



Science and Resilience Institute at Jamaica Bay  
2017 Summer Fellowship Program  
*Connecting Science and Decision-Making*  
Request for Applications

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Deadline: May 16, 2017, 5pm EST

In the summer of 2017, the Science and Resilience Institute at Jamaica Bay (Institute) Fellowship Program will award funds to a limited number of undergraduate and graduate students enrolled in our partnership institutions. Awards will be given to students who propose innovative research projects that promote the resilience of Jamaica Bay and its surrounding communities. The goal of this Fellowship Program is to improve the ability of students to pursue environmental careers through experiential learning and hands-on training in using science to manage coastal urban areas.

The Institute works with different groups – coastal communities, public agency decision-makers, research networks – to produce integrated knowledge that can be used to increase biodiversity, adaptive capacity, and well-being in Jamaica Bay and surrounding waters. Hosted by CUNY - Brooklyn College, the Institute maintains core partnerships among the National Park Service (NPS), the City of New York (NYC), and a consortium that includes the City University of New York (CUNY), Columbia University, Cornell University, Rutgers University, New York Sea Grant, Stevens Institute of Technology, Stony Brook University (SUNY), and the Wildlife Conservation Society.

A critical component of the Institute's mission is to make credible science relevant and useful for communities and decision makers. Institute Fellowships provide formative experience and formal education and training in connecting science to environmental decision-making. Summer Fellows will design, engage in and catalyze transdisciplinary research, while building new partnerships across the Institute's research network. In exchange, the Institute aims to create new pathways and opportunities for careers in the environment. For more information about SRIJB research and engagement activities and key partnerships, please visit [www.srijb.org](http://www.srijb.org).

### ***I. Priority Areas***

Applicants will propose activities that reflect the priority areas below. Projects scoped through this funding will be affiliated with the Institute, and in return, the Institute will reconcile proposed research ideas with management and community needs; help establish collaboration with relevant researchers, agency partners, and stakeholders (where needed); and identify additional funding where possible. Projects should be focused on and/or located within the Jamaica Bay watershed.

#### *Assessment of Jamaica Bay Natural Areas*

In 2014, the Natural Areas Conservancy completed a 10,000-acre assessment of the social uses and ecological conditions of New York City's municipal natural parkland. In 2016, the NAC collaborated with the SRIJB and Brooklyn College to extend the assessment study to National Park Service (NPS) property contained in the Gateway



National Recreation Area (GNRA) units in Jamaica Bay. This initiative was undertaken to quantify the health of uplands, forests and wetlands in all five boroughs across jurisdictional boundaries. Results of this work are being used to prioritize and set strategic goals for management of these public assets. NAC's priority for 2017 in Jamaica Bay is to continue assessment work in the remaining NYC Park's natural areas. Specifically, data will be collected on vegetation composition and abundance at all structural levels, litter depth, soil condition and sampling, human impacts, animal herbivory, canopy closure, and tree health.

### *Measuring and Monitoring Natural and Nature Based Features*

Coastal managers are increasingly experimenting with nature-based shoreline strategies as a way to improve coastal habitat while also reducing flood risk. However, the impacts and benefits of nature-based shoreline strategies to ecosystems, communities, and flood risk reduction are not widely understood. There is both a lack of understanding of the current benefits and how well these benefits meet the challenge of a changing climate, marked by impacts such as incremental and extreme flooding exacerbated by sea level rise and extreme weather. Targeted research and monitoring of planned and implemented nature-based coastal features will help develop best practices and standards for the permitting and implementation of these shoreline designs in the future. The popularity of this topic has led to a recent proliferation of planning activities, guides, frameworks and best practices. Priorities for 2017 include a synthesis and analysis of existing frameworks to contribute to baseline knowledge in pursuing future monitoring protocols.

