



Annual Report

July 1, 2024 - June 30, 2025

FY25

A Letter from the Director



This past year has been one of tremendous growth and accomplishment for the Institute. We successfully completed our transition to becoming a formal CUNY-wide institute and strengthened our partnerships through the adoption of new bylaws. We welcomed a new cohort of 3 PhD student fellows and provided research opportunities for 35 graduate and undergraduate students from 12 colleges and universities. We also continued to lead on advancing the application of nature-based solutions in New York City and beyond through research and convening of expertise. From our inception, the role of the Institute has been to address the problems and needs of New York City through collaborative, interdisciplinary research, education and engagement. Our work and accomplishments in Fiscal Year 2025 exemplified this role and we look forward to even more successes in the next fiscal year.

This year also marked moments of transition. After ten years of dedicated service, Sandra Clarke retired from her role as Executive Administrator. Sandra's warmth, efficiency, and care helped make the Institute a welcoming home for all who passed through our doors. We also said farewell to Staff Scientist Kris Mielenhausen, whose expertise was instrumental in advancing our collaboration with the NYC Department of Environmental Protection on evaluating nature-based solutions for water quality improvement. Kris has taken on a new role with the Seatuck Environmental Association, and we wish him the best in this next chapter. We are grateful to both Sandra and Kris for their contributions to the Institute.

Fiscal Year 26 is already shaping up to be another highly successful year and we look forward to taking on new challenges.

Warm Regards,

A handwritten signature in black ink that reads "Brett Branco".

Brett Branco, PhD
Executive Director, Science and Resilience Institute at Jamaica Bay
Earth and Environmental Science, Brooklyn College & CUNY Graduate Center



We advance a more resilient future for New York City by connecting science, policy, and community leadership.

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Our Partners in Resilience

At the Science and Resilience Institute at Jamaica Bay, we collaborate with a wide network of partners to help change the tides – both literally and figuratively. Thank you to everyone we worked with on projects this year!

Environmental & Community-Based Organizations

- American Littoral Society
- Canarsie Community Development Inc.
- Eastern Queens Alliance
- Fresh Creek Civic Association
- Good Old Lower East Side
- Jamaica Bay Ecowatchers
- Jamaica Bay–Rockaway Parks Conservancy
- National Park Conservation Association
- New Hamilton Beach Civic Association
- New York City Environmental Justice Alliance
- RISE (Rockaway Initiative for Sustainability and Equity)

Professional & Technical Partners

- Environmental Policy Innovation Center (EPIC)
- Hazen and Sawyer
- Network for Engineering with Nature
- New York - New Jersey Harbor and Estuary Program
- Ramboll
- SCAPE Landscape Architecture DPC

Government Agencies & Offices

- National Park Service - Gateway National Recreation Area
- NY Department of State
- NYC Department of Environmental Protection
- NYC Mayor’s Office of Climate & Environmental Justice
- NYC Mayor’s Office of Technology and Innovation
- NYC Parks
- US Army Corps of Engineers
- USDA Forest Service

