



Maryland Sea Grant College

Request for Proposals

Funding Period

February 1, 2018—January 31, 2020



REQUEST FOR PROPOSALS: MARYLAND SEA GRANT 2018-2020 OMNIBUS



MARYLAND SEA GRANT COLLEGE PROGRAM

Two-Year Funding Period:

February 1, 2018 to January 31, 2020

Pre-proposals due January 27, 2017 at 5:00 PM

Full Proposals due mid-June 2017 (Final date TBD)

RESEARCH PROGRAM SUMMARY

Program Synopsis

The Maryland Sea Grant College (MDSG) seeks pre-proposals for its next funding cycle, February 1, 2018 to January 31, 2020. Research projects within Maryland's coasts and watersheds focused in three areas will be considered: 1) healthy coastal ecosystems; 2) sustainable fisheries and aquaculture; and 3) resilient communities and economies. Both small-scale pilot studies and large interdisciplinary research projects will be considered. PIs should focus on outcomes that can be achieved in a 24-month period. Maryland Sea Grant is particularly interested in proposals that have a clear **connection to the needs of management and policy** and include a clear **outreach plan** for disseminating that information to targeted audiences. We anticipate funding 6–8 projects at about \$70,000 per year per grant. 50% non-federal cost match is required for each proposal (\$1 match for every \$2 of Sea Grant funding). Maryland Sea Grant support is offered on an open, competitive basis. The full solicitation with instructions specific to the RFP will be maintained at <http://www.mdsg.umd.edu/funding-opportunities>.

Proposal Preparation and Submission Instructions

- **Webinar to discuss expectations for RFP and outreach:** December 20, 2016 at 2:00 PM EST
- **Preliminary Proposal (Pre-proposal) Submission:** Required, due January 27, 2017 at 5:00 PM EST
- **Full Proposal Submission:** Required, mid-June 2017 (Final date TBD)
- **Application Instructions:** This solicitation contains specific instructions on the format and content that must be adhered to in each proposal. Failure to follow the instructions outlined in the text below is grounds for rejection without review.

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Important Notes for Principal Investigators

- Funding of all proposals is contingent upon Maryland Sea Grant’s allocation from NOAA in the FY2018 and FY2019 federal budgets. Modification in the number of and funding for individual proposals may be made based upon the final program budget.
- PIs must provide a strong rationale for how their proposed research will affect policy and/or management decisions and how that information will be communicated outside of academia. A webinar to discuss expectations for an outreach component will be held on December 20, 2016 at 2 PM.
- A “**Data Management and Sharing Plan**” will be required in the full proposal (but not the pre-proposal). This will be an important component of the proposal evaluation and selection process. PIs should consider data stewardship funding needs as they develop their proposals. For more information, visit www.mdsq.umd.edu/data-management-and-sharing.

I. INTRODUCTION

The Maryland Sea Grant research, education, and outreach mission is to address gaps in the knowledge needed for science-based efforts to inform conservation, restoration, sustainability, and resilience in the Chesapeake and coastal bays and their watersheds. Federal and state concerns for the management of Maryland's coastal ecosystems have heightened in recent years. The 2009 Presidential Executive Order for Chesapeake Bay, the 2014 Chesapeake Bay Agreement, and the 2016 Maryland Greenhouse Gas Emissions Reduction Act focused renewed attention on critical needs in the region. Of special interest are issues related to reduction in nutrient and sediment inputs, resilience to climate change and natural hazards in coastal communities, and informing ecosystem-based management. Scientific and policy discussions concerning these issues emphasize the need for strong research input to help attain restored and sustainable Maryland coastal ecosystems. However, success also depends on linking research efforts with resource uses, economics, and human communities—from rural to suburban and urban areas.

Through the use of laboratory studies, field investigations, models, and/or socioeconomic studies, Maryland Sea Grant seeks research proposals that provide scientific and socioeconomic information that can inform policy decisions for fisheries management, climate change adaptation, coastal community resilience, and ecosystem restoration in coastal systems and communities in Maryland. We are particularly interested in proposals that are novel or exploratory, have a clear connection to management and policy, and link social and natural sciences research. PIs should focus on outcomes that can be achieved during a 24-month project period.