### *Water Quality Monitoring Gaps*

Understanding status and trends in Bay water quality is fundamental to assessing the impacts of management changes within the Bay water and sewer sheds as well as ecological response to management, climatic and environmental change. Long-term water quality monitoring must include the appropriate metrics as well as spatial and temporal distribution to support evaluation of management decisions and ecological changes. Researchers at Brooklyn College's Aquatic Research and Environmental Assessment Center (AREAC) and Columbia University's Center for International Earth Science and Information Network (CIESIN) recently completed the [Jamaica Bay Water Quality Tool](#) that provides on-line public access to NYCDEP and NPS water quality monitoring data. In addition, NPS Northeast Coast and Barrier Inventory and Monitoring Network conducts biannual estuarine nutrient enrichment monitoring (<https://science.nature.nps.gov/im/units/ncbn/publications.cfm?tab=1> and <https://science.nature.nps.gov/im/units/ncbn/publications.cfm?tab=2>). Additionally, recent work on identifying research and monitoring needs by the Institute reveals a general lack of long-term monitoring on the health of benthic habitat in Jamaica Bay, particularly from point sources along the shoreline, that might be used for future impact and risk assessment. Evaluating the gaps and overlaps between these three independent



programs, as well as new and emerging data needs, and working with core partners of the Institute (agency and researchers) to optimize future monitoring effort is critical to ensure long-term monitoring in an era of limited agency resources.

#### *Fort Tilden Visitor Use and Capacity*

Visitor use patterns at Fort Tilden have changed dramatically over a very short time. The park's General Management Plan (2014) Tilden as an area of the park where visitors can have a more natural experience with few visitor amenities. However visitor use volumes, patterns, and behaviors may cause unacceptable impacts to park resources, visitors' experiences, and park facilities, and strain operational, staffing, and administrative capacities. Yet, the park lacks data regarding the amounts and types of visitor use at Fort Tilden during peak periods to systematically and scientifically assess when, where, and to what extent visitor use impacts occur. A fellowship project could develop scientifically rigorous, quantitative information about the types, amounts, and patterns of visitor use and/or visitor impacts at key locations at Fort Tilden during peak periods and identify/inform when and where visitor use management strategies, alternative transportation, facility improvements, additional staffing, and/or operations enhancements may be needed to protect park resources and visitor experiences.

#### *Impact of Marsh Island Restoration on Avian distribution and abundance in Jamaica Bay*

From 2005 to 2017, seasonal avian point count data has been collected at restored (Elders East 2005-2012, Elders West 2010-2014, Yellow Bar Hassock 2012-2016 and Rulers Bar and Black Wall 2013-2017) and reference (JoCo 2005-2017) marshes. Data includes species composition, abundance, location and behavior (in flight over water, wading in water, in flight over marsh, on marsh, in flight on shore). Data are currently summarized annually for species composition and abundance reporting; however, no further analysis is currently within scope of project funding and park staff capacity. With the location of JFK airport, the impact of marsh restoration on avian community composition, abundance and distribution has been a critical factor limiting marsh island restoration in the eastern half of Jamaica Bay. Thus a more comprehensive analysis of this data set to understand impacts of restoration on composition, abundance and distribution of Jamaica Bay avian community can inform future management decision and long-term avian monitoring needs in the bay.

#### *Art, Culture & Participatory Engagement*

Art, culture and participatory engagement practices can catalyze movement towards more just, sustainable and resilient futures. Scientists and public policymakers are becoming more aware how culture can help achieve sustainability and resiliency goals. Meanwhile, an increasing number of artists, cultural leaders and community based organizations are seeking to address climate change in their work. As the Science and Resilience Institute



at Jamaica Bay increases its role as a convener between groups with different perspectives and knowledge, we are interested in exploring our role in this space. What models for creative engagement are best suited to create sustained, transparent and equitable dialogue in Jamaica Bay? Working with SRIJB staff, the 2017 fellowship offers an opportunity for fellows to develop research, design programs, and develop partnerships with community-based organizations to further this work.

### *Building Centralized Access to Distributed Data and Tools*

One of the Institute's goals is to increase awareness and understanding about Jamaica Bay among local stakeholders, community groups, researchers, and other practitioners by offering expanded access to data and information. The Institute is working with partners to address a common challenge related to accessibility, familiar to many coastal urban areas: *allowing individual data collection and analytical tool development efforts to occur, while also streamlining access to multiple audiences.* The Institute seeks Fellows who can help design a Jamaica Bay portal that can aggregate, cross-walk, and cross-link a clearinghouse of content through a contextualized interface for targeted publics. A common centralized data portal, developed with Institute partners, will increase and streamline accessibility to datasets; provide a platform for data coordination, integration, and standardization; and improve communication about activities, research and capital projects, and studies in the Bay. Fellows working on this priority area might expanding the portal concept and vision by identifying stakeholder and partner needs and resources as well as database portal design and construction strategies; reviewing current literature on information technology, communications, and relational database design and management (including geospatial databases); and engaging in an informal information gathering process through interviews with partner agencies and organizations.