Academic Institutions

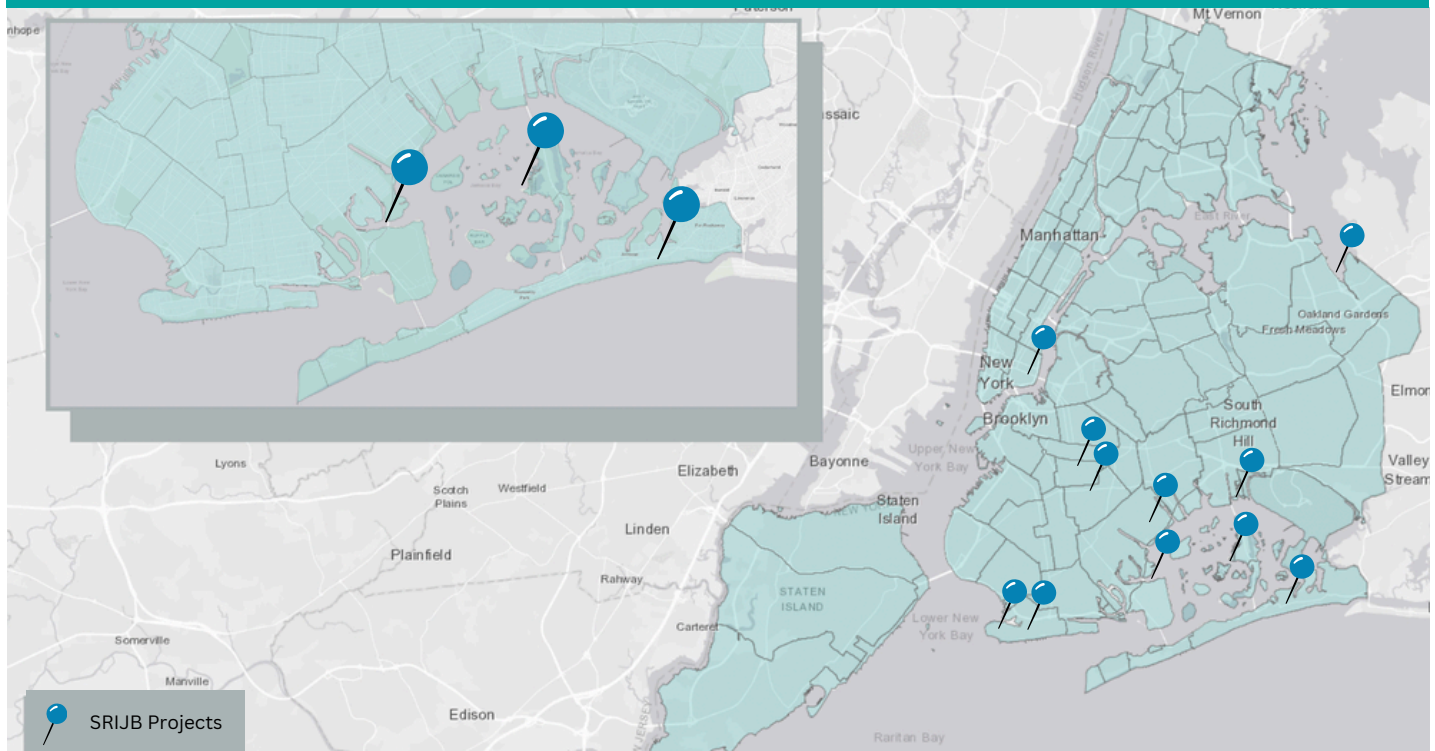
- Baruch College
- Brooklyn College
- Cornell Cooperative Extension of Suffolk County
- CUNY Advanced Science Research Center
- CUNY Graduate Center
- Hunter College
- Kingsborough Community College
- New York Sea Grant
- New York University
- Queens College
- Stony Brook University
- University of Georgia

About the Science and Resilience Institute at Jamaica Bay

The Science and Resilience Institute at Jamaica Bay (SRIJB) is a collaborative research and engagement center dedicated to advancing the ecological health and community resilience of Jamaica Bay and New York City's coastal regions. An institute of the City University of New York (CUNY) hosted by Brooklyn College, the SRIJB brings together researchers, community partners, public agencies, non-profits and the private sector to co-produce knowledge, advance innovative adaptation and restoration solutions, and support neighborhoods on the frontlines of climate change.

SRIJB was founded in 2013 in the wake of Hurricane Sandy, when the storm's devastating flooding exposed both the vulnerabilities of New York City's coastal infrastructure and the resilience of its communities. Recognizing the urgent need for science that could inform equitable recovery and long-term climate adaptation, federal, city, state, and academic partners joined forces to establish SRIJB as a hub for actionable science and inclusive collaboration.

SRIJB Active Project Sites in Jamaica Bay and NYC



The map above highlights locations across Jamaica Bay and New York City where SRIJB is actively leading or supporting place-based projects. These points represent individual initiatives focused on research, education, and resilience planning. Citywide initiatives are not shown here.