Projects must demonstrate a direct connection with users beyond academia, such as resource managers, citizen scientists, communities, and/or informal and formal learners. To that end, proposals must include a well-defined outreach plan for engaging and disseminating information to targeted audiences. **PIs are encouraged to engage and collaborate with extension specialists, end users, and other outreach specialists to develop a comprehensive outreach plan in the full proposal.**

II. MARYLAND STRATEGIC RESEARCH PRIORITIES

Sound policy decisions for Maryland's coasts and watersheds demand comprehensive scientific information to address the challenges of climate change, threatened fisheries resources, pollutant abatement, and unsustainable coastal uses. Effective coastal restoration and adaptive management require a broad understanding of many complex issues including coastal ecosystem function, watershed processes, climate resilience, social consequences, and economic opportunities in coastal communities (rural, suburban, or urban). Projects must demonstrate a connection between the proposed research and the focus areas and strategies (one or more) highlighted in this RFP. A proposal must demonstrate integration among its scientific approaches, research outcomes, and outreach plan. We encourage projects that are cross-cutting, integrative in scope, and couple social and natural sciences research.

Maryland Sea Grant is soliciting research proposals in the three focus areas highlighted in our 2018–2021 Strategic Plan:

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

Focus Area: Healthy Coastal Ecosystems

Promoting the sustainability of the Chesapeake and coastal bays and their watersheds requires science-based decisions about how and when conservation and restoration efforts can be most effective. To address conservation, restoration, and resilience of ecosystems, Maryland Sea Grant seeks proposals that investigate key ecosystem processes in our watersheds and coastal and marine waters and assess how they respond to changing conditions. Research proposals should consider appropriate temporal and spatial changes in ecological systems as they respond to changing conditions. This could include wetland function, changes at the land-water margin, water quality (e.g., nutrients, sediments, acidification), species composition, coastal / marine food webs, or land-use. Maryland Sea Grant encourages integrated research and outreach projects that address the following topics:

- Understand species responses (e.g. keystone, invasive, harmful algae) to environmental conditions
- Understand how changing coastal, estuarine, and watershed conditions (e.g., temperature, salinity, precipitation, wind, waves, nutrients, sediments, contaminants, heat, flooding) affect estuarine and coastal ecosystem function, resilience, and food web dynamics on multiple spatial and temporal scales
- Understand ecosystem responses to the effects of climate change, energy development, water quality, restoration and management actions, and other emerging issues through social and natural science research
- Determine how restoration efforts affect or are affected by changes in watershed, estuarine, and coastal conditions
- Develop and assess restoration and resiliency practices and their effectiveness to prevent and/or reduce loading of nutrients, sediments, and other pollutants within the watershed
- Support social, economic, and environmental research; synthesis; and statistical analysis to understand ecosystem change over time and to advance ecosystem-based management

Focus Area: Sustainable Fisheries and Aquaculture

An in-depth research foundation is critical for supporting ecosystem-based fisheries management, an approach we believe is essential for restoring and conserving sustainable fisheries and achieving profitable aquaculture in Maryland. Success will require work on many fronts, including investigations of species' population trends,

harvest targets, and the effect of harvests on ecosystems. On the social sciences side, developing a better understanding of the needs of multiple audiences with differing views and priorities regarding fishing sustainability, multiple uses, and regulation will be important for building support for effective fisheries management strategies. MDSG is interested in research, particularly small-scale projects, that yield focused products (e.g. models, tools, reference points) to inform management decisions and advance integrative approaches regarding important Chesapeake and coastal bay fish and shellfish species. Research should recognize the important link between the social and natural sciences in achieving effective natural resource management. Specifically, we invite proposals that address one or more of the following:

- Research on sustainable recreational and commercial fisheries and aquaculture and their effects on ecosystem function and restoration
- Natural and social science research on sustainable fisheries targets, economics, and ecosystem-based fisheries management
- Understanding important ecosystem issues for individual fisheries species and critical interactions between them with emphasis on projects that can lead to development of new tools for use by management
- Developing, refining, and applying models to improve understanding of Chesapeake and coastal bays fishery scenarios

