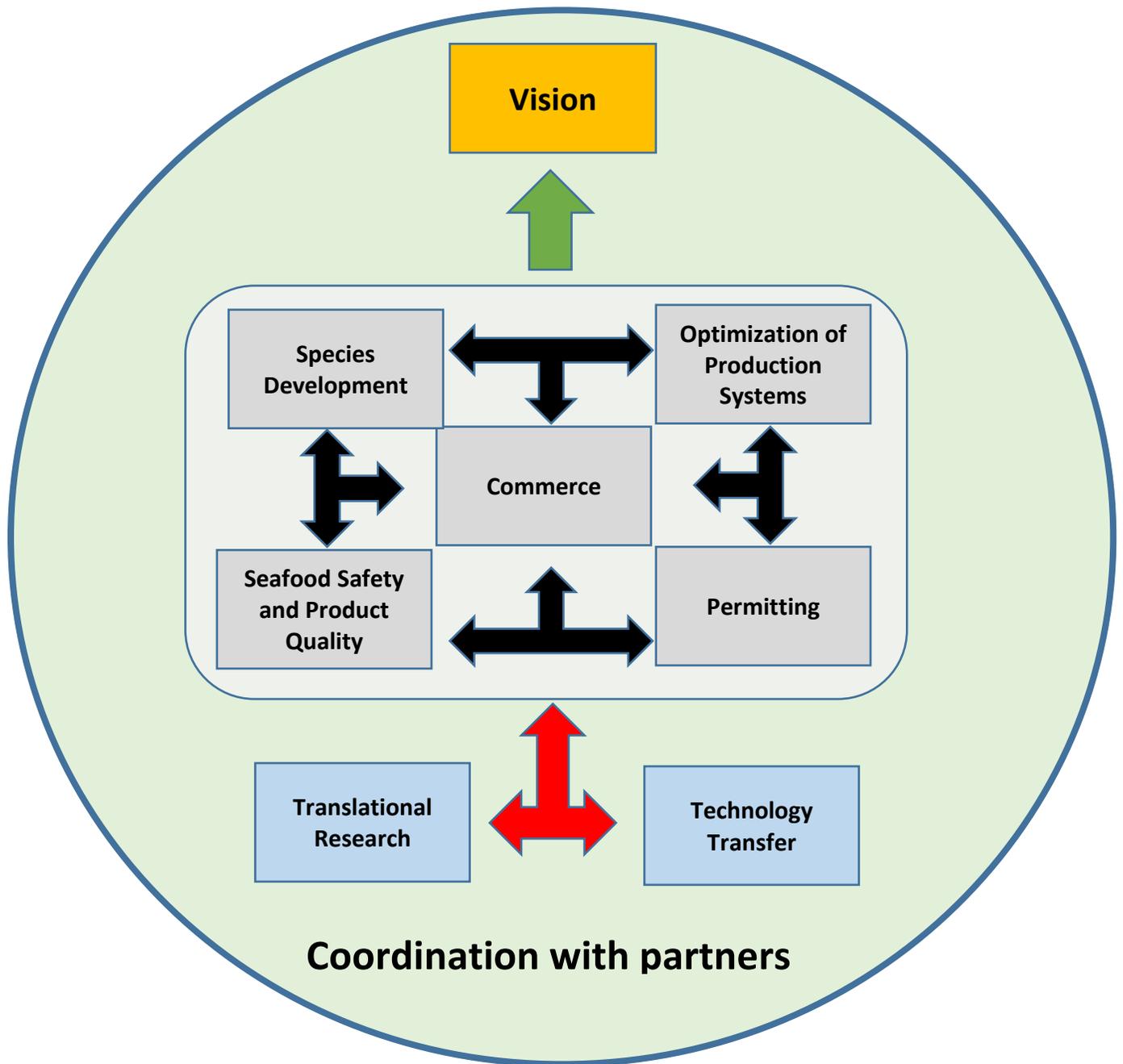


Figure 1. Conceptual model of Sea Grant's Aquaculture Vision

Strategic Planning & Focus Area Overview

-Timeline & Agenda



2018-2021 National Sea Grant Network Plan - Terms of reference, schedule and milestones

January-February 2016 – Appoint a National Network Plan Steering Committee (membership will be appointed by the acting National Sea Grant College Program Director, in consultation with the Advisory Board and the Sea Grant Association).

Terms of reference: The Strategic Planning committee is comprised of representatives from NSGO, SGA, NSGAB, and Network Advisory Committee. The steering committee is charged with providing guidance to the national office with respect to the development of the 2018-2021 National Sea Grant Network Strategic Plan which includes defining the scope and objectives of the planning process, reviewing relevant source material, providing progress updates and presenting the draft strategic plan to the NSGO Director. NSGO will provide guidance and support through the development process.

- Steering Committee Membership will include:
 - National Sea Grant Office: Margaret (Peg) Brady, chair
 - Sea Grant Association: Sylvain Deguise, co-chair
 - National Sea Grant Advisory Board member: Dick Vortmann
 - Network Advisory Council member: Nancy Balcom
 - Sea Grant Association: Paula Cullenberg
 - Sea Grant Association: Jim Hurley
 - Sea Grant Association: Susan White
 - National Sea Grant Office Coordination and Support – Sharon Aziz
- An Advisory Group will provide programmatic and strategic recommendations to the Steering Committee throughout the development of the strategic plan .

Steering committee will review and synthesize relevant resource material which will include, but not be limited to, the following:

- 2014-2017 National Sea Grant Plan
- Sea Grant Legislation
- DOC Strategic Plan
- NOAA Next Generation Strategic plan
- OAR's strategic plan
- NOS/NMFS plans
- Climate Action Plan
- National Ocean Policy Implementation Plan
- 10 year Aquaculture Vision
- 2016 Planning, Implementation and Evaluation Assessment (TBA)
- SGA Survey results wrt strategic planning recommendations
- NOAA Research Council

February – March 2016 - SWOT analysis conducted by 5 Knauss fellows for each focus area and results presented to steering committee.

- Healthy Coastal Ecosystems
- Sustainable Fisheries and Aquaculture
- Resilient Communities & Economies

- Environmental Literacy & Workforce Development

March 2016 – NSGAB/SGA meeting – Presentations: Planning process overview, timeline, & initial SWOT results. Discussions will focus on recommendations and midcourse corrections/next steps.

April – June 2016 – National and state stakeholder forums (priority areas raised at state program stakeholder meetings will inform priority areas for the national program). Data from Programs gathered via survey device.

May 2016 –

- NSG Leadership retreat to conduct a SWOT analysis of the entire network.
- A roundtable forum to be held with NOAA leadership to gain an understanding of NOAA priorities and how NSG Network could respond.

July 2016 –Draft National Plan written based on input received by the Steering Committee and the national and state stakeholder forums. Focus areas identified.

Draft National Network Plan will include the following elements:

- Vision
- Mission
- Core Values
- Cross cutting principals – Partnerships, Organization excellence
- Focus Areas and Goals
- Outcomes
- Performance Measures
- Long term planning process

August 2016 – Distribute Draft National Network Plan to the internal & external network. Socialize the plan @ key meetings within NOAA & externally. Seek for written comments.

Sept 2016 – Finalize Draft National Network Plan (except four-year performance measure targets)

September - October 2016 – State Sea Grant Program plans are finalized and submitted to the NSGO for approval.

November 2016 – Review of State Sea Grant Program plans

December 2016/January 2017

- National Network Plan finalized based on input from state Sea Grant program plans (plan now includes targets)
- All state Sea Grant program plans are approved
- National Network Plan adopted

Annotated Agenda – 2018-2021 National Sea Grant Network Strategic Plan

National Sea Grant Advisory Board Meeting – 7 & 8 March 2016 Washington, D.C.

1. Agenda item Title of Discussion: 2018-2021 National Sea Grant Network Strategic plan

2. Discussion Leader/Presenter: Peg Brady & Sylvain Deguise

3. Objective/Purpose: An overview of the National Sea Grant Network (NSGN) Strategic planning process will be presented. A discussion will follow to explore whether any course corrections &/or amendments may be needed to the process.

4. Background/Synopsis: Steps are underway to develop the 2018-2021 National Sea Grant Network (NSGN) Strategic Plan. A planning committee comprised of representatives from NSGO, SGA, NSGAB, and Network Advisory Committee have developed a draft terms of reference and timeline. (see attached). The steering committee is charged with providing guidance to the national office with respect to the development of the 2018-2021 Strategic Plan and presenting the draft strategic plan to the NSGO Director. NSGO will provide guidance and support throughout the development process.

In preparation for our March meeting, the NSGAB is asked to review the draft “Terms of reference, schedule and milestones” and provide their comments at the meeting. Questions to consider for the discussion include:

- Do the proposed terms of reference capture the scope of planning work as you understand it?
- Do we need to consider course corrections in the planning process & timeline?
- Do any areas of the proposed process needed to be altered to address emerging challenges?

5. Action requested: NSGAB review and approve the draft 2018-2021 National Sea Grant Network Plan - Terms of reference, schedule and milestones with amendments as needed.

Attached:

- 2018-2021 National Sea Grant Network Plan - Terms of reference, schedule and milestones

Annotated Agenda –National Sea Grant Focus Areas Update - SWOT

National Sea Grant Advisory Board Meeting – 7 & 8 March 2016 Washington, D.C.

1. Agenda item Title of Discussion: National Sea Grant Focus Areas Update – Strengths, Weaknesses, Opportunities & Threats (SWOT) analyses

2. Discussion Leader/Presenter: Laura Early, Karen Pianka, Erin Shew, Kyrstin Fornace, & Matt Lurie - 2016 Knauss fellows

3. Objective/Purpose: Presentation of the Strengths, Weaknesses, Opportunities & Threats (SWOT) analyses of the four focus areas followed by a Q & A.

4. Background/Synopsis: A Strengths, Weaknesses, Opportunities & Threats (SWOT) analyses were conducted with respect to the four Sea Grant focus areas:

- Healthy Coastal Ecosystems
- Sustainable Fisheries and Aquaculture
- Resilient Communities & Economies
- Environmental Literacy & Workforce Development

In preparation for the 2018-2021 strategic planning process SWOT analyses were conducted by five 2016 Knauss fellows. SWOT is a structured planning tool that enables planners to evaluate these four elements in context of a project or programs. The results of their analyses will enable Sea Grant explore and identify potential strategies and opportunities for the future. The PIER database, Performance Review Panel (PRP) reports and interviews with subject matter experts (SME) within the NSGO were used by the Knauss fellows to complete their analyses.

5. Action requested: NA

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Program Implementation & Evaluation (PIE)

-2013 PIE Assessment Report

-2015 PIE Charge



**National Sea Grant Advisory Board Assessment of Sea Grant's
Planning, Implementation and Evaluation Process Report
September 2013**

I. Introduction

Charge to the National Sea Grant Advisory Board

The National Sea Grant College Program (NSGCP) Director charged the National Sea Grant Advisory Board (NSGAB) to assess the lessons-learned from the 2010-13 Planning, Implementation and Evaluation (PIE) cycle. Capitalizing on the completion of this first cycle of the PIE process, the NSGAB should base recommended revisions for the 2014-17 cycle by reviewing what worked well and what did not from the 2010-13 cycle.

The NSGAB developed a subcommittee (PIE Assessment Committee) with membership from the Advisory Board, Sea Grant Directors and the National Sea Grant Office (NSGO).

This committee reviewed all PIE guidance and informational documents, which included feedback from the Performance Review Panels and Site Visit panelists, the Sea Grant Network, and a Sea Grant Association survey on the entire PIE process. When reviewing materials and making any recommendations, the committee ensured that the PIE process met standing legislative requirements:

- National Network should have a strategic plan (Legislation – 1123D2a)
- All programs must have a four year plan that establishes priorities for the National Sea Grant College Program (Legislation – 1123C1)
- All programs must implement their plans (Legislation – 1126D1)
- All programs must be evaluated (Legislation – 1123D3a)
- Every two years – the NSGAB is to report to Congress on the progress made toward meeting the priorities identified in the National Network plan (Legislation – 1128B2)

Overarching Findings

After several weeks of document reviews and conference calls, followed by an in-person meeting, the committee agreed with the following as overall guidance for their PIE assessment:

The Planning, Implementation, and Evaluation (PIE) process has a good structure and meets the recommendations from the 2006 National Research Council Report, *Evaluation of the Sea Grant Program Review Process*. The first cycle was largely successful; however, it was too big and costly. The committee also found that all the components of the evaluation process were not well integrated into an overall assessment of the individual Sea Grant programs (programs) or the Sea Grant network.