Key Publications from SRIJB & Affiliated Faculty

Mydlarz, C., Challagonda, P. S. V., Steers, B., Rucker, J., Brain, T., Branco, B., Eisler Burnett, H., Kaur, A., Fischman, R., Graziano, K., Krueger, K., Ignace, V., Jozwiak, E., Hénaff, E., Palchuri, J., Pierone, P., Rothman, P., Toledo-Crow, R., & Silverman, A. I. (2024). FloodNet: Low-cost ultrasonic sensors for real-time measurement of hyperlocal, street-level floods in New York City. *Water Resources Research*, 60, e2023WR036806. <https://doi.org/10.1029/2023WR036806>

Ghanbari, M., Dell, T., Saleh, F., Chen, Z., Cherrier, J., Colle, B., Hacker, J., Madaus, L., Orton, P., & Arabi, M. (2024). Compounding effects of changing sea level and rainfall regimes on pluvial flooding in New York City. *Natural Hazards*, 120, 6377–6400. <https://doi.org/10.1007/s11069-024-06466-8>

Anadón, J. D., Piñeiro, O., Ruhi, A., Hornstein, J., & Waldman, J. R. (2024). Decoupled shifts of dominant and rarer fish species as a response to warming and extreme events in a large estuary. *Ecosphere*, 15(7), e4876. <https://doi.org/10.1002/ecs2.4876>




Members of the SRIJB

Jamaica Bay Rockaway Parks Conservancy
 Jamaica Bay Ecowatchers
 New York City Department of Environmental Protection
 New York City Department of Parks and Recreation
 Gateway National Recreation Area, National Park Service
 Kingsborough Community College
 Brooklyn College
 Queens College
 Hunter College
 New York Sea Grant

Core Affiliated Faculty & CUNY PIs

Jennifer Cherrier
 Brett Branco
 Chester Zarnoch
 Gregory O’Mullan
 Dianne Greenfield
 Peter Groffman
 Phillip Staniczenko
 Ken Gould
 Tammy Lewis
 Katherine Fry
 Ricardo Toledo Crow

SRIJB Through the Numbers

			
\$10,692,974	89	9	37
Active Research Funding	Students Engaged	Active Funded Projects	Collaborating Organizations

Our Pillars of Impact

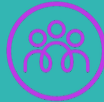
A framework for understanding how we work toward climate resilience

How We Define Impact

At the heart of our work are four interconnected pillars that reflect our commitment to environmental justice, ecological restoration, and community resilience. Look for the badges throughout this report to see how each project contributes to these goals.

Community Resilience

We build local capacity by sharing tools, supporting collaboration, and grounding knowledge in lived experience.



Flooding

We study and monitor coastal and urban flooding to inform community-led responses, planning, and policy action.



Nature-Based Solutions

Encourage natural infrastructure to reduce climate risks and support ecological and community health.



Urban Ecology & Environment

We study urban ecosystems to understand environmental change and support healthier, more resilient communities.



While our pillars define what our work addresses, our buckets describe how we do the work. Every project lives in one of these three categories. From field-based research to student mentorship, these buckets shape our strategy.

- **RESEARCH & ENGAGEMENT:** We collaborate with scientists, agencies, and communities to investigate and address real-world environmental challenges. Projects may involve fieldwork, co-designed data collection, or planning support.
- **EDUCATION & TRAINING:** From university seminars to workshops in the field, we build awareness and share tools for resilience.
- **STUDENT FELLOWS:** Our student programs connect emerging scholars to climate and environmental justice work through mentorship and research.

Research & Engagement

is how the institute builds power with communities. By combining science and lived experience to drive solutions and shape a more just, climate-resilient future.