Focus Area: Resilient Communities and Economies

The emerging need to adapt to the effects of climate change and meet new Total Maximum Daily Load (TMDL) requirements to limit nutrient and sediment pollution present unprecedented challenges for communities and local governments throughout the Chesapeake and coastal bays and their watersheds. Additionally, addressing energy, food, and water needs under changing climate conditions is likely to require comprehensive planning and adaptation across the region. Increased precipitation, nuisance flooding, and changing rates of sea-level rise—all anticipated consequences of climate change—require well-informed communities who understand these issues and are engaged in strategic decision-making to strengthen their communities. New energy technologies and efforts to reduce greenhouse gas emissions are likely to touch all sectors of the state. It is imperative that Maryland Sea Grant work collaboratively with our constituents to improve understanding of the socio-environmental relationships necessary to reach state and national goals in stormwater management and climate adaptation. In addition, we need to understand the societal constraints that influence policy directions and community engagement and action. Further, we continue our commitment to supporting research and outreach to both urban and rural communities who experience a paucity of resources and engagement on environmental issues.

PIs are encouraged to consider multi-disciplinary natural and social science research that focuses on understanding critical decision points in community and land use planning that affect coastal and watershed ecosystem resilience and consider the socioeconomic consequences of how communities may respond to climate change (e.g., restoration and adaptation strategies). Research proposals should offer clear,

well-designed plans to engage and transfer findings to communities, managers, planners, and industry. We invite proposals that address one or more of the following:

- Develop technologies and research-based strategies for sustainable and resilient communities, including such topics as stable shorelines, tourism, working waterfronts, and natural hazards
- Socio-economic research to understand and help coastal communities become more resilient
- Develop tools and strategies to engage with communities and decision makers regarding the risks from climate change and other hazards
- Understand the socioeconomic value and ecological consequences of water resources (e.g. water quality, water quantity) management options
- Understand the effects of land use on ecosystems and communities
- Develop models that evaluate ecological, economic, and/or societal responses to meet TMDL, Watershed Implementation Plan, and Best Management Practice requirements

III. AWARD AND ELIGIBILITY INFORMATION

A. Award Information

The award period for research projects is February 1, 2018 to January 31, 2020. We anticipate supporting 6–8 projects at about \$70,000 per award per year, contingent on availability of funds. Maryland Sea Grant requires 50% non-federal cost match for each proposal (\$1 match for every \$2 of Sea Grant funding). Only non-federal funds may be committed as matching contribution. Full federally-negotiated indirect cost rates are allowable. Note that pre-proposal budget estimates are expected to be realistic; a substantial increase in the final budget request will be viewed negatively and will likely result in rejection or budget cuts.

Historically, **50 percent** of investigators submitting a pre-proposal have been encouraged to submit a full proposal (though all investigators are welcome to do so) and about **30 percent** of full proposals are funded. Successful full proposals are forwarded to the National Sea Grant Office (NSGO) for final funding approval. Inclusion of a proposal in Maryland Sea Grant’s proposal package to the NSGO does not guarantee final approval or funding.

Approximately **60 percent** of the funded projects may receive a Maryland Sea Grant Research Fellowship (MDSGRF) to support one student for two years. However, because not all funded projects will be awarded a MDSGRF, PIs are expected to meet their grant obligations fully regardless of whether or not they receive a MDSGRF.

B. Eligibility Information

Principal Investigators (PIs) must be affiliated with an academic institution or research laboratory in Maryland or the District of Columbia. Co-Principal Investigators (Co-PIs) on projects can be from institutions outside of Maryland or the District of Columbia. Single investigators and multiple investigator research teams from different institutions are encouraged to apply. Maryland Sea Grant extension personnel are welcome to serve as Co-PIs or senior personnel but are restricted from requesting salary support. Maryland Sea Grant encourages participation from the broad science and social science research community within Maryland and the District of Columbia and invites participation by investigators new to the Maryland Sea Grant RFP process.