II. Findings and Recommendations

Below are recommendations to improve the efficiency of the current PIE process without compromising the ability to evaluate programs and the overall Sea Grant network.

PLANNING

Findings

The National Sea Grant College Program (NSGCP) has a rigorous and thorough planning process at both the National and program level. Currently, planning at the National and program level happens simultaneously, with programs needing to ensure their plans align with the National Network plan. This simultaneous timing of the plans can be confusing and require significant additional work to ensure this alignment.

In the current planning process, programs are required to request permission from the National Sea Grant Office (NSGO) to make changes to their strategic plans. This requires time and effort from both the program and the NSGO for minor changes (i.e., changes in personnel and funding), and is inefficient.

Recommendation P-1: The NSGCP should continue initiating a broad National Network Strategic plan based on National Ocean Policy and NOAA top-down mission requirements. Once this national plan is complete, the programs will then develop their own plans based on this broad national strategic plan. The individual program will receive approval of their strategic plan from the NSGO.

Recommendation P-2: Minor changes in program plans do not need to be approved by the NSGO. Adjusting performance measure targets should be *strongly* discouraged. Programs should contact the NSGO for proposed changes to their individual plans to address only *significant* emerging or unexpected issues (e.g., Hurricane Sandy, Gulf Oil Spill, or irradiation of a new aquatic invasive species).

IMPLEMENTATION

Findings

Implementation happens at different levels within the National Sea Grant Program. At the National level, activities are organized into focus areas. Focus areas are managed by focus teams.

The original expectations of these Focus Teams were to:

1. Facilitate planning, implementation, synthesis and reporting of Sea Grant activities and accomplishments;
2. Identify new opportunities and directions for Sea Grant national and regional initiatives;
3. Catalyze cooperative efforts among Sea Grant programs, the NSGO, NOAA, other agencies and stakeholder organizations, and NGO's; and
4. Provide a mechanism to further solidify Sea Grant's local, regional, and national identity.

These tasks are important and should be continued. Currently, for various reasons (including budget constraints) these tasks are not being fully met. The focus teams are large (64 members) and

geographically dispersed. Focus Team contributions to the Sea Grant mission have been limited with most of the participation done by the Sea Grant Fellows and Focus Team Chairs and Vice-Chairs. Our committee recognizes that these Sea Grant mission tasks should reside within the NSGO, but the NSGO currently lacks the capacity to address all four expectations.

Recommendation I-1: The NSGCP Director should find more efficient ways to accomplish each of the four tasks currently given to the large focus teams. Examples of Teams that could perform these tasks could include:

- An external panel,
- Smaller, more narrowly directed Focus Teams,
- A NSGAB subcommittee, or
- NSGO staff (redirected from other efforts).

EVALUATION

Findings

The current evaluation process of the individual Sea Grant programs includes annual reports from the programs, an annual NSGO review, a program site visit, and performance review panels. During the annual review, the NSGO reviews the programs' annual reports, site visit reports, and performance review panel findings and any programs' responses. The site visits review the performance of the programs in three areas: 1) program management and organization, 2) stakeholder engagement, and 3) collaborative network/NOAA activities. The performance review panels evaluate the results (impacts, accomplishments and success of reaching performance measures) of the programs. The site visits and performance review panels are conducted once during the four-year evaluation cycle. These evaluation processes are compartmentalized and not fully integrated into the overall evaluation of the program.

Recommendation E-1: Integrate annual reviews, site visits, and an external evaluation panel into an overall four-year evaluation process.

Annual Reports

Findings

The committee finds the annual report a necessary part of the PIE process, and an important part of the program evaluation. On an annual basis, programs submit a report to the NSGO. These annual reports include impacts and accomplishments, and progress towards performance measures and metrics. All annual report information is currently submitted by the programs into a database known as PIER (Planning, Implementation and Evaluation Resource). Thus, the PIER outputs assume a much higher priority than simply tracking database input. Annual Reports can track progress; however, they should not be the only source of data for the overall program evaluation process.

The annual report serves as an 'annual review of programs' and also serves as a performance progress report for the purpose of grant renewal.

Recommendation E-2: Continue on-going, joint, NSGO/SGA efforts to improve NSGO annual reporting guidance, particularly the definitions of performance measures and metrics.

Recommendation E-3: The format of the PIER outputs should be improved to enhance usability across the various reporting and performance evaluation needs across the network.

Annual Review Process

Findings

The annual review conducted by the NSGO is an important process to assess each program on an annual basis. This is an opportunity for the programs to work closely with the NSGO program officer to demonstrate annual results through their annual report. The NSGO also includes the site visit report, the performance review panels' findings and ratings, and program responses in the year the annual review is conducted. However, the results of these NSGO reviews are not included in the four-year evaluation process that affects merit funding. There are portions of the NSGO annual review process that are closed to the programs.

Recommendation E-4: We encourage constructive feedback between the NSGO program officer and the Sea Grant program to assure continued improvement and cooperation. The committee feels this is an important step to improve the annual review process which should be included as input to the four-year evaluation. The role of the program officer should be that of a liaison (honest-broker), communicating with programs.

Recommendation E-5: The results of the annual reviews should be included in the program's four-year evaluation process.

Recommendation E-6: The program Director should be invited to all segments of the NSGO annual reviews for their program.

Site Visits

Findings

The site visit proved to be a valuable part of Sea Grant program assessment. The site visit team meets with the program management team, advisory committees, and university administration to review and discuss broad issues related to 1) program management and organization, 2) stakeholder engagement; and 3) partnerships with the Sea Grant Network and NOAA. There is network consensus on the success of the site visits; however, the site visit reports have not been adequately integrated into the overall four-year evaluation process.

Recommendation E-7: The site visit report should be included as an influential input to the program's four-year evaluation.

Recommendation E-8: With inclusion of the site visit reports in the four-year evaluation process, there should be new training and guidance developed, for the NSGAB, the NSGO and individual programs, on how the site visit will be used in the evaluation process.

Performance Review Panel

Findings

The current performance review panels (PRPs) assess the impacts of the program by focus area. The simultaneous performance review of all programs by the same panelists allow for consistent rating within panels. However, due to the amount of material provided by the programs, the review was very labor intensive. The impacts were not prioritized by the programs, which made it difficult for the reviewers to evaluate their relative importance in their program goals. Separating program results into focus areas assessed by separate PRPs was perceived as inhibiting a consistent scoring across the four focus areas. An analysis of the performance review scoring however showed no significant difference between panels.

The impacts across focus areas for the individual programs and the network were lost by separating the program results by focus areas.

Recommendation E-9: The committee recommends the PRP be replaced with the external evaluation panel.

Recommendation E-10: The committee supports the concept of all programs being evaluated simultaneously every four years by a 'National Sea Grant External Evaluation Panel' to evaluate each individual program in the following categories:

Program Director's Impact Report	50%
Site Review Team (SRT) Report	35%
Annual Review Summary	15%

- The external evaluation panel should be comprised of members from the NSGAB, NOAA, other State/Federal Agency Officials, and leaders from academia/industry.
- The NSGCP Director, in consultation with the NSGAB and Sea Grant Directors, shall develop guidance for producing the three documents as well as evaluation/rating criteria to be used by the external evaluation panel.
- Limitations should be set on the volume of material presented to the National Sea Grant External Evaluation Panel:
 - Program Director's Impact Report should not exceed 15 pages.
 - Directors should explain how their program accomplished their individual Sea Grant program plans.
 - The SRT Report should not exceed 10 pages.
 - The NSGO program officer Annual Review Summary:
 - A brief presentation, and
 - Annual review summary memorandums (should not exceed 6 pages).

Recommendation E-11: The External Evaluation Panel will give each program a rating, which should be used by the NSGCP Director to determine merit funds.

Timing of the External Evaluation Panel

Finding: The committee recognizes there are two guiding principles in a conceptual review framework:

1. A Sea Grant program should be evaluated based on its success over a full four-year strategic planning window.
2. A Sea Grant director needs to be informed about his/her projected funding level prior to planning for the next four-year Omnibus program.

Due to time restraints, it is impossible for a full review of a four-year Omnibus (strategic plan cycle) to occur immediately following a cycle and a determination of base/merit funding by the NSGCP Director prior to beginning of the next four-year cycle. It is more important for a program Director to know future funding levels for research, outreach and education work plan development, than to have an exclusive review of only a specific strategic plan window.

Recommendation E-12: The committee feels that a mid-cycle review (year three) is the best option to allow proper time for the previous cycle's research accomplishments to become impacts and External Evaluation Panel results to be synthesized by the start of the next cycle. Site visits should occur in years one and two.

III. General Recommendation

The NSGAB PIE Assessment committee recommends, with implementation of any or all of the NSGAB recommendations contained in this report, the NSGCP Director coordinate evaluation guidance with the Sea Grant Directors and the National Sea Grant Advisory Board.

NSGAB PIE Assessment Committee

NSGAB

Dick West - Chair
Dale Baker
Amber Mace
Bill Stubblefield

NSGO

Sami Grimes - co-Chair
Chris Hayes

SGA

Sylvain DeGuise, CT Program Director
Jim Hurley, WI Program Director



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL SEA GRANT COLLEGE PROGRAM
1315 East-West Highway, Silver Spring, MD 20910

December 17, 2015

Mr. Rolland Schmitten
Chair, National Sea Grant Advisory Board
1315 East West Highway
Silver Spring, MD 20910

Dear Mr. Schmitten,

In response to the National Sea Grant Advisory Board's (NSGAB) motion at the November 2015 meeting, and with support from the Sea Grant Association (SGA), I support a second formal review of the Planning, Implementation, and Evaluation (PIE) Process. Considering the first full PIE cycle ended in 2015, a review of the entire process is timely. I propose the PIE II Committee include representation from the NSGAB, SGA, and the National Sea Grant Office. I look forward to the recommendations, as we work to support Sea Grant's dedication to strengthening programs through evaluation.

Charge: The NSGAB should assess the efficacy and implications of the PIE system - review what worked, identify weaknesses, and recommend revisions to improve and streamline the process where possible.

Timeline: The report should be available for discussion at the March 2016 NSGAB Meeting.

Sincerely,

Nikola M. Garber, Ph.D.
Acting Director
National Sea Grant College Program

cc: J. Eigen
D. Baker
R. West
S. Deguise

Public Comment



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NOAA SG Liaison Review
-2015 NOAA SG Liaison Review Charge
-Report





UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL SEA GRANT COLLEGE PROGRAM
1315 East-West Highway, Silver Spring, MD 20910

June 22, 2015

Mr. Rolland Schmitten
Chair, National Sea Grant Advisory Board
1315 East West Highway
Silver Spring, MD 20910

Dear Mr. Schmitten,

Since 1965, the National Oceanic and Atmospheric Administration (NOAA) National Sea Grant College Program (Sea Grant) has demonstrated its effectiveness in extending science-based ocean and coastal research to its coastal stakeholders. Hundreds of thousands of coastal constituents have benefited from an outreach infrastructure that consists of Sea Grant Extension (SGE) agents and specialists, communications professionals, and educators. Much of the information they've shared has been obtained from Sea Grant funded applied research activities that are highly valued by resource managers, public officials, the private sector, and the public at-large.

In 2001, it was determined that closer communication and cooperation with other Oceanic and Atmospheric Research (OAR) elements would be highly desirable and add value to Sea Grant's outreach services. Thus, the first Sea Grant-OAR extension liaison position was established at the Great Lakes Environmental Research Laboratory (GLERL) in Ann Arbor, MI. In 2005, a similar arrangement was made with the National Severe Storms Laboratory (NSSL) in Norman, OK followed by agreements with the Atlantic Oceanographic Meteorological Laboratory (AOML) in Miami, FL and Pacific Marine Environmental Laboratory in Seattle, WA.