Beyond HATS: Exploring Opportunities for Advancing Flood Risk Reduction around Jamaica Bay

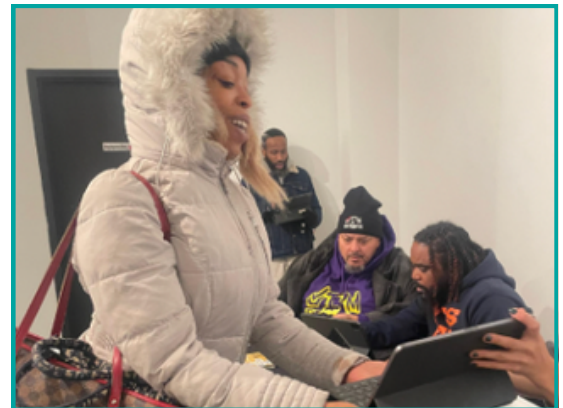


The SRIJB provided technical support to the National Parks Conservation Association (NPCA) as they explored opportunities for implementing projects around Jamaica Bay that will reduce flooding while not harming the natural and cultural resources of Gateway National Recreation Area and surrounding communities. The SRIJB produced maps and renderings of infrastructure proposed through the Harbor and Tributaries Study, conducted research on other proposed flood risk reduction projects and convened focus groups in local neighborhoods to capture community needs and ideas.

Climate Justice Hub & Good Old Lower East Side Collaboration



Working alongside Good Old Lower East Side (GOLES), NYC Climate Justice Hub, and researchers from CCNY, the SRIJB helped implement a comprehensive environmental justice and climate resilience survey for residents of the Lower East Side. Survey results will be used to identify opportunities for GOLES to develop programs that advance environmental and climate justice and better prepare residents for climate risks. As part of the NYC Climate Justice Hub, SRIJB collaborates with GOLES to elevate community-driven knowledge about climate risks in the Lower East Side. Through surveys, workshops, and data analysis, the project centers around amplifying lived experiences, informing equitable climate policy, and supporting grassroots efforts to build long-term resilience.





Nature-based Solutions for Water Quality in NYC’s Long Term Control Plan



The SRIJB supports the NYC DEP’s nature-based solution approach to improving water quality following stormwater events. Our team of faculty and students have been studying novel approaches to removing fecal indicator bacteria and nitrogen from urban waters, including an engineered wetland in Alley Creek and a first-of-its-kind ribbed mussel installation in Jamaica Bay’s Bergen Basin. This work will inform larger scale implementation of these strategies.

Filling Knowledge Gaps about NNBF

With funding from the US Coastal Research Program, NY Sea Grant and the SRIJB have been convening agencies, practitioners, researchers, and community partners to identify and fill knowledge gaps about the use of natural and nature-based features—like living shorelines—to strengthen coastal resilience in NY State. Through workshops and statewide symposia, the initiative has supported collaborative learning and a community of practice to increase implementation of nature-based solutions rather than hard infrastructure along shorelines.



Cloudburst Research

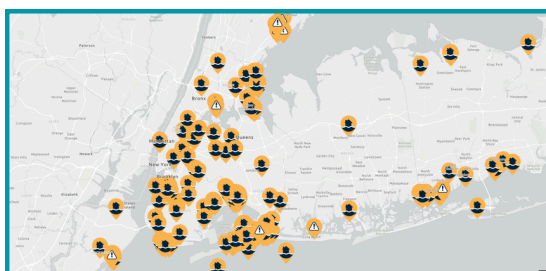
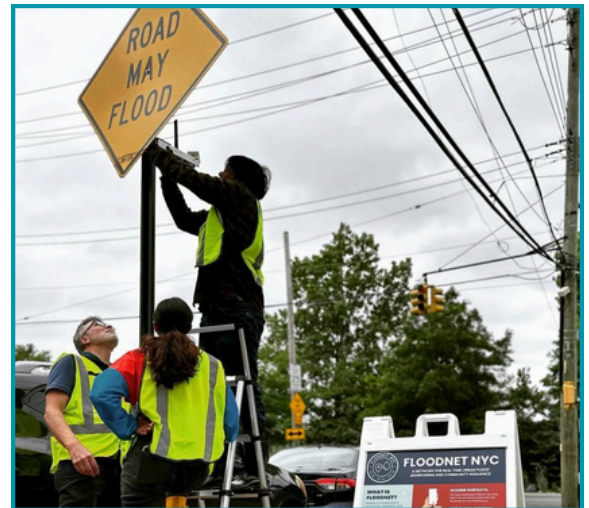
The SRIJB is supporting DEP’s highly interdisciplinary water and stormwater resiliency efforts through the development of standardized protocols for systematic monitoring of stormwater resiliency initiatives across neighborhood sites for current and future implementation. The 3-year research plan for performance assessment monitoring will initially focus on pre- and post-implementation assessments of performance and stakeholder communication strategies.