IV. SCHEDULE AND DELIVERABLES

A. Preliminary and Full Proposal Schedule

Request for Proposals issued	December 6, 2016
Pre-proposals due	January 27, 2017
Pre-proposals reviewed, PIs notified	Mid-April 2017
Guidelines for full proposals available	Mid-April 2017
Full proposals due	Mid-June 2017
Final proposal selection, PIs notified	Mid-September 2017
Omnibus proposal to NOAA	Mid-October 2017
Funding cycle	February 1, 2018 to January 31, 2020

B. Pre-proposal Deliverables

You must submit one electronic version of the complete pre-proposal online at <http://ww2.mdsg.umd.edu/rfp/submit/> (PDF format only). **The deadline is January 27, 2017 at 5:00 PM EST. The system will shut down automatically at the deadline, locking out late submissions. Pre-proposals received after the deadline will not be accepted.**

To submit a pre-proposal (or full proposal) through our online system, you must do the following:

- Make a PDF of all the required pre-proposal materials.
- Login to the proposal online submission system by following the link above.
- Complete the required fields. Note: the title for your pre-proposal will also be required for submitting a full proposal.
- Upload the proposal PDF using the browse button.
- Press the submit button.

Upon submission, PIs will receive web page and email confirmation. PIs are encouraged to print a copy of this confirmation for their records.

If you do not have web access, please contact the Maryland Sea Grant Office.

V. PRE-PROPOSAL PREPARATION INSTRUCTIONS

Pre-proposals should present a succinct but sufficiently detailed synopsis of the project in order to evaluate its relevance to the Maryland Sea Grant Strategic Plan, its technical feasibility, and the PIs' qualifications. Pre-proposals are not letters of intent and will be evaluated rigorously in a highly competitive process. Pre-proposals should include a description of the problem (question(s) to be addressed), rationale for the research, methodologies and tools to be used in the effort, and benefits likely to be derived from the anticipated results.

A. Pre-proposal Components

PIs must follow the instructions regarding pre-proposal components as explained in this document or risk pre-proposal rejection.

Each pre-proposal must include the following components in this sequence:

- Cover sheet
- Project narrative (major headings), Limited to 3-pages, single-spaced:
 - Abstract
 - Introduction/Background/Rationale
 - Objectives
 - General Approach and Methods
 - Anticipated benefits
 - Facilities and equipment
 - Personnel description and roles
 - Budget Estimate
- References
- Outreach plan, Limited to 1-page, single-spaced
- Curriculum vitae, 2-page limit per PI/Co-PI

B. Formatting

Use Arial font type, size 12-point or greater. **Use single spacing**, left justified only, and one hard return between paragraphs. All margins should be 1 inch. The project narrative of the pre-proposal should be typed continuously (that is, do not start a new page for each new section). The end matter, including the *References*, *Outreach plan*, and *Curriculum vitae* should each start on new pages and are not included in the 3-page single-spaced limit required for the project narrative. The first page of the project narrative should be numbered 1, and numbering should continue throughout the proposal. Please save the completed pre-proposal as a PDF to upload to our online pre-proposal submission system.

C. Explanation of Pre-proposal Components

COVER SHEET

Include the pre-proposal title and full contact information for the PIs/Co-PIs on the cover sheet. We do not require that pre-proposals be routed through campus' research administration as no binding financial commitments are required.

PROJECT NARRATIVE

The body of the pre-proposal (excluding references) is limited to **three pages of single-spaced text and graphics**. Write your pre-proposal using the headings in the sequence listed in this document and following the formatting instructions above.

Abstract

Briefly summarize the proposed project objectives, methodologies, and rationale clearly and concisely. Emphasize the importance, relevance, application, and value to Maryland Sea Grant constituents. Limit the abstract to 300 words.

Introduction / Background / Rationale

Indicate the specific problem addressed by the proposed effort and provide sufficient background information to allow a preliminary assessment of the relationship of the problem to the research questions posed in this RFP.

Objectives

State the objectives of the research effort as they would appear in a full proposal. Research hypotheses, if relevant, should be clearly stated.

General Approach and Methods

You need not explain methods in detail. However, readers should be able to make a preliminary determination of the appropriateness of the proposed approach, including statistical analyses, for achieving the stated objectives.