The benefits are that Sea Grant would gain wider access to OAR's expertise and products; Sea Grant's constituents would be better served with additional scientific and technological information; the extension liaison specialists would obtain different insight into the needs of constituents; and NOAA would be responding to the challenge made in the National Sea Grant Advisory Board's 2000 report, "A Mandate to Engage Coastal Users: to better respond to

constituent needs and important issues.” Since the original arrangement with OAR Labs, Sea Grant Extension liaison positions have been opportunistically created with OAR’s Climate Program Office (CPO), National Marine Fisheries Service (NMFS) and the National Ocean Service (NOS).

I am asking the National Sea Grant Advisory Board to review the progress of, and suggest improvements for Sea Grant Extension-NOAA Liaison positions by exploring the successes of various models/arrangements, highlighting best practices, and recommending opportunities for improvement, and perhaps, expansion or contraction.

With best regards,

Nikola M. Garber, Ph.D.
Acting Director
National Sea Grant College Program

Attachment:

cc: J. Eigen
M. Liffmann

**Findings of NOAA Sea Grant Liaison Program Review
Presented to the National Sea Grant Advisory Board
March 8, 2016**

I. Background and Rationale

Since 1966, the National Oceanic and Atmospheric Administration (NOAA) National Sea Grant College Program (Sea Grant) has demonstrated its effectiveness in extending science-based ocean and coastal research to coastal stakeholders. Sea Grant is a program administered by NOAA's Office of Oceanic and Atmospheric Research (OAR) and in the past 50 years, thousands of constituents have benefited from an outreach infrastructure that consists of Sea Grant Extension (SGE) agents and specialists, communications professionals, and educators in 33 coastal states and territories. Some 400 university-based SGE agents and specialists serve as educators who apply science-based knowledge to solving many of the urgent problems confronting coastal, marine, and Great Lakes audiences.

By the late 1990s, it was determined that SGE and many of its stakeholders would benefit from closer collaboration between Sea Grant and OAR's research laboratories. By doing so 1) Sea Grant would gain wider access to OAR's expertise and products; and 2) Sea Grant's constituents would be better served with additional scientific and technological information. At around this time, the National Sea Grant Advisory Board was tasked with evaluating the Sea Grant Extension Program (SGEP) including its role within NOAA. The Advisory Board enlisted former NOAA Administrator, John Byrne, to chair a committee of experts in developing findings and recommendations to guide the SGEP in the future. The resulting seminal report, "A Mandate to Engage Coastal Users: A Review of the National Sea Grant College Extension Program and a Call for Greater National Commitment to Engagement," considered the placement of Sea Grant within NOAA and the need for NOAA to improve its contact with its user community. The Panel recommended improving the role of Sea Grant within NOAA, improving NOAA's organization with respect to its engagement with the public, and improving the National Sea Grant Office (NSGO), SGEP, and their university partners.

The "Mandate to Engage Coastal Users" report provided the impetus for Sea Grant to work with its NOAA partners to develop extension liaison relationships. The early positions with OAR labs (GLERL, AOML, NSSL) originated from discussions at NOAA headquarters by both the NSGO and OAR leadership in part as a reaction to the report. At first and in general, the reaction from the Sea Grant network to establishing liaison positions ranged widely, from wariness about becoming too closely aligned with NOAA and thus losing its education neutrality to recognition that the SGEP provided Sea Grant an idea vehicle to enhance its utility to NOAA. Over time the Sea Grant network and the NOAA programs involved have been convinced of the value of the partnerships and by 2016, the NSGO now provides partial funding for 12 NOAA-Sea Grant Extension Liaison (Liaison) positions.

The first Liaison was established in 2001 at the Great Lakes Environmental Research Laboratory (GLERL) following a March 1999 meeting between Great Lakes Sea Grant Network's outreach/ extension staff and GLERL leaders. It was agreed that such a position would facilitate the transfer of information between extension agents and specialists in the Great Lakes Sea Grant Network and the scientists and managers at GLERL. The position is funded by the three project partners: GLERL, the National Sea Grant Office (NSGO) that administers Sea Grant, and Michigan Sea Grant.

Shortly after the GLERL position was established, scientists from the Atlantic Oceanic and Marine Laboratory (AOML) noted the need for a coordinated outreach and education effort to address the long-term management and restoration goals for South Florida ecosystems. An outreach specialist was hired in 2002 to conduct a South Florida Ecosystem Education Project and the NSGO, AOML and Florida Sea Grant agreed to cost-share the position.

A third Liaison position was created in 2005 at the National Severe Storms Laboratory (NSSL) after several years of conversations between OAR administrators, NSSL managers, and NSGO. It was deemed desirable to increase collaboration between the Lab and the SGE network by helping build a weather/climate/coastal management infrastructure for both Sea Grant and OAR that would allow all involved parties to make mutual use of available expertise. A Weather and Climate Extension Specialist (WCES) position at the University of Oklahoma's (OU) Cooperative Institute for Mesoscale and Meteorological Systems the (CIMMS/NSSL) is funded by the NSGO with match provided by OU's Office of the Vice President for Research and CIMMS.

In 2012, two half-time positions were established by the NSGO, Washington Sea Grant (WASG) and Pacific Marine Environmental Laboratory (PMEL) to primarily address tsunami hazards and ocean acidification issues. The tsunami hazards position is currently vacant. There was also a mutual interest on the part of the NSGO, WASG and the Northwest Fisheries Science Center (NWFSC) that led to the establishment of a jointly funded position that focuses on fisheries and related social science issues.

NOAA's Sentinel Site program began in 2011 and is made up of five initial Cooperatives located in the Chesapeake Bay, Hawaii, North Carolina, Northern Gulf of Mexico, and San Francisco Bay. These locations were selected based on the potential for measuring ecological impact of sea level change; socioeconomic factors, such as large population centers; the potential to expand the use of existing NOAA tools, services, and other assets in a given region; and the potential to apply science-based solutions to solve specific regional coastal problems. The Sentinel Site Cooperatives Sea Grant Liaison position was initiated in 2014 and five outreach coordinators were recruited. Two-year funding for this effort involves National Ocean Service (NOS)/Office for Coastal Management, the NSGO and the five Sea Grant programs in Maryland, North Carolina, Mississippi-Alabama, California and Hawaii. The outreach coordinators facilitate the transfer of information related to the impacts of climate change, sea level change, and coastal inundation to stakeholders in nearby coastal communities.

The newest Liaison position is in Alaska where, starting in 2015, OAR's Climate Program Office (CPO), Alaska Ocean Observing System (AOOS), the National Sea Grant Office, and Alaska Sea Grant are cost-sharing a coastal community resilience position.

Thus, by leveraging resources, Sea Grant programs and NOAA partners are providing a viable solution to the transfer of scientific information, tools and technologies to coastal stakeholders.

In 2015, Dr. Nikola Garber, Sea Grant's Acting Director, requested that the National Sea Grant Advisory Board (NSGAB) review the progress of the Liaisons' efforts to date and suggest practical improvements to the existing management practices, if any. Mr. Rollie Schmiten, the NSGAB's Chair at the time, was asked to appoint a small committee to explore successes and shortcomings of various models/arrangements, highlight best practices, and recommend opportunities for improvement, and perhaps, expansion or contraction of these positions.

Mr. Dale Baker, the NSGAB's Vice-Chair and former New York Sea Grant Extension Program Leader, heads the committee which also includes Mr. Schmiten, Dr. Jim Murray, and Dr. Amber Mace. The National Sea Grant Office's Ms. Helen Cheng (National Sea Grant Knauss fellow 2015), Ms. Laura Early (National Sea Grant Knauss fellow 2016), Mr. Michael Liffmann (Former Program Director for Extension), and Ms. Elizabeth Rohring (Director of Integrated Communication) staff the Committee.

II. NOAA-Sea Grant Extension Liaison Positions

Much of the background and related information used to produce this report was obtained from documents in NSGO's files, and supplemented through personal conversations with NSGO staff. Telephone conversations were held with the incumbent liaisons, several of the Sentinel Site outreach coordinators, as well as immediate and other Sea Grant and Lab supervisors. They provided updates and additional details concerning their roles, interactions with SGE, accomplishments to date, expectations, and suggestions for improvements. See Table 1 for a complete listing of Sea Grant/Partner contacts. As of late 2015, the following individuals serve in these positions:

1) Dr. Rochelle Sturtevant is located at the Great Lakes Environmental Research Laboratory (GLERL), Ann Arbor, Michigan. She has been in the position since it was established in 2001. Her immediate supervisors are Ms. Margaret Lansing (GLERL's Information Service Branch Chief) and Dr. Heather Triezenberg (Michigan Sea Grant's Extension Program Leader).

2) Dr. Pamela Fletcher, Atlantic Oceanographic and Meteorological Laboratory (AOML), Miami, Florida. 2002. Immediate supervisors are Dr. James Hendee

(Supervisory Oceanographer and Director, Ocean Chemistry and Ecosystems Division) and Dr. Martin Main (Florida Sea Grant Extension Leader).

3) Dr. Kodi Monroe, National Severe Storms Laboratory (NSSL), Norman, Oklahoma. 2005. Immediate supervisor is Mr. Alan Gerard (WRD Deputy Division Chief, NSSL).

4) Dr. Meg Chadsey, (Ocean Acidification Specialist) Pacific Marine Environmental Laboratory (PMEL), Seattle, Washington. 2012. Immediate supervisors are Dr. Richard Feely (Senior Scientist) and Ms. Penny Dalton (Director, Washington Sea Grant)

5) (Vacant), (Coastal Hazards/ Tsunami Specialist) Pacific Marine Environmental Laboratory (PMEL), Seattle, Washington. 2012. Immediate supervisors are Dr. Jeremy Mathis (Division lead of Ocean Environment Research Division) and Ms. Penny Dalton (Director, Washington Sea Grant)

6) Dr. Melissa Poe, NMFS Northwest Fisheries Science Center, (NWFSC) Seattle, Washington, 2013. Immediate supervisors are Dr. Philip Levin (Acting Director of Conservation Biology and Program Manager in Ecosystem Science) and Ms. Penny Dalton (Director, Washington Sea Grant).

7) Dr. Davin Holen, Alaska Center for Climate Assessment and Policy; Anchorage, Alaska, 2016. Immediate supervisory committees are Alaska Regional Integrated Sciences and Assessments (RISA) as part of the OAR Climate Program Office (CPO), Alaska Ocean Observing System (AOOS), the National Sea Grant Office, and Ms. Paula Cullenberg (Director, Alaska Sea Grant).

8) Ms. Sarah Wilkins, Chesapeake Bay NOAA Sentinel Site. 2014. Immediate supervisors are Dr. Jim Sullivan (Chair of the NOAA Sentinel Site Program) and Dr. Fredrika Moser (Director, Maryland Sea Grant).

9) Ms. Maya Walton, Hawaiian Islands NOAA Sentinel Site. 2014. Immediate supervisors are Dr. Jim Sullivan (Chair of the NOAA Sentinel Site Program) and Dr. Darren Lerner (Director, Hawaii Sea Grant)

10) Ms. Jennifer Dorton, North Carolina NOAA Sentinel Site. 2014. Immediate supervisors are Dr. Jim Sullivan (Chair of the NOAA Sentinel Site Program) and Dr. Susan White (Director, North Carolina Sea Grant)

11) Ms. Renee Collini, Northern Gulf of Mexico NOAA Sentinel Site. 2014. Immediate supervisors are Dr. Jim Sullivan (Chair of the NOAA Sentinel Site Program) and Dr. LaDon Swann (Mississippi-Alabama Sea Grant).

12) Ms. Maya Hayden, San Francisco Bay NOAA Sentinel Site. 2014. Immediate supervisors are Dr. Jim Sullivan (Chair of the NOAA Sentinel Site Program) and Dr. James Eckman (California Sea Grant).

Please see Appendix A for examples other Agency - Sea Grant partnership positions that are not funded through the NSGO.

III. Funding of the NOAA-Sea Grant Liaison Positions

By and large, funding of the NOAA-Sea Grant Liaison positions has involved three (and in one instance, four) parties: the NSGO, a NOAA partner, and the host Sea Grant program. But since each position was created under special circumstance, there is no single funding model. In some instances, the costs are shared equally between three or four partners while in others, the NSGO and NOAA partner share 80% of the cost and the host Sea Grant program provides the balance by matching the NSGO portion. In one case, the Sea Grant program's share exceeds the 50% match requirement and in two instances, the cooperative institutes affiliated with the OAR laboratory pay a sizable portion of the costs while the OAR labs themselves contribute little to the funding.