## ***II. Sponsors***

Each Fellow is required to have a sponsor. The primary role of the sponsor is to serve as a mentor to a Fellow as they carry out their proposed project activities. Sponsors can be either academic researchers and/or faculty, representatives of public agencies, or representatives of community groups. In most cases, sponsors are likely to be academic advisors to the Fellow's undergraduate or graduate research or faculty mentors in the Fellow's degree track. However, public agency or community representatives can also serve as sponsors, provided the applicant also includes a letter of support from their academic advisor or a faculty mentor. Community representatives should be affiliated with a non-profit organization with a mission and focus complementary to that of the Institute, which should be explained in the letter of support. Additionally, in their letters of support, all sponsors should detail how they will provide mentoring and supervision, adequate workspace, access to information and human resources to accomplish the project activities, and any match funding or in-kind resources. Sponsors are not required to provide match funding, but it is strongly encouraged.



### ***III. Institute Resources***

The Institute will provide funding, additional mentoring (see next section), access to equipment, and background information in support of project activities. Fellows will have access to our broad network of scientist, agency and community affiliates, as well as access to Institute office workstations, software, and accessory equipment. Fellows will also be permitted to use the research facilities at the [Brooklyn College department of Earth and Environmental Sciences](#), the 65' catamaran *CUNY I* (the Institute's research and education vessel), and our 19' Carolina skiff (INSERT LINK) - for data collection and analysis. The Institute will offer reduced charter fees for use of either vessel. Though charter fees can be covered from the Fellowship award, we encourage the applicant's research or work sponsor to help defray this cost. Research equipment for use on either boat may be furnished by the applicant or their sponsor.

### ***IV. Program Schedule***

The Fellowship program begins on June 12<sup>th</sup> with a week-long mandatory orientation and training on *Connecting Science and Decision-Making* at the Institute's base of operations on the Brooklyn College campus. Orientation and training week will run approximately 4 – 5 hours each day, with guest speakers, group discussion, and learning activities scheduled throughout. Once or twice during the week, the Institute will lead field trips to Jamaica Bay. Topics for the orientation include: science policy in the United States, the role of science in decision making, methods of organizing engagement between scientists and decision makers, science communication, and a primer on resilience in Jamaica Bay. Fellows will be provided light reading material on each of these topics for the day's activities. The Institute will provide a more in-depth set of references for further education and research in each of these areas. The last day will provide opportunities for refining individual plans for the remainder of the Fellowship.

For the remainder of the summer, Fellows will work under the guidance of their sponsor at their academic institution, public agency or community partner's office. Throughout the summer, fellows will be invited to participate in and share their work at Institute events (e.g. site visits, lectures, and opportunities). These opportunities will be part of finalizing their project approach during the last week of the training and orientation. A limited number of workspaces are also available at the Institute's offices at Brooklyn College. The Institute is committed to working with each candidate to identify and accommodate an appropriate working environment. Fellows are required to submit an interim progress report and final narrative report, and will present their findings to a broad audience of SRIJB affiliates at the concluding celebration in the fall 2017. All project activities must be completed no later than August 25<sup>th</sup>.



## ***V. Eligibility***

- 1) Applicants must be enrolled as an undergraduate or graduate student in an organization named above as a core partner of the Institute (see second paragraph). Students graduating in Spring 2017 are also eligible.
- 2) Applicants must have an identified sponsor.
- 3) Applicants must attend the *Connecting Science to Decision Making* training and orientation week June 12<sup>th</sup> through 16<sup>th</sup>.
- 4) Applicants must be available to complete all proposed project activities and deliverables within the Fellowship period (6/12 - 8/25).
- 5) Sponsors must have adequate availability to support and guide the Fellow in achieving project goals and deliverables by the end of the Fellowship.
- 6) Applicants must be eligible to be employed by the Research Foundation of CUNY. In some cases, visa holding foreign national students may only be eligible for employment through their sponsoring employer or organization and therefore would not be eligible for this Fellowship.
- 7) All students must have their employment eligibility verified through the I-9 and e-verify processes prior to initiating the Fellowship.