Anticipated Results and Outcomes

Briefly explain the anticipated results and potential implications of those results in relation to Maryland Sea Grant program objectives.

Facilities and Equipment

List any facilities or equipment currently available and/or necessary for conducting the project. Give a justification for any equipment requested.

Personnel Description and Roles

List names of PI(s), senior technical staff, outreach personnel, and students (if appropriate) and briefly outline their roles and interactions in the project.

Budget Estimate

This pre-proposal budget estimate is a non-binding statement of your total funding request. Please provide in this section of the pre-proposal only your estimate of the

dollar amount of your total funding request with a statement acknowledging your understanding that a 50% non-federal match on the total funding request is required. Please remember that your total budget estimate should include any indirect costs required by your institution. Substantial (>10%) deviations from the pre-proposal budget estimate at the full proposal stage are discouraged without prior consultation with MDSG. Further, Maryland Sea Grant recognizes that this pre-proposal budget estimate is not a commitment on behalf of your institution. **Please note here if you plan to participate in the separately funded competition to add a Maryland Sea Grant Research Fellow to your project.** Fellowships will be awarded to funded projects competitively, with approximately 60% of projects receiving a fellow.

REFERENCES

List references on a separate page. Reference pages are not included in the three-page maximum for the project description.

OUTREACH PLAN

The outreach plan should explicitly describe how the proposed research will **link to policy and/or management decisions** and how the results of the study will be **translated** for end-users outside of direct scientific peers. There should be a clear connection between the proposed research emphasis(es) and possible policy/management outcomes or behavior change. The section should include how PIs will connect or partner with users, specifics about the user(s)/partner(s), how their needs integrate with the research project, and how the partners will be engaged in the research. The description should explain how the PI intends to inform and advise interested parties outside of academia about how the research findings could help inform specific policy and management actions. Outreach efforts may also include working with K-12 education and informal learner partners through specific lesson building and teacher training activities or community engagement. Potential tools or technologies that may arise from this research and be applied to audiences outside of academia should be noted. A detailed discussion of project outreach is available at: <http://www.mdsg.umd.edu/share-your-research>. This section is limited to **one page**.

Investigators are strongly encouraged to contact the Maryland Sea Grant office to discuss potential outreach approach and audiences (including industry, policy-makers, the broad researcher community, and the public) and take part in our outreach webinar to be held on December 20, 2017. **Discussions with Maryland Sea Grant Extension Program faculty or other outreach partners are encouraged in the early stages of pre-proposal development.** Extension faculty may contribute to projects or direct you to other appropriate partners. A list of Maryland Sea Grant Extension personnel can be found at: <http://www.mdsg.umd.edu/our-office>. A more detailed outreach plan (and outreach budget, if appropriate) is required for the full proposal.

CURRICULUM VITAE

Provide a **2-page** (maximum) curriculum vita for each of the PIs and Co-PIs. We request you use the National Science Foundation Biographical Sketch format. Explicit guidance can be found in NSF's Grant Proposal Guide:

https://www.nsf.gov/pubs/policydocs/pappg17_1/pappg_2.jsp#IIC2f. An example can be found at <http://www.mdsg.umd.edu/proposal-forms-and-worksheets>.

VI. FULL PROPOSAL PREPARATION GUIDANCE

Investigators interested in submitting a full proposal will have electronic access to *Guidelines for Preparing the Full Proposal*, which contains information on content, format, and necessary forms for full proposals. In early spring the guidelines will be available to download from our web site at: <http://www.mdsg.umd.edu/funding-opportunities>.

VII. PROPOSAL REVIEW PROCESS

A. Pre-proposal Review

Maryland Sea Grant will conduct an extensive review to determine those submissions best qualified to compete for inclusion in the 2018–2020 Maryland Sea Grant College Omnibus funding request to NOAA. After the review process is completed, Maryland Sea Grant will contact all PIs who have submitted pre-proposals. Those PIs whose pre-proposals review favorably will be encouraged to submit full proposals.