To provide a better historic funding context, when the first liaison position (GLERL) was created, the NSGO, GLERL and Michigan Sea Grant agreed to split the costs three ways¹. But currently, the NSGO and GLERL provide 75 percent of the salary and the remaining 25 percent is covered by Michigan Sea Grant². The original agreement also stated that the Sea Grant program's costs (in this case Michigan Sea Grant) could also be paid by "the Great Lakes Sea Grant Network." The operating expenses (travel, computer system, phone, email, office space, graphics support, visualization lab, etc.) are provided by GLERL.

Unlike the GLERL arrangement, the AOML liaison relies heavily on extramural funding from the NOAA Lab's partner cooperative institute, the University of Miami's Cooperative Institute for Marine and Atmospheric Studies (CIMAS) and the funding amounts from each partner is variable. The NSGO is currently working with Florida Sea Grant, CIMAS, and AOML to see if there is a more effective funding arrangement for this position.

The NSSL position is funded by the NSGO (67%) with a 33% matching amount from the University of Oklahoma's Cooperative Institute for Mesoscale Meteorological Studies (CIMMS)³. The NSSL does not contribute directly to this position and the liaison does not have a host Sea Grant program. The funding mechanism is also different. The project is funded through a biennial proposal submitted by NSSL to the NSGO. The other liaison positions are included in the Sea Grant host programs' four-year, omnibus proposals.

The newest funding model is being used to fund three positions, two with PMEL (2012) and one at the Northwest Fisheries Science Center (NWFSC; 2013). The costs are shared equally between the NSGO, Washington Sea Grant, and either PMEL or NWFSC. The projects are being piloted over a five-year period^{4, 5}.

A similar arrangement is in place for the Alaska coastal resilience position. Four parties contribute 25% each: the NSGO, Alaska Sea Grant, the Alaska Center for Climate Assessment and Policy (ACCAP) which is part of NOAA's Regional Integrated Sciences and Assessments (RISA) program, and the Alaska Ocean Observing System (AOOS)⁶.

Five liaison positions were created in 2015 to serve as liaison/outreach coordinators at five NOAA Sentinel Site Cooperatives in Maryland-Virginia, North Carolina, Alabama-Florida, California and Hawaii. Funding is only available for two years and involves cost-sharing between three parties: the NSGO contributes 40%, the host Sea Grant Program's matching amount (20%) and 40% from NOAA's Sentinel Site Program that is administered by National Ocean Service⁷.

Please see Table 2 for a complete table of funding.

References

- 1) "Model for Sea Grant/ OAR/ NOAA Outreach Pilot Position Description; Sea Grant Outreach position at GLERL"
- 2) Memorandum for: Arlene Simpson Porter, Director Grants Management Division; From: Leon Cammen, Director, National Sea Grant College Program / Subject: FY2014-17 Sea Grant Funding Plan for Omnibus Proposals // (Sea Grant Spend Plan 2014-2017).
- 3) National Sea Grant Weather and Climate Extension Specialist: Continuation of support for Sea Grant Outreach Position at NSSL and the Cooperative Institute for Mesoscale Meteorological Studies at the University of Oklahoma Sept 1 2015 – Sept 30 2016.
- 4) Washington Sea Grant and PMEL Project Proposal Narrative: 'Establishment of a Liaison between Washington Sea Grant and the Pacific Marine Environmental Laboratory';
- 5) Washington Sea Grant and NWFSC Project Proposal Narrative: 'Establishment of a Social Science Liaison between Washington Sea Grant and NOAA Fisheries.'
- 6) 'Enhancing Alaskan Coastal Community Resilience and Adaptation to a Changing Environment' Proposal and Budget Justification June 8, 2015).
- 7) Sentinel Site Proposals 2015-2016; Funding Availability Announcement: NOAA Sentinel Sites Cooperative)

IV. Findings

All liaison positions are highly valued by the relevant NOAA Laboratory, Northwest Fisheries Science Center, Sentinel Sites, and host Sea Grant program.

The Great Lakes Sea Grant programs and GLERL administrators laud Dr. Sturtevant's liaison work and her ability to think regionally and coordinate with GLERL and other NOAA regional efforts. The annual travel budget is a concern. It is very limited and makes working with the eight Sea Grant programs in the region very difficult.

The Great Lakes Sea Grant Network, Michigan Sea Grant, Michigan State University and GLERL are proposing that the NSGO be a signatory to a five-year and renewable Memorandum of Understanding (MOU) between the parties. The MOU would address funding, programmatic oversight, recruitment and supervision, and an annual plan of work.

Dr. Pamela Fletcher is considered a valuable asset by AOML, the University of Miami's Cooperative Institute for Marine and Atmospheric Studies, and Florida Sea Grant. She

has helped make South Florida coastal marine ecosystems science more available to environmental managers and has produced excellent outreach products and services.

The single biggest concern involving this position is Dr. Fletcher's heavy dependence (nearly 50 percent) on soft money procured through grant competitions. She and her supervisors agree that this has precluded her from becoming better integrated in AOML and Florida Sea Grant strategic priorities and developing more of a niche(s) as a SGE specialist. Florida Sea Grant, AOML and the NSGO are working with Dr. Fletcher to address the funding and programming issues.

The current NSSL Liaison, Dr. Kodi Monroe, along with her predecessor, Dr. Suzanne Van Cooten, worked with North and South Carolina Sea Grant programs on the Lab's Coastal and Inland Flooding Observation and Warning (CI-FLOW) project. Project emphasis has shifted, and while Dr. Monroe still explores opportunities for coastal flooding/inundation research, she does so under the umbrella of FACETs (Forecasting a Continuum of Environmental Threats), a next-generation hazard forecasting and communication approach, and application of social, behavioral, and economic sciences to high-impact environmental threats.

The NSSL project would greatly benefit from closer collaboration with Sea Grant programs involved in risk communication and hazard resilience which is at the heart of the FACETs program. Also, unlike the other Liaison positions, this project has no host Sea Grant program. Currently, Dr. Monroe attends selected regional and professional meetings with many of her Sea Grant colleagues but the bulk of her communication and project planning involves coordination with other meteorologists, civil engineers, social scientists, and hydrologists, as well as National Weather Service (NWS) forecasters, federal researchers, university faculty, and private businesses.

The Sea Grant-PMEL Liaison for ocean acidification, Dr. Meg Chadsey, has worked with PMEL scientists to produce and distribute several meaningful publications on ocean acidification and established an ocean acidification-monitoring program for local high school students.

Dr. Chadsey's office is at Washington Sea Grant and she frequently interacts with PMEL scientists at the nearby Lab. The broader Liaison effort would, however, benefit from her increased presence at the Lab but this requires improvements to her physical workspace and better IT support services at the PMEL campus.

The Sea Grant-NWFSC liaison, Dr. Melissa Poe, is a social scientist that, among other research and coordination activities, partners with researchers at Swinomish Indian Tribal Community and the University of British Columbia to study the connections between shellfish harvesting, sense of place, and quality of life. She is involved with the NOAA California Current Integrated Ecosystem Assessment (IEA), and has been

deeply involved in developing approaches to include the representation of Human Well-Being in the IEA. This has included collaboration with more than 10 different institutions including universities, agencies, and Tribes.

Her work is greatly valued by the NWFSC and Sea Grant and there is interest at the NWFSC to make this a permanent position rather than the current five-year term.

The five Sentinel Site Outreach Coordinators have been in these positions since spring 2015 and the Alaska coastal resilience specialist was hired very recently. All partners are pleased with the new arrangements and optimistic that the Coordinators will be able to achieve the objective stated in their respective work plans.

Appendix A: Other Agency – Sea Grant Partnerships

In addition to the NOAA-Sea Grant Extension Liaisons positions, other extension partnership arrangements not involving the NSGO have been established between Sea Grant programs and federal and private partners. The following list provides examples and is not all-inclusive.

- 1) Dr. Paris Collingsworth, Aquatic Invasive Species Coordinator, U.S. Environmental Protection Agency (EPA) Great Lakes National Program Office / Illinois-Indiana Sea Grant
- 2) Ms. Caitie McCoy Nigrelli, Environmental Social Scientist, EPA Great Lakes National Program Office/ Illinois-Indiana Sea Grant
- 3) Ms. Kristin TePas, Community Outreach Specialist, EPA Great Lakes National Program Office/ Illinois-Indiana Sea Grant
- 4) Dr. Elizabeth Fly, Coastal Climate Extension Specialist, South Carolina Sea Grant Consortium/ NOAA Climate Program Office Carolinas Integrated Sciences and Assessments
- 5) Ms. Julia Noordyk, Outreach Coordinator, NOAA Coastal Storms Program in the Great Lakes Region/ University of Wisconsin Sea Grant Institute,
- 6) Mr. Brent Schleck, Outreach Coordinator, NOAA Coastal Storms Program in the Great Lakes Region/ Minnesota Sea Grant College Program (no longer with program)
- 7) Dr. Tracie Sempier, Outreach Coordinator, NOAA Coastal Storms Program in the Gulf of Mexico Region/ Mississippi-Alabama Sea Grant Consortium
- 8) Mr. Dolan Eversole, Outreach Coordinator, NOAA Coastal Storms Program in the Pacific Islands Region/ University of Hawaii Sea Grant College Program
- 9) Ms. Chris Hale, Gulf of Mexico Oil Spill Science Outreach Team, Gulf of Mexico Research Initiative/ Texas Sea Grant
- 10) Dr. Emily Maung-Douglass, Gulf of Mexico Oil Spill Science Outreach Team, Gulf of Mexico Research Initiative / Louisiana Sea Grant
- 11) Ms. Larissa Graham, Gulf of Mexico Oil Spill Science Outreach Team, Gulf of Mexico Research Initiative / Mississippi-Alabama Sea Grant
- 12) Dr. Monica Wilson, Gulf of Mexico Oil Spill Science Outreach Team, Gulf of Mexico Research Initiative/ Florida Sea Grant

13) Dr. Steve Sempier, Gulf of Mexico Oil Spill Science Outreach Team, Gulf of Mexico Research Initiative / Mississippi-Alabama Sea Grant

Table 1 List of Contacts

Affiliation	Personnel	NOAA Lab Director	NOAA Lab Point of Contact	Year Initiated	Sea Grant Program
Great Lakes Environmental Research Laboratory	Rochelle Sturtevant rochelle.sturtevant@noaa.gov	Deborah Lee Phone: 734-741-2244 deborah.lee@noaa.gov	Margaret Lansing; Information Services Branch Chief 734-741-2210 margaret.lansing@noaa.gov	2001	Michigan: James Diana/ Heather Triezenberg
Atlantic Oceanographic and Meteorological Laboratory	Pamela Fletcher Pamela.Fletcher@noaa.gov	Robert Atlas Phone: 305-361-4300 robert.atlas@noaa.gov	James C. Hendee; Supervisory Oceanographer and Director of Ocean Chemistry and Ecosystems Division 305-361-4396 Jim.Hendee@noaa.gov	2002	Florida: Karl Havens/ Martin Main
Pacific Marine Environmental Laboratory	Meg Chadsey mchadsey@u.washington.edu	Chris Sabine Phone: 206-526-6800 chris.sabine@noaa.gov	Richard Feely; Senior Scientist 206-526-6214 richard.a.feely@noaa.gov	2012	Washington: Penelope Dalton
Pacific Marine Environmental Laboratory	TBA	Chris Sabine Phone: 206-526-6800 chris.sabine@noaa.gov		2012	Washington: Penelope Dalton
National Severe Storms Laboratory	Kodi Monroe Kodi.Nemunaitis@noaa.gov	Steve Koch Phone: 405-325-6904 Steven.Koch@noaa.gov	Alan Gerard; WRD Deputy Division Chief 406-325-6477 alan.e.gerard@noaa.gov	2005	
Northwest Fisheries Science Center	Melissa R. Poe melissa.poe@noaa.gov	Mike J. Ford Phone: 206-860-5612 mike.ford@noaa.gov	Phil Levin; Program Manager of Ecosystem Science 206-860-3473; phil.levin@noaa.gov	2013	Washington: Penelope Dalton
Sentinel Sites MD	Sarah Wilkins sarah.wilkins@maryland.gov	Jim Sullivan, Jim.Sullivan@noaa.gov		2014	Maryland: Fredrika Moser
Sentinel Sites MS-AL	Renee Collini rcollini@disl.org	Jim Sullivan, Jim.Sullivan@noaa.gov		2014	Mississippi-Alabama: LaDon Swann
Sentinel Sites NC	Jennifer Dorton dortonj@uncw.edu	Jim Sullivan, Jim.Sullivan@noaa.gov		2014	North Carolina: Susan White
Sentinel Sites CA	Maya Hayden mkh@berkeley.edu	Jim Sullivan, Jim.Sullivan@noaa.gov		2014	California: James Eckman
Sentinel Sites HI	Maya Walton altonm@hawaii.edu	Jim Sullivan, Jim.Sullivan@noaa.gov		2014	Hawaii: Darren Lerner
Alaska Center for Climate Assessment and Policy	Davin Holen diholen@alaska.edu	TBA		2016	Alaska: Paula Cullenberg