FloodNet NYC



FloodNet empowers residents, researchers, and decision-makers to better prepare for and respond to flood events by providing accessible, actionable, and hyperlocal street-level flooding data. The project integrates low-cost, open-source sensor development and deployment with robust data processing, visualization tools, and sustained community engagement to ensure the information produced is both scientifically rigorous and locally relevant. FloodNet is a collaborative initiative led by the Science and Resilience Institute at Jamaica Bay in partnership with the CUNY Advanced Science Research Center, NYU, the NYC Mayor's Office, the NYC Department of Environmental Protection, and community-based organizations, centering local knowledge in flood preparedness and climate resilience planning.

Project Website: <https://www.floodnet.nyc/>



Jamaica Bay FloodWatch Program

SRIJB collaborates with New York Sea Grant to engage New York City residents in documenting local flooding events, generating community-informed data that strengthens flood forecasting and resilience planning. Through participatory monitoring, public education, and knowledge sharing with Community Flood Fellows, residents' lived experiences are elevated as a critical source of insight. This work increases awareness of the frequency, severity, and impacts of coastal flooding, while helping inform more responsive and equitable citywide strategies for sea level rise—particularly for communities surrounding Jamaica Bay.

West Pond Living Shoreline



SRIJB scientists and students have been collecting data to assess the ability of a living shoreline at the West Pond in the Jamaica Bay Wildlife Refuge to provide important resilience services, including shoreline stabilization, habitat enhancement and socio-cultural benefits. The data directly inform adaptive management and stewardship of the site by the National Park Service and the Jamaica Bay Rockaway Parks Conservancy.



Jamaica Bay Community Flood Fellowship Program



The Jamaica Bay Community Flood Fellowship Program brings together local leaders to share knowledge, build skills, and advocate for flood resilience in their neighborhoods. Led by NY Sea Grant, the program empowers fellows to connect community experiences with citywide adaptation efforts. Through workshops, peer learning, and applied projects, fellows strengthen local capacity while contributing insights that shape more equitable and informed flood resilience strategies across Jamaica Bay.

Regulatory Impediments to NNB Implementation



The SRIJB and collaborators aim to create an action agenda for easing the regulatory challenges associated with permitting projects that advance shallow water habitat restoration and natural and nature-based features along shorelines. Through workshops, in-depth interviews with practitioners, policy makers and regulators, and research on underlying statutes and regulations, new opportunities for collaborative action have been identified to advance beneficial projects.

Education & Training

is how the institute equips communities, students, and practitioners with the knowledge and tools to lead on climate resilience and environmental justice.

Brooklyn Urban Ecology and Environment (BUEE) Program

SRIJB supported the Brooklyn Urban Ecology and Environment (BUEE) Program, an NSF-funded Research Experiences for Undergraduates initiative that provides hands-on training in urban ecology, coastal resilience, and environmental justice. Over a 10-week summer program, students work alongside SRIJB researchers and partners to collect data in Jamaica Bay, analyze real-world environmental challenges, and contribute to community-driven climate solutions — building skills and pathways into climate and resilience careers.

CUNY Climate Scholars

SRIJB collaborates with the CUNY Climate Scholars program, a year-long fellowship that prepares students to lead on climate adaptation through interdisciplinary research, professional development, and internships focused on topics like nature-based solutions and environmental justice. Scholars gain experience directly relevant to SRIJB’s mission and several have contributed to resilience projects in and around Jamaica Bay, preparing future leaders ready to strengthen New York City’s frontline communities.

NBS Seminar Course at Brooklyn College

Director Brett Branco partnered with Kyle McKay, a thought-leader on nature-based solutions from the US Army Corps’ Engineering Research and Development Center (ERDC) to develop and teach a seminar course for graduate students. The course covered all aspects of nature-based solutions including conceptualization, monitoring and assessment, community engagement, and engineering guidelines.