Pre-proposals will be evaluated based on the following criteria:

- Scientific and technical feasibility of the proposed study
- Relevance, as articulated in this RFP, as well as the goals and strategies of the Maryland Sea Grant Strategic Plan: 2018–2021
- Planning and potential for significant outreach activities during the project
- Feasibility of the project within the proposed budget and timeframe
- Principal investigator's expertise and publication record
- Use of collaborative or multidisciplinary teams where appropriate
- Leveraging of Sea Grant resources through coordination and collaboration with other programs and funding sources
- Appropriateness of Sea Grant support relative to support from other sources

Pre-proposals will be evaluated by:

- External electronic reviewers
- Maryland Sea Grant Extension agents and specialists
- Maryland Sea Grant's Academic Advisory Committee (provides final consensus recommendations based on all evaluations)

B. Full Proposal Review

After full proposals are received, they will be sent out for external electronic review. In addition, an external review panel and an extension panel will be convened consisting of researchers and faculty with expertise in the disciplines represented by proposals

under consideration. Based on the expert panel's review, external written reviews, and extension panel reviews, the expert panel will recommend a set of proposals for Maryland Sea Grant to consider for funding. The specific criteria for these reviews will be laid out in the full proposal guidelines.

Depending on funding constraints and reviewers' comments, Maryland Sea Grant may ask PIs to revise their proposed budgets and scope of work, for example, by considering modifications to a proposed study.

Data and Publication Sharing Plan Required in the Full Proposal

In 2013, the federal government began requiring that data and publications from federally supported research be made accessible to the public. NOAA is requiring Sea Grant programs to have mechanisms in place to meet these data access requirements. As part of the full proposal, PIs will be required to include a "Data Management and Sharing Plan" in the full proposal. These plans must demonstrate that data are being archived and made publicly available, typically within two years of creation and consistent with federal and university policies. A data management plan will not be required until the full proposal stage; at the pre-proposal stage, PIs should consider if funds are needed for this task and include this in the project pre-proposal and full proposal budgets. More details regarding NOAA and MDSG data management obligations are available in the *Guidelines for Preparing a Full Proposal* and at: <http://www.mdsg.umd.edu/data-management-and-sharing>.

What is meant by "environmental data"?

Environmental data are recorded and derived observations and measurements of the physical, chemical, biological, geological, and geophysical properties and conditions of the oceans, atmosphere, space environment, sun, and solid earth, as well as correlative data, such as socio-economic data, related documentation, and metadata. Media, including voice recordings and photographs, may be included. Numerical model outputs are included in this definition, particularly if they are used to support the conclusion of a peer-reviewed publication. Data collected in a laboratory or other controlled environment, such as measurements of animals and chemical processes, are included in this definition.

VIII. AWARD ADMINISTRATION INFORMATION

A. Notification of the Award

Notification of the award is made to the submitting organization by Maryland Sea Grant. Organizations whose proposals are declined will be advised as promptly as possible. Anonymous copies of reviews will be provided to the Principal Investigator.

B. Reporting Requirements

As part of all award agreements, Maryland Sea Grant and NOAA require mandatory annual financial and progress reports and a final report to evaluate the project. Grant money may be withheld pending completion of reports as outlined in the project terms and award conditions.

IX. CONTACTS AND ADDITIONAL INFORMATION

For further information about this RFP, please contact:

Maryland Sea Grant College, 4321 Hartwick Road Suite 300, College Park, MD 20740
(301) 405-7500

- Fredrika Moser, Director: moser@mdsg.umd.edu
- Mike Allen, Associate Director for Research and Administration:
mallen@mdsg.umd.edu
- Jenna Clark, Program Specialist: research@mdsg.umd.edu

A list of Maryland Sea Grant Extension agents and specialists can be found at the following website: <http://www.mdsg.umd.edu/programs/about/staff>.

The Maryland Sea Grant College is a partnership between the National Oceanic and Atmospheric Administration (NOAA) and the University System of Maryland. We are administered by the University of Maryland Center for Environmental Science. To learn more about Maryland Sea Grant's mission, previously funded research, or other funding opportunities, visit <http://www.mdsg.umd.edu>.