NOAA Affiliation	Original Intent	Reference	Current funding arrangement	Reference
GLERL	Salary is provided by OAR headquarters (75%) and Michigan Sea Grant or the Great Lakes Network (25%)	Model for Sea Grant/ OAR/ NOAA Outreach Pilot Position Description: Sea Grant Outreach Position at GLERL 2001	The current arrangement is as follows: NSGO (30%), OAR/ GLERL (30%), and MISG (40%)	From 2014-2017 Omnibus Spend Plan
AOML	No historical documents were found from the original intent.		The current arrangement is variable. The NSGO, AOML and CIMIS are working to find a more efficient funding arrangement.	
NSSL	No historical documents were found from the original intent. However a draft version of "Proposed Sea Grant Outreach position at NSSL stated: "1) Salary for the position will be provided by OAR headquarters 2) Operating expenses will be provided by NSSL and OU 3) Additional travel support will be provided in the amount of \$3,000 per program annually by the four Gulf of Mexico Sea Grant Programs 4) Space will be made available in the offices of the Gulf of Mexico Sea Grant Programs as necessary when the specialist is working the coastal states. 5) Annual evaluations of the specialist for possible promotion and salary increases will be conducted by the appropriate administrator at OU and by the director of the NSSL	Draft version of "Proposed Sea Grant Outreach position at NSSL. Created in 2005, Modified in 2013	The current arrangement is as follows: NSGO (67%); OU (33%)	National Sea Grant Weather and Climate Extension Specialist: Continuation of support for Sea Grant Outreach Position at NSSL and the Cooperative Institute for Mesoscale Meteorological studies at the University of Oklahoma. May 6, 2015
PMEL	Funding Request of a total of \$165,000; FY2013: \$82,242, with match \$16,448, to give a total \$98,690 FY2014:\$82,757, with match \$15,933, to give a total of 92,690. For five years duration of this pilot position, the proposed funding is as follows: Year 1: PMEL 83%; NSGO 0%; WSG 17%/ Year 2: PMEL 84%; NSGO 0%; WSG 16%/ Year 3: PMEL 0%; NSGO 56%; WSG 44%/ Year 4: PMEL 0%; NSGO 54%; WSG 46%/ Year 5: PMEL 7%; NSGO 52%; WSG 41%/ To provide a total funding as follows: PMEL 33%; NSGO: 33%; WSG: 33% Budget justification for each PMEL liaison position for Year 1 and 2: Coastal Resources Specialist: Sea Grant -\$22,000 + match -\$4,000 Ocean Acidification Specialist: Sea Grant -\$26,000 + -\$5,000	"Establishment of a Liaison between Washington Sea Grant and the Pacific Marine Environmental Laboratory" Project Narrative & Sea Grant Budget Form 90-4 (OMB Control NO. 0648-0362)	The current arrangement is as follows: Allocation for PMEL and NWFSC positions will be as follows: In FY2014: \$15,306; in FY2015: \$221,784; FY2016: \$221,784; FY2017: \$227,862	From 2014-2017 Omnibus Spend plan
NWFSC	Funding Request of a total of 105,000; Projections for liaison costs through the full first five years are as follows: Year 1: NMFS 54%; NSGO 12%; WSG 33%/ Year 2: NMFS 13%; NSGO 54%; WSG 33%/ Year 3: NMFS 33%; NSGO 33%; WSG 33%/ Year 4: NMFS 33%; NSGO 33%; WSG 33%/ Year 5: NMFS 33%; NSGO 33%; WSG 33%/	"Establishment of a Social Science Liaison between Washington Sea Grant and NOAA Fisheries" Project Narrative & Sea Grant Budget Form 90-4 (OMB Control NO. 0648-0362)	Same as above	Same as above
Sentinel Site Coordinators	The NOAA National Sea Grant Office and the NOAA Sentinel Site Program anticipate that up to \$200,000 in total Federal funding will be available to support Sea Grant Extension (SGE) projects at the NOAA's Sentinel Sites under this announcement. (Also consult the Federal Funding Opportunity NOAA-OAR-SG-2014-2004033 on grants.gov	Funding Availability Announcement for Competition: NOAA Sentinel Sites Cooperative. Date of Posting April 22, 2014	The current arrangement is as follows: NSGO (40%); NOS/ OCM (40%); and SG Program Match (20%)	From two-year (2015-2016) Sentinel Site Proposals
Alaska Coastal Resilience Specialist	This position is new. The current arrangements for this position are as follows: Year 1 Request Budget Narrative Total funds: \$73,000/ Year 1 Total Match Budget UAF: \$36,371; Year 2 Request Budget Narrative Total funds: \$73,000/ Year 2 Total Match Budget UAF: \$36,629	"Enhancing Alaskan Coastal Community Resilience and Adaptation to a Changing Environment: UAF Budget Justification" Sent to National Sea Grant Office 2014-2017.	This position is new.	This position is new.

Draft Recommendations for Advisory Board Discussion

- 1) The NSGO should provide more clarity on the availability of resources including funding and NSGO support staff to create and sustain partnerships. NSGO should provide more clarity about the process to apply for available resources to sustain existing or create new partnerships.
- 2) Unlike the Sentinel Site coordinators, each of the Lab Liaison positions was established on different dates and agreed upon through correspondence and grant proposals. Thus, there is no consistency. All positions would benefit from memorandums of understanding or equivalent agreements between the Labs and the NSGO as to roles, responsibilities, funding, etc.
- 3) The Liaisons and their hosts and partners would benefit from having a National Sea Grant Office point of contact. The Extension Leader is best positioned to help integrate within the broader network and coordinate among the positions.
- 4) Each Liaison should establish a small Advisory Board (AB) whose members are drawn from the Lab, the host Sea Grant program, key constituents, and the NSGO's Extension Leader. The AB would primarily advise as to annual plans of work and opportunities for improved coordination.
- 5) An MOU or equivalent agreement would be a good practice. It could be modeled after the proposed Great Lakes MOU and would address funding responsibilities, supervision, programming and a work plan. MOU should be in effect for four years to coincide with NSGO Strategic Planning and Omnibus cycles. The next cycle begins on February 1, 2018.
- 6) Reporting needs to be strengthened with a greater emphasis on deliverables and outcomes. Whereas the Liaisons report annually to their host Sea Grant programs, that information needs to be fully captured and reported to the NSGO as well as the NOAA partner(s). Some information is embedded in the host programs annual PIER reports but the Liaison efforts are typically understated given the reporting limitations.
- 7) A summary of Liaisons' impacts and accomplishments, based on the information collected via PIER or another mechanism, should be included as part of the SGAB's Biannual Report to Congress.
- 8) The Sea Grant network, in particular, and NOAA OAR in general, know very little if any about these positions and their roles in helping integrate NOAA with its constituents. A strategy should be devised to raise awareness and the profile with undue burdening of all parties.
- 9) A host Sea Grant program(s) should be identified for NSSL. The topic ought to be

broached with the SGA and SGE.

- 10) The Liaisons would benefit from occasional joint meetings and programming. An exchange of ideas would foster possible collaborations and partnerships.

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-Biographies

-Floor Plan

-SGA Agenda



Biographies

Advisory Board Members



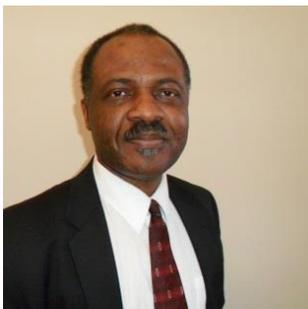
Dale Baker (Chair)
Ithaca, NY

Dale Baker worked with Sea Grant for over 36 years and served as a Sea Grant Extension Program Leader for 34 years. His major programmatic responsibilities were in the areas of commercial fisheries, ports and harbors, aquaculture and coastal climate change. Mr. Baker retired from Cornell University in January of 2009, but continues to do work for Sea Grant and the Cayuga Lake Watershed Network.



Patricia Birkholz
Saugatuck, MI

Senator Patty Birkholz is director of the Michigan Office of the Great Lakes. Previously, she served as a member of the Michigan State Senate from 2002 to 2010. In the Senate, she represented the 24th District comprising of Allegan, Barry and Eaton Counties. Prior to her terms in the Senate, she represented the 88th District in the Michigan House of Representatives from 1996 to 2002. She was the Allegan County Treasurer from 1992 to 1996. Birkholz began her career in politics as a trustee for Saugatuck Township.



Paulinus Chigbu, PhD
Fruitland, MD

Dr. Paulinus Chigbu is the Director of the NOAA Living Marine Resources Cooperative Science Center, Director of the National Science Foundation Center for Research Excellence in Science and Technology: Center for the Study of Coastal Ecosystem Processes and Dynamics in the Mid-Atlantic Region and a professor of marine environmental science at the University of Maryland. Chigbu has been involved in many programs to bring diversity to marine science including projects and partnerships with NOAA, Jackson State, University of Mississippi, Office of Naval Research and the Louis Stokes Alliance

for Minority Participation. Dr. Chigbu has been the recipient of a Fulbright scholarship, an Excellence Fellowship from the University of Washington and served as Chair of the Mississippi Academy of Sciences.



Rosanne Fortner, PhD
Oak Island, NC

Dr. Rosanne Fortner is a retired professor of environmental science education from The Ohio State University and a former middle school science teacher. In her 27 years at OSU she taught environmental communications and education to undergraduates and graduate students on campus, and Great Lakes interdisciplinary sciences for educators at F.T. Stone Laboratory on Lake Erie. From a position as a project investigator, she coordinated the Ohio Sea Grant Education Program until 2005. Her research was directed at identifying needs for science education programs and training, comparing effectiveness of methods for Earth system science education, and assessing the impact of environmental education programs in field and classroom settings. Curriculum development and assessment were also an important part of her responsibilities as an educator, and her 12 books of curriculum activities were funded by Ohio Sea Grant, the National Science Foundation, Great Lakes Protection Fund and other sponsors.

She works with current Ohio Sea Grant investigators to bring the curricula into modern technological forms, and to match Great Lakes with marine science learning through online teaching. Dr. Fortner was the Director of the Center for Ocean Science Education Excellence [COSEE] Great Lakes, a collaboration of the seven Sea Grant Education programs in the region, with NSF and Sea Grant support from 2006-2010. With her assistance the scientists and educators of that program developed the Great Lakes Literacy Principles. Fortner is the author of over 80 research and education-based publications, has advised 15 PhDs and 50 MS programs to completion, and served as a Fulbright Senior Scholar in Cyprus. She is currently Co-Chair of the Oak Island Beach Preservation Society at her retirement home in North Carolina.



E. Gordon Grau, PhD
Kaneohe, Hawaii

Dr. Grau is a Professor of Zoology at the Hawai'i Institute of Marine Biology, University of Hawaii. Although a Maryland native, Professor E. Gordon Grau has lived in Hawai'i for 33 years. For 15 years, he served as the director of the University of Hawai'i Sea Grant College Program (UH Sea Grant), a partnership program among the State of Hawai'i, University of Hawai'i at Mānoa, federal government, private industry, and other stakeholders. He was also

appointed the interim director of the Water Resources Research Center at the University of Hawai‘i at Mānoa, which focuses on addressing the unique water and wastewater management practices facing people in the Pacific. Previously, he served as Interim Director of the Hawaii Institute of Marine Biology and as Commissioner on the Honolulu Charter Commission, in the government of the City and County of Honolulu. He also served as President of the Sea Grant Association as well as President of the Center for a Sustainable Future, a 501(c) (3) nonprofit organization.