## ***VI. Proposal Structure***

Applications should include the following components:

- A. Cover Letter (1 page) – a cover letter describing the value of the Fellowship to your career development, including your personal and professional interests and aspirations beyond the Fellowship.
- B. Relevance (1 page) – indicate which of the priority areas your research will address. Include a problem or issue statement with a description of how the problem relates to resilience in Jamaica Bay and describe the need for solutions to increase adaptive capacity, well-being, or biodiversity.
- C. Goals and Objectives (1/2 page) – a discrete set of goals and objectives for the proposed Fellowship activities.
- D. Project Approach (2 page max) – a draft description of your proposed activities. Applicants can refine this approach after the orientation and training. However, they should illustrate sound research methods and/or innovative thinking in social engagement or communications. For activities that include data collection, applicants should explain how quality assurance and control will be performed, and how the data will be made publicly available via the Institute and/or other means.
- E. Products and Outcomes (1/2 page) – a draft description of the expected products and/or outcomes of your work, how the products and/or outcomes meet the project goals and objectives, and whether the project approach will support the expected products and/or outcomes.



- F. Timeline (1/2 page) - a timeline of project activities, milestones, and deliverable dates, including submission of a midterm progress report and final narrative report.
- G. Budget description (1/2 page) – a description of or table on how you will use your funding to support your project, including a preliminary estimate of personnel, travel, meeting/workshop costs, equipment, and/or materials. Any amount of in-kind or cash match will review favorably. **Please note** that Fellows are responsible for using their award to cover project costs. The Institute will not issue payment or reimbursement to vendors, contractors, or any individuals other than the recipient Fellow.
- H. Curriculum Vitae or Resume (1 page)
- I. Letters of Recommendation and Support (3 pages max) – letters from a research or work sponsor, indicating how often they will meet with the Fellow and what types of mentoring support they will provide.

### ***VII. Award Availability***

We anticipate a total of up to ~\$50,000 available for this Fellowship opportunity, to support a maximum of 10 Fellows. The number of awards will depend on the availability of funding and the strength of the applications. Each Fellow will receive \$5,000 for stipend, travel, equipment, and any other expenses associated with their proposed project. Fellows will be notified of their acceptance by Friday May 26<sup>th</sup>.

### ***VIII. Selection Criteria***

All eligible applications will be evaluated by a panel of experts from academia, public agencies, community stakeholders, and non-academic experts in resilience. Panelists will score each proposal based on the six criteria below on a scale from 1 to 5. The scores from each individual criteria will be averaged, and the final ranking will be based on the average scores of all proposals. Any proposal with an average score of 3 or less will not be considered for funding. The Institute will make a final determination on the number and type of awards from final ranking.

Evaluation criteria for the overall application, and the most relevant section of the application, are listed below.

- Career Development – the value of this experience to their career development and how they expect to apply this experience beyond the fellowship.
- Relevance – the extent to which the problem statement, goals and objectives are clearly stated and address the priority areas stated in this request for applications.
- Rigor – the extent to which the project approach is:
  - Based on sound research, scientific methods, and/or innovative thinking.
  - Builds or enhances collaboration within and across Institute partners.



- Provides a clear rationale for why, how, when, and to what extent decision makers and communities are engaged in various stages of the proposed project.
- Qualifications – The applicant has or is pursuing experience, expertise, and/or credentials relevant to the activities described.
- Mentoring – The strength of the research or work sponsor’s involvement and time commitment as described in the letter(s) of support.
- Leverage – The ideas and activities are likely to evolve into larger projects or fundraising activities for the Institute and/or Jamaica Bay.

### ***IX. To Apply***

Applications should not exceed 10 pages, using 12-point font and 1-inch margins. All applications should be provided as Adobe PDFs to [info@srijb.org](mailto:info@srijb.org) by 5 pm May 16, 2017. Late or incomplete applications (see Proposal Structure) will not be considered for review. While not necessary, for applicants using figures or graphics, please make sure the file size of your application does not exceed 10 MB. Applications should be clear, concise, and free of technical jargon, unless clearly explained.

### ***X. Submission Timetable & Key Dates***

Complete applications must be sent to [info@srijb.org](mailto:info@srijb.org) no later than 5:00 pm on May 16, 2017.

Fellowship Period	June 12 <sup>th</sup> through August 25 <sup>th</sup> 2017
Deadline for Applications	May 16, 2017
Applicant Notification	May 26, 2017
Training & Orientation Week	June 12 – 16, 2017
Public Presentations	September or October, 2017 TBD

### ***XI. Contact***

Please direct any questions to: [info@srijb.org](mailto:info@srijb.org).