During his tenure as director, Professor Grau positioned UH Sea Grant at the forefront of the 33 Sea Grant Programs nationwide by organizing his program around the theme of coastal communities and economies. Through Sea Grant, both locally and nationally, Professor Grau worked to advance coastal communities to become more prosperous, more economically, socially and culturally inclusive, and to have the smallest environmental footprint.

Professor Grau holds a bachelor of science from Loyola University in Maryland, a master of science from Morgan State University, and a PhD from the University of Delaware. He also completed postdoctoral studies at the University of California, Berkeley. Currently, he is a professor and a member of the faculty of the Hawai‘i Institute of Marine Biology where he maintains a laboratory. He is the author of nearly 200 papers in peer-refereed journals. He has mentored, and supported through peer-refereed Federal grants, 16 Postdoctoral, 13 Ph.D. Students, and 22 M.S. students. Professor Grau continues to conduct research, and to mentor graduate and undergraduate students and postdoctoral associates.



Judith Gray
Block Island, RI

Judith (Judy) Gray retired in 2011 after a 33-year career as a meteorologist with the National Oceanic and Atmospheric Administration (NOAA). Judy started her career as a commissioned officer with the NOAA Corps. Her civilian career began at the Pacific Marine Environmental Laboratory in Seattle, where she studied winds along the mountainous coastlines of Alaska on NOAA ships and aircraft in support of the Fisheries Oceanography Coordinated Investigations. She moved to NOAA headquarters to be an advocate for oceanic and atmospheric research, served as the Acting Deputy Director of NOAA’s 12 Environmental Research Laboratories, and was the NOAA Program Manager for the Coastal Forecast System and, together with the National Science Foundation, GLOBEC (Global Ocean Ecosystems Dynamics). For 15 years, she was the Deputy Director of the Atlantic Oceanographic and Meteorological Laboratory, in Miami, supporting deep sea and coastal oceanography, climate, hurricane, and ecosystems research, and served on the FL Sea Grant Senior Advisory Council.

Her last position with NOAA was Acting Deputy Assistant Administrator for Oceanic and Atmospheric Research Programs and Administration, one of two deputies to the head of NOAA Research. She was responsible for the daily operations and administration of NOAA’s research

enterprise, and the execution of programs including the National Sea Grant Program, NOAA's Climate Program, and Ocean Exploration and Research. In retirement, Judy continues her mentoring of NOAA scientists in developing leadership skills. She is the Vice President of the Block Island Maritime Institute, whose mission is to provide educational programs and maritime activities including aquaculture, marine science, and maritime heritage for residents and visitors on Block Island. Judy is a citizen scientist, conducting monthly profiles of Block Island beaches to monitor routine and storm-related changes. In addition to the National Sea Grant Advisory Board, she is a member of the Senior Advisory Council for the Rhode Island Sea Grant Program.



**Brian Helmuth, PhD
Marblehead, MA**

Dr. Brian Helmuth is a Professor at the Marine Science Center at Northeastern University in Boston, Massachusetts, with a joint appointment in the Department of Marine and Environmental Sciences and the School of Public Policy and Urban Affairs. Helmuth's research and teaching focus on predicting the likely ecological impacts of climate change on coastal ecosystems, and on the development of products that are scientifically accurate, understandable, and useful by a diverse array of stakeholders. He has authored or co-authored over 70 peer-reviewed journal articles in the areas of climate change and marine ecology. Helmuth is a Fellow of the Aldo Leopold Leadership program, which trains select scientists to interact with policy makers, journalists and the public and in 2011 was named a Google Science Communication Fellow in the area of climate change. He also served as a lead author on the Technical input document for the inaugural Oceans chapter of the US National Climate Assessment.



**Amber Mace, PhD (Vice-Chair)
Sacramento, CA**

Dr. Amber Mace is the Deputy Director of the California Council on Science and Technology (CCST). In addition to providing strategic advice to the executive director and advancing CCST organizational goals, Mace leads the California Science, Technology and Policy Fellows program. Concurrently with her position at CCST, Mace maintains her affiliation with the UC Davis Policy Institute for Energy, Environment and the Economy as a Policy Fellow advancing a regional climate adaptation initiative. Prior to this position she served as the Executive Director of the California Ocean Protection Council (OPC) and Assistant Secretary for Coastal Matters at the California Natural Resources Agency from 2009 to 2012 and in dual roles as the Executive Director of the California Ocean Science Trust and the Science Advisor to the OPC from 2006 to 2009. Mace worked as a National Sea Grant John A. Knauss marine policy fellow for the U.S. Senate's Committee on Commerce, Science,

and Transportation in 2006, and as a California Sea Grant state fellow at the Ocean Resources Management Program in the California Natural Resources Agency in 2005. Mace is dedicated to ensuring policy development and resource management decisions are outcome driven, cost-effective, and informed with sound science.



Michael Orbach, PhD
North Carolina

Dr. Michael Orbach is a Professor of the Practice of Marine Affairs and Policy in the Division of Marine Science Conservation at the Nicholas School of the Environment at Duke University. He has performed research and has been involved in coastal and marine policy on all coasts of the U.S. and in Mexico, Central America, the Caribbean, Alaska and the Pacific, and has published widely on social science and policy in coastal and marine environments. He has worked as a Cultural Anthropologist with the National Oceanic and Atmospheric Administration, and has held several Governor's appointments to environmental Boards and Commissions as well as appointments to National Academy of Sciences Boards and Committees. He has been the President of The Coastal Society, and Chairman of the Board of Directors of the Surfrider Foundation.



Jim Murray, PhD
Naples, Florida

Dr. James D. Murray retired in 2011 as Deputy Director of the NOAA National Sea Grant College Program. He spent his entire 37-year career in various Sea Grant positions including Sea Grant Scholar at SUNY College of Environmental Science and Forestry, Regional Extension Specialist at Minnesota Sea Grant, Extension Leader for both the New Jersey and North Carolina Sea Grant Programs, National Sea Grant Extension Leader and finally Deputy Director of the National Sea Grant College Program. His professional interests are in marine resource and fisheries management where he was the Principal Investigator on over 40 grants which led to 58 professional publications. Murray was the recipient of the President's Award, Sea Grant Association in 2010, and the William Q. Wick Award for Visionary Career Leadership in Administration by the Assembly of Sea Grant Extension Leaders in 2011. Currently he serves as a member of the Florida Sea Grant Extension Program's Advisory Committee (Collier County) and volunteers as an Interpretive Ranger at Everglades National Park and as a research assistant at NOAA's Rookery Bay Estuarine Research Reserve.



**Nancy Rabalais, PhD
Cocodrie, Louisiana**

Dr. Nancy Rabalais is a Professor at the Louisiana Universities Marine Consortium where she is also Executive Director. Dr. Rabalais' research interests include the dynamics of hypoxic environments, interactions of large rivers with the coastal ocean, benthic ecology, and science policy. Dr. Rabalais is an AAAS Fellow, an Aldo Leopold Leadership Program Fellow, a Past President of the Estuarine Research Federation, and a National Associate of the National Academies of Science and has served as Chair of the Ocean Studies Board. She currently serves on two National Research Council committees, the Council for the University-National Oceanographic Laboratories, the Executive Board for the Consortium on Ocean Leadership, and Board of Directors of the Gulf of Mexico Coastal Ocean Observing System, and is President Elect of the Southern Association of Marine Labs and the National Association of Marine Labs. She received the 2002 Bostwick H. Ketchum Award for coastal research from the Woods Hole Oceanographic Institution, the Blasker award shared with R.E. Turner, the Clarke Prize from the National Water Resources Institute, the Ruth Patrick Award from the Association for the Sciences of Limnology and Oceanography, a Rachel Carson Lectureship for the American Geophysical Union, and a Heinz Award. She earned a Ph.D. in Zoology from the University of Texas at Austin in 1983.



**Rollie Schmitt (Past Chair)
Leavenworth, Washington**

Rolland A. (Rollie) Schmitt has been a natural resources manager for 44 years; focusing on marine fish, shellfish, and mammals for the past 31 years. He has served as the Washington State Director of Fisheries and the National Marine Fisheries Service West Coast Regional Director for 6 western states. Upon moving to Washington, D.C. he became the Assistant Administrator/Director for the National Marine Fisheries Service; later the U.S. Department of Commerce Deputy Assistant Secretary for International Affairs in NOAA, and the National Director for NOAA Fisheries Office of Habitat Conservation. During his career he served 4 presidents with Presidential appointments as the U.S. Tuna Commissioner, U.S. Atlantic Salmon Commissioner, the Pacific and Alaska Fisheries Management Councils, and 12 years as the U.S. International Whaling Commissioner. His many awards and recognitions include: Presidential Merit Award, Trout Unlimited Washington Sportsman of the Year, Presidential award for outstanding achievement of a Vietnam veteran, and the Department of Transportation (USCG) Commandant's Award for Meritorious Public Service. In 2005, Mr. Schmitt retired and moved back to Sockeye Point Lodge in Washington State where he continues to work on marine and fresh water resource issues. He is currently serving his 6th year as a Fish and Wildlife Commissioner in Washington State.



Dick Vortmann
La Jolla, California

Richard H. Vortmann retired after a 30-year career with National Steel and Shipbuilding Company (NASSCO) based in San Diego, California where he served as President for 22 years. He also retired after six years as Vice President of General Dynamics Corporation. He most recently completed an assignment as Interim President and CEO of the San Diego Regional Chamber of Commerce. Vortmann recently completed a 7-year term on the Board (including 2 years as Chairman) of Scripps Health; Vortmann is a

Member of Council, American Bureau of Shipping. He is a Trustee on the San Diego County Employees Retirement System. Previously Vortmann served as Chairman of both the American Shipbuilders Association and the Shipbuilders Council of America, and Vice Chairman of the National Academies of Science Marine Board.

For 14 years he was the Chairman of the American delegation to the Japanese, European, Chinese, Korean, and United States Annual Shipbuilding Conference. He also served as a Director of the San Diego Chamber of Commerce and the San Diego Economic Development Corporation. He was a member of the San Diego Mayor's Blue Ribbon Finance Committee, and Vice Chair of the San Diego Pension Reform Committee. Vortmann was born in San Francisco, California. He earned a Bachelor's degree in finance in 1966 and an MBA in 1967 from the University of California, Berkeley, for whom he also played basketball. He taught on the Business School faculty of his alma mater from 1967 to 1969 while doing postgraduate work before entering private industry.

Ex-officio Members



Nikola Garber, PhD
Acting Director,
National Sea Grant College Program

In her role as the acting Director of the National Sea Grant College Program, Kola administers funding to the 33 Sea Grant colleges throughout the nation and oversees several national funding competitions, facilitates both the Department of Commerce designation of Sea Grant College Programs, and the Sea Grant program assessment process. On a daily basis, this includes strategic, fiscal, evaluative, and management responsibilities of an annual budget exceeding \$100 million composed of the Sea Grant

Federal appropriation, matching non-federal funds, and other NOAA and Federal Agency funding that is passed through the office. Kola joined NOAA Sea Grant in 2000 as the Sea Grant Knauss fellowship manager and has since held positions as the Assistant Director for Administration and most currently as the Deputy Director. She holds a Bachelor of Science in biology from Bowling Green State University, a Master of Science degree in marine science/molecular biology and a Ph.D. in International Development from the University of Southern Mississippi. Her dissertation researched NOAA's response to Hurricane Mitch and formulated a plan for Reconstruction Planning in NOAA. In 1999, Dr. Garber was a recipient of the Dean John A. Knauss Marine Policy Fellowship working as a legislative fellow for Senator Ron Wyden.



**Sylvain De Guise, DMV, PhD
President, Sea Grant Association**

Sylvain De Guise is director of the Connecticut Sea Grant College Program, Professor of Pathobiology and Veterinary Science at the University of Connecticut, and President of the Sea Grant Association. He currently serves as the Sea Grant representative on the NOAA North Atlantic Regional Team, is past-chair of the Northeast Sea Grant Consortium, an entity consisting of the Sea Grant programs from Maine to New York, and is a member of both the Management and Science and Technical Advisory Committees of the EPA-funded Long Island Sound Study, one of the National Estuary Programs. He is one of three Science Directors of the Connecticut Institute for Resilience and Climate Adaptation. He has a degree in veterinary medicine (1988) and a residency in veterinary pathology (1993) at the Université de Montréal, as well as a Ph.D. in immunotoxicology at the Université du Québec à Montréal (1996).

As the president of the Sea Grant Association, Dr. De Guise is an ex-officio member of the National Sea Grant Advisory Board. Dr. De Guise's personal research interest is the influences of man-made and natural toxicants on the health of aquatic organisms (from marine mammals to fish, lobsters and oysters), with focus on the immune system. He and his wife Jean live in Coventry, Connecticut.

Designated Federal Officer



**Jonathan Eigen
CFO, DFO, Program Officer,
National Sea Grant Office**

Jonathan Eigen is the Chief Financial Officer for the National Sea Grant College Program, Designated Federal Officer for the National Sea Grant Advisory Board, and the Program Officer for

the Illinois-Indiana, Minnesota, New York, and Pennsylvania Sea Grant programs. Jon graduated from the University of Maryland in 1988 with a BS in Marketing and Finance. He completed his Masters of Business Administration with an emphasis of Business Economics and Public Policy from The George Washington University. His duties with the National Sea Grant College Program include all aspects of the Budget and Grants administration as well as serving as Program Officer for the Great Lakes Region. Prior to joining NOAA in 1991 he worked in television sports for the now defunct Mizlou Sports News Network. His hobbies include basketball, reading science fiction/fantasy and board games.

Non-Member Presenters



Craig N. McLean **Deputy Assistant Administrator for NOAA Research**

Craig McLean is the deputy for NOAA's Oceanic and Atmospheric Research programs and administration. He is responsible for daily operations and administration of NOAA's research enterprise, and the execution of NOAA programs including the Climate program, the National Sea Grant Program, Ocean Exploration and Research, and Weather and Air Quality research.

McLean served NOAA in uniform for nearly 25 years, retiring from NOAA's Commissioned Corps in the grade of Captain after service at sea, underwater, and in operational, legal, and marine resource management positions. McLean served aboard hydrographic, oceanographic, and fisheries research ships and was the first commanding officer of NOAA's largest fisheries research vessel, the 224-foot *Gordon Gunter*. He led NOAA's innovation and planning for the Smithsonian Institution's Ocean Hall, and achieved a National Ocean Action Plan goal of securing a permanent, dedicated ship for the national ocean exploration program, the NOAA Ship *Okeanos Explorer*. He has previously served in NOAA as Executive Officer of the National Ocean Service, and was the founding Director of NOAA's Office of Ocean Exploration. He is the head of the U.S. Delegation to the Intergovernmental Oceanographic Commission, and is Co-Chair of the National Ocean Partnership Program.

A lifelong diver, he began exploring deep shipwrecks through decompression diving while in junior high school. These experiences have taken him to the Amazon River searching for freshwater dolphins, and to the USS MONITOR and *RMS TITANIC* searching for solutions in historic shipwreck management.

Craig McLean is also an attorney and has practiced marine resource law for NOAA. He has been awarded the Departmental Silver and Bronze Medals, and the NOAA Corps Commendation Medal. He is a frequent speaker on ocean related subjects, rooted in his diverse NOAA career experience. He is a Fellow of the Explorers Club, and of the Marine Technology Society, and a Past-President and Chairman of the Sea-Space Symposium.



LaDon Swann
Director, Mississippi-Alabama Sea Grant
Consortium and Director of the Auburn University's
Marine Program

Dr. Swann received his BS and MS from Tennessee Technological University and a Ph.D. from Purdue University. LaDon has over 30 years of experience in implementing practical solutions to coastal and Great Lakes issues through competitive research, graduate student training, extension and outreach and K-12 education. LaDon is actively involved in maximizing the use of boundary organizations in translational research. LaDon is a board member of the National Academies Gulf Research Program and a member of the Ocean Research Advisory Panel. LaDon is a past-president of National Sea Grant Association, U.S. Aquaculture Association and the Indiana Aquaculture Association. He was a Peace Corps Volunteer in Togo, West Africa.

National Sea Grant Office Biographies 2016



Sharon Aziz (Acentia/Maximus Contractor to NOAA) is a Systems Analyst for the National Sea Grant Office. She currently part of the PIE team (Planning, Implementation and Evaluation) for the Performance Review Panels.

She graduated from Columbia Union College in 2006 with a BS in Biology and is currently working towards pursuing a Project Management Professional Certificate. Sharon previously worked as a scientist for Life Technologies, but realized she enjoyed the business aspect and decided to go a different route. Prior to joining Sea Grant, Sharon was a program analyst for the Federal Aviation Administration (FAA), where she worked in the Project Management Office. She overlooked budgets, risk mitigation meetings, made sure the projects were on track and made sure resources were available for each program.



Jim Berkson, Ph.D. is the National Marine Fisheries Service (NMFS) Liaison to Sea Grant in the National Sea Grant Office. Jim facilitates the creation of new partnerships between NMFS and the National and State Sea Grant offices around the country.

Jim received his Bachelor of Arts from the University of California at San Diego, his Master of Science from the University of British Columbia, and his Ph.D. from Montana State University. Jim has worked for federal, state, and tribal fisheries management agencies. He has also been an academic, teaching at the University of Oregon, the University of South Florida, and the University of Florida and earning tenure at Virginia Tech. Utilizing both his agency and academic backgrounds, Jim has a long history of creating new partnerships. Since joining NOAA in 2003, Jim created and led the NMFS Recruiting, Training, and Research program, designed to recruit outstanding undergraduate and graduate students into the field of population dynamics and into jobs with NOAA.



Margaret M. (Peg) Brady is currently on a 12-month detail with Sea Grant as a senior program manager focusing on planning, implementation, and evaluation (PIE), and will be serving as a program officer.

Since 2008 Peg served as the NOAA senior policy liaison to the National Invasive Species Council and Aquatic Nuisance Species Task Force and concurrently served as NOAA Fisheries Division Chief for planning and program evaluation. She continues to chair the Interagency National Ocean Policy Ecosystem-based Management Interagency Work Group. Peg joined NOAA in 2003 as the NOAA Habitat Program Coordinator. Peg has also completed the NOAA Leadership Competencies Development Program (LCDP) where she served as the coordinator to the U.S. Interagency Committee on Ocean Science and Resource Management Integration at the White House's Council on Environmental Quality and developed programs at the Northwest Fisheries Science Center. Prior to joining NOAA, Peg served as the Assistant Secretary within the Massachusetts Executive Office of Environmental Affairs, Director of the Commonwealth's Coastal Zone Management Program, and as a marine research scientist and instructor at a variety of labs and institutions in the Northeast.

Peg holds Bachelor and Master of Science degrees from the University of Rhode Island and participated in M.I.T.'s Environmental Policy Group, the U.S. Federal Executive Institute, and Harvard University's Kennedy School of Government Senior Management Program.



Joshua E. Brown, Ph.D., leads the national Climate and Hazard activities for the National Sea Grant College Program. Joshua developed and oversaw Sea Grant's Coastal Communities Climate Adaptation Initiative as well as NOAA Sea Grant's responses to the Deepwater Horizon Oil Spill, Hurricane Sandy, and other coastal disasters. He served on NOAA's Post-Sandy Service Assessment team, coauthoring the final report. He coleads the Mitigation and Adaptation Services objective team under NOAA's Climate Goal. He is a member of a range of federal agency teams, including the NOAA Climate Adaptation Team and FEMA's Community Planning and Capacity Building Recovery Support Function team. He serves as a Federal Program Officer, overseeing large institutional awards to leading research universities for coastal science issues. Joshua is the Program Officer for Washington Sea Grant, Florida Sea Grant, and the National Sea Grant Library.

Dr. Brown received his PhD in Earth, Ecology, & Environmental Sciences from the University of Toledo, his MS in Integrative Biology in 2004 From Brigham Young University, and his BA in Biology in 1999 from Wabash College. He is a coauthor on eight peer-reviewed publications and has presented information on his research, evolutionary ecology, sustainability, hazard resilience and climate adaptation to diverse audiences in professional societies and community organizations. After receiving his doctorate degree, Joshua joined the National Sea Grant Office as a Dean John A. Knauss Marine Policy Fellow, working on sustainable coastal development and community resilience. He stayed with Sea Grant after his fellowship, continuing to focus developing programs to support community resilience.

Dorn Carlson is the Program Director for Research and the Program Officer for the Delaware, Maryland, New Jersey, Virginia, Ohio, Lake Champlain, and Wisconsin Sea Grant Programs.



Carlson is a long-time Federal bureaucrat, formerly regulation developer for the EPA, Environmental Manager for an R&D Facility, Supervisory Research Chemist for the Navy, and Powder Monkey. Starting in 1979, he worked for 10 years as a research chemist for the Navy, then another seven years as the Environmental Compliance manager of a Naval Sea Systems Command Research facility in Silver Spring, Maryland. He then helped develop joint Navy-EPA environmental regulations, first for the Navy, then for EPA.

Since 2000, Carlson has worked for NOAA as a Sea Grant Program Officer. In 2007, he became the Research Director of Sea Grant.

Brooke Carney is the Communication Specialist with the National Sea Grant Office and is currently focused on coordinating the 50th Anniversary of Sea Grant.



Prior to joining NOAA, Brooke worked with the National Park Service's Inventory and Monitoring Program, Alaska Region as the Science Communication Specialist for the region. She has also served as both Coastal Training Coordinator and Education Coordinator for Rookery Bay National Estuarine Research Reserve in Florida where she specialized in developing and delivering education and training programs for diverse audiences and facilitating management and policy development processes. Brooke holds Master's degrees in Biology from the University of Alaska Anchorage and in Public Administration from Georgia Southern University.

David Chorney is a Program Manager for the National Sea Grant Office and will be working with PIER, contracts, partnerships with the National Weather Service, the resilient communities focus area and water activities.



David has his Masters Degree from Air University in Leadership, a Masters Certificate in Homeland Defense from the University of Colorado - Colorado Springs, a Bachelors Degree in Meteorology From Florida State University, and an Associated degree in Computer Science from St. Petersburg College. David is currently an officer in the USAF reserves. David's Master Thesis was about Climate Change and the effects it will have on Canadian homeland security and the Northwest Passage. From 1987 to 1989, while at Florida State University, he did on air weather for a local television station in Tallahassee, Florida. David was in the US Air Force on active duty from 1989 to 1993 and is a veteran of Desert Storm. After the USAF, he joined NOAA and went into the National Weather Service and worked at the Weather Service Office in Hartford, CT. In 1994, David got promoted and went to work at the National Hurricane Center in Miami as a forecaster until 1998. After leaving NHC, He went to work at the Ocean Prediction Center in Camp Springs. During that time period, while in the reserves, David was recalled to USAF active duty at US Central Command, where he was the lead weather man for the war in Afghanistan. After September 11, 2001, David was recruited to work for the USAF as a civilian where he was the Deputy Branch Chief of a weather unit for homeland defense of North America. He had the privilege to brief President George W. Bush in person during the landfall of Hurricane Rita, just after Katrina.

April Croxton, Ph.D. is currently on detail with the National Sea Grant Office as an Aquaculture Specialist.



Prior to her National Sea Grant Office detail, April was a Fishery Biologist at the NOAA Fisheries Milford Laboratory, in Milford, CT. Her primary research within the Aquaculture Enhancement Division focused on the impacts of environmental stressors on the immune physiology of bivalve species, both nationally and internationally. She has also served as the Program Coordinator for the NOAA RESTORE Science Program as a NRAP detailee. April joined NOAA in 2003 as an Office of Education Graduate Sciences Program Fellow while completing her dissertation research at Florida A&M University. She holds a PhD in Environmental Sciences and a B.Sc. in Biology from Virginia Union University.

Laura Early is the Coastal Specialist in the National Sea Grant Office. She is a recipient of the 2016 John A. Knauss Marine Policy Fellowship.



Laura is pursuing her M.S. in Conservation Ecology and Sustainable Development at the University of Georgia, and received a B.S. in Biological Sciences from Clemson University. In between degrees, Laura contributed to field research, education, and outreach at Little St. Simons Island, GA. She also monitored sea turtle nesting with the Georgia Sea Turtle Cooperative and Cumberland Island National Seashore, as well as worked to inspire young ocean advocates at Sanibel Sea School. Laura's Master's thesis work utilizes ecosystem services modeling to inform local decision-makers about potential impacts of land use change in coastal Georgia.

Jonathan Eigen is the Chief Financial Officer for the National Sea Grant College Program, Designated Federal Officer for the National Sea Grant Advisory Board, and the Program Officer for the Illinois-Indiana, Minnesota, New York, and Pennsylvania Sea Grant programs.



Jon graduated from the University of Maryland in 1988 with a BS in Marketing and Finance. He completed his Masters of Business Administration with an emphasis of Business Economics and Public Policy from The George Washington University. His duties with the National Sea Grant College Program include all aspects of the Budget and Grants administration as well as serving as Program Officer for the Great Lakes Region. Prior to joining NOAA in 1991 he worked in television sports for the now defunct Mizlou Sports News Network. His hobbies include basketball, reading science fiction/fantasy and board games.

Kyrstin Fornace, PhD is the Integrated Water Coordinator, a joint position between the National Sea Grant Office, Climate Program Office, and Office of Weather and Air Quality. She is a recipient of the 2016 John A. Knauss Marine Policy Fellowship.



Kyrstin received a PhD in chemical oceanography from the MIT/WHOI Joint Program in 2015 and a B.S. in chemistry from MIT in 2009. Her dissertation research focused on past monsoon variability and the effects of past climate change on the terrestrial carbon cycle in tropical South America. As a graduate student, she participated in the National Network for Ocean and Climate Change Interpretation (NNOCCI) program and several other Earth science education activities. Outside of research, she also spent time developing her skills as an amateur graphic designer.

Julia Galkiewicz, Ph.D., is the Fellowship Coordinator, managing the Sea Grant Knauss Fellowship program and the NMFS Sea Grant Fellows program. She is also the National Office liaison with the Sea Grant Educators Network.



Julia was previously a Communication Specialist with the Office of Oceanic and Atmospheric Research, where she also spent a year as a 2012 Knauss Fellow, managing projects that allowed scientists to share their cutting-edge research with other scientists, Congress, and the public. Julia also worked at the American Geophysical Union on the Thriving Earth Exchange, a new effort to connect communities with Earth and space scientists to solve global challenges on a local level. Julia received her Ph.D. in Marine Science at the University of South Florida, College of Marine Science and her B.Sc at the College of William and Mary.

Nikola M. Garber, Ph.D., is the Deputy Director of the National Sea Grant College Program.



In her role as the Deputy Director of the National Sea Grant College Program, Kola administers funding to the 33 Sea Grant colleges throughout the nation and oversees several national funding competitions, facilitates both the Department of Commerce designation of Sea Grant College Programs, and the Sea Grant program assessment process. Kola joined NOAA Sea Grant in 2000 as the Sea Grant Knauss fellowship manager and has since held positions as the Assistant Director for Administration and most currently as the Deputy Director. She holds a Bachelor of Science in biology from Bowling Green State University, a Master of Science degree in marine science/molecular biology and a Ph.D. in International Development from the University of Southern Mississippi. Her dissertation researched NOAA's response to Hurricane Mitch and formulated a plan for Reconstruction Planning in NOAA. In 1999, Dr. Garber was a recipient of the Dean John A. Knauss Marine Policy Fellowship working as a legislative fellow for Senator Ron Wyden.

Robin Garcia, (Acentia/Maximus Contractor to NOAA) is the Communication Specialist for the National Sea Grant Office.



Robin was recently the Aquatic Specialist for Charles River Laboratories supporting the National Institutes of Health and she is the Vice President of Communications for DC EcoWomen. Robin's career in science and communication is exemplified by several years of communication experience including two publications in peer-reviewed journals and extensive knowledge of social media use to share information. Robin has served as a Marine Science Technician at Savannah State University and a Research Assistant for the NOAA Center for Coastal Environmental Health and Biomolecular Research in Charleston, S.C. In addition, Robin is an active volunteer and experienced facilitator. Robin received her M.S. in Marine Biology with Aquatic Toxicology Concentration from the College of Charleston, Charleston, S.C. She received her B.S. in Marine Science, Biology, and Chemistry from the University of Miami.

Chris Hayes is the Acting Director of Planning and Evaluation, and is the Program Officer for the Maine, North Carolina, South Carolina, Georgia, Louisiana, Mississippi-Alabama, Puerto Rico, Texas, and New Hampshire Sea Grant programs.



Chris has a B.S. in Ecology from the University of Georgia and an M.S. in Fisheries Sciences from Virginia Tech. As an undergraduate, Chris spent a year visiting five diverse countries through the International Honors Program: Global Ecology. Funded through the National Marine Fisheries Service (NMFS), he published assessments of three species of hammerhead shark populations in his Master's thesis. He was awarded the Knauss Marine Policy Fellowship in 2008 and worked in the NMFS Partnerships and Communications office. After some time with the Atlantic Coastal Cooperative Statistics Program, Chris joined the National Sea Grant Office in 2010 and led development of the PIER database. In 2013, he initiated the Sea Grant Social Science Community of Practice and served as OAR's social science liaison to NOAA. In 2014, he became manager of the Knauss Marine Policy Fellowship.

Jennifer Hinden is the Program Support Specialist for the National Sea Grant Office and has been with Sea Grant since 2012. In her current role, she supports the Director, Acting Deputy Director, Acting Director of Communication, and the National Sea Grant Advisory Board.



Jennifer received her Bachelor of Science Degree in Organizational Leadership. Prior to joining Sea Grant, Jennifer was the Public Information Officer for Jefferson County Homeland Security and Emergency Management. There she provided information to media outlets by generating news, releases, holding press conferences, and acting as department spokesperson and media liaison to disseminate agency related information to inform and educate the public. She also spoke with various public schools and Senior Citizen groups on emergency preparedness and weather safety.

David Kidwell, is the National Ocean Service (NOS) liaison to Sea Grant while on detail to the National Sea Grant Office. David is focused on facilitating collaboration and partnerships with NOS and is collaborating on oversight of activities in the Healthy Coastal Ecosystems focal area. When not on detail to Sea Grant, David is a research oceanographer at the NOS National Centers for Coastal Ocean Science (NCCOS), where he serves as a program manager for the Ecological Effects of Sea Level Rise and Coastal Hypoxia Research programs. In addition to managing external science programs, David works to advance NOAA and NCCOS resilience priorities through a number of internal and inter-agency teams and partnerships, including the Gulf Coastal Plains and Ozarks Landscape Conservation Cooperative, the Gulf of Mexico Sentinel Site Cooperative, and the NOAA Gulf of Mexico Regional Collaboration Team. David joined NOAA and NCCOS in 2007 as a Sea Grant John A. Knauss Marine Policy Fellow.



Prior to NOAA, David worked at the U.S. Geological Survey's Patuxent Wildlife Research Center, where he completed his Master's thesis research and collaborated on a suite of research projects ranging from sea duck satellite telemetry and foraging ecology to habitat assessments of bottomland forests. David received his M.S. degree in Marine, Estuarine, and Environmental Science from the University of Maryland and a B.A. degree in Biology from the University of Maryland, Baltimore County. Outside of work, David is avid birdwatcher and can often be found wandering parks, marshes, and forests in search of feathered critters.

Matthew Lurie is the National Ocean Council Fellow, supporting both the White House Office of Science and Technology Policy and the National Sea Grant Office. He is a recipient of the 2016 John A. Knauss Marine Policy Fellowship.



Matt is a trained ecologist and science educator. He received a B.Sc. in Marine Biology from the University of California at Los Angeles followed by an M.S. and Ph.D. in Botany from the University of Hawaii at Manoa. His research focused on plant invasion ecology in marine and terrestrial ecosystems. As a science educator Matt is passionate about promoting science literacy. He served as an undergraduate instructor for biology and natural history courses, co-wrote the online marine science curriculum Exploring our Fluid Earth, and facilitated professional development workshops for Teaching Science as Inquiry: Aquatic Science through the Curriculum Research & Development Group at the University of Hawaii at Manoa.

Amanda McCarty is the Acting Assistant Director for Network Relations at the National Sea Grant Office.



Amanda came to the Sea Grant from NOAA's Climate Program Office in Silver Spring, Maryland where she works on domestic and international climate policy, negotiations, and partnerships. Since joining NOAA's Leadership Competency Development Program in July 2014 and prior to her position at Sea Grant, Amanda has worked on two rotational assignments, first as the Deputy Director for the National Weather Service's International Affairs Office and then as a Senior Policy Analyst in the National Marine Fisheries Seafood Inspection Program. Amanda is originally from Minnesota, a place she still thinks of as home. She received her B.S. in Biology from Pacific Lutheran University in Tacoma, Washington and her M.S. in Marine Biology from the College of Charleston in Charleston, South Carolina. She was a 2008 Sea Grant Legislative Fellow with the Democratic Staff of the Senate Committee on Commerce, Science, and Transportation.

Karen Pianka is the Aquaculture Fellow in NOAA's Office of Aquaculture, supporting both the Office of Aquaculture and the National Sea Grant Office. She is a recipient of the 2016 John A. Knauss Marine Policy Fellowship.



Karen is finishing her dual Master's degrees in Marine Policy and Marine Biology from the University of Maine at Orono. Her marine policy research has focused on shellfish and seaweed aquaculture as an income diversification opportunity for commercial lobstermen, and her marine biology research has explored the development of ecologically friendly treatments for blister worms in Eastern oysters. Karen's background includes experience working in the aquarium industry as well as serving as the Wildlife Permits Coordinator for the Texas Parks and Wildlife Department. Both of these experiences afforded her the opportunity to work close to the interface between science and policy, which she is looking forward to continuing.

Katherine Porlles (CollabraLink Contractor to NOAA) is the financial analyst for three OAR offices - Sea Grant, Ocean Acidification, and Unmanned Aircraft Systems.



Katherine graduated from George Mason University with a BS in Marketing and Finance. Prior to joining NOAA, Katherine worked as a financial analyst for BAE System supporting the DDG51 shipbuilding program at the Navy. She also worked as a finance and contract analyst at Abt Associates in the domestic health division where she managed a portfolio of 15 projects. During the summer season Katherine worked on proposals and was in charge in the creation of the budgets and all the other supporting documents for the business volume.

Katherine loves to travel and tries to spend her birthday week in another state or another country. She enjoys meeting new people and learning about new cultures. She speaks Spanish and a little bit of French.



Mary Robinson is the Administrative Assistant for the National Sea Grant Office.

Elizabeth Rohring is the Director of Communication with the National Sea Grant Program Office. She is also the coordinator for the Sea Grant Social Science Community of Practice, and Program Officer for the National Sea Grant Law Center.



Elizabeth received her Master's degree from Yale University, with advanced study areas in conservation biology of coral reef ecosystems and social ecology of natural resource users. She has worked with the NOAA Ocean Service International Programs Office on socioeconomic issues relating to Caribbean MPAs and also as a Sea Grant Extension Agent in the U.S. Virgin Islands, focusing on engagement with the local fishermen. She is the co-founder of the VI Coral Conservation Consortium and the Virgin Islands Network of Environmental Educators. She also served on the steering committee of the Caribbean Regional Association for CariCOOS. Prior to joining Sea Grant's National Office, Elizabeth most recently worked as the COSEE Senior Ocean Science Education Specialist for the Smithsonian's Museum of Natural History Sant Ocean Hall. She is currently working on her Ph.D. at George Mason University in climate change outreach and engagement.

Erin Shew is the Climate Preparedness Fellow, supporting both the White House Council on Environmental Quality and the National Sea Grant Office. She is a recipient of the 2016 John A. Knauss Marine Policy Fellowship.



Erin is concurrently pursuing an MA in Arctic and Northern Studies from the University of Alaska Fairbanks. Her research looks at the ways in which natural resource management systems promote or detract from resilience in fishing communities. Prior to beginning her fellowship, she worked as an anthropologist for the Alaska Department of Fish and Game Division of Subsistence conducting research on the use of wild foods in rural Alaska. Erin has also served as an AmeriCorps volunteer in the Native Village of Eyak's Department of Environment and Natural Resources and a communications intern for Renewable Energy Alaska Project. She has a deep love of cold places and a passion for helping communities implement practical solutions to build resilience and sustainability

Meeting Room Floor Plan