Environmentor

For the 10th year in a row, SRIJB hosted Environmentor students from the Rockaway Initiative for Sustainability and Equity (RISE). Two students were paired with Brooklyn College MS student Caitlin Lynch to conduct a comprehensive survey and assessment of the shoreline in the North 40 section of Floyd Bennett Field. Through this work, the students gained practical field experience while contributing data to help guide future restoration efforts.



Students

turn learning into action as they apply their skills to real world projects, support frontline communities, and build careers rooted in justice and resilience.



Learning & Leading

Our student fellows from CUNY and beyond are the engine of our work gaining expertise by contributing to real-world projects in climate resilience, education, and community engagement.

Our Student Fellows

P

CUNY Climate Scholar Program

Helen Neundorff, Lehman College
Liz Brandwein, NY City Tech

R

Brooklyn Urban Ecology and Environment / National Science Foundation Research Experience for Undergraduates

Tiasha Dey, Brooklyn College
Charlotte Subak, Mt Holyoke
Kristen Ivins, UMCES

O

G

RISE Rockaway Initiative for Sustainability & Equity

Brooke Anderson
Akiru Anthony

R

A

M

S

Student Fellows Overview

36

Students Engaged in Research

11

Academic Institutions Represented

53

Students Engaged in Environmental Learning

2025 Student Impact

Georgia Humphries presented on NNBF at the American Shore and Beach Preservation Association Conference in Galveston, TX.

After graduating, Sofia Mariyamis joined SRIJB as a Community Engagement Specialist, advancing climate resilience in NYC's coastal communities.

Jackie Singer joined the NYC Department of Environmental Protection's Marine Resources Division.

STUDENTS

Undergraduate Students

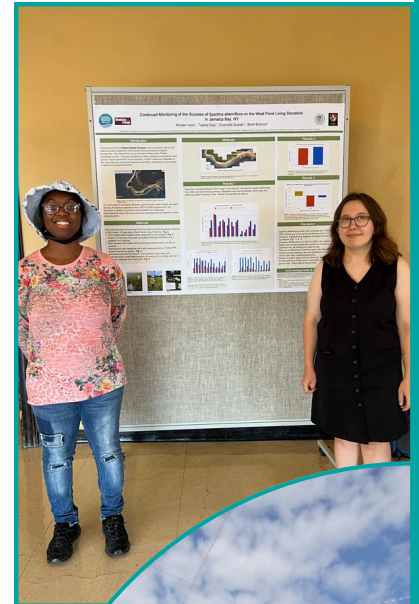
Mir Islam, Baruch College
Natasha Herman, Brooklyn College
Sarah Maria dos Santos, Brooklyn College
Sofia Mariyamis, Brooklyn College
Tamar Razmadze, Baruch College

PhD Students

Abdullah Khawarзад, CUNY Graduate Center
David Monda, CUNY Graduate Center
Georgia Humphries, CUNY Graduate Center
Grace Damiano, CUNY Graduate Center
Mojgan Zamani, CUNY Graduate Center
Parisa Setayesh, CUNY Graduate Center
Shahela Begum, CUNY Graduate Center
Tiaamè Medina, CUNY Graduate Center

Masters Students

Ahmed Abbas, Baruch College
Amanda Flores, Baruch College
Andreas Haralambou, Queens College
Archana Dwivedi, CUNY School of Public Health
Cate Collinson, Royal Roads University
Caitlin Lynch, Brooklyn College
Daniel Angus, Brooklyn College
Gabriel Fradis, Brooklyn College
Jacqueline Singer, Queens College
Julia Sandke, CUNY Advance Science Research Center
Leslie Jarrett, Queens College
Leopoldo Cabassa-Kaufmann, Queens College
Mia Lepe, Brooklyn College
Nicholas Russell, CUNY Advance Science Research Center
Nicolle Navaretta, CUNY Advance Science Research Center



Floyd Bennett Field

is reimagined as a living lab by transforming Hangars 3 & 4 into hubs for research, innovation, and public-engaged resilience work.





Floyd Bennett Field (FBF), once New York City’s first municipal airport, is reemerging as a hub for innovation, research, and education through a partnership among the Jamaica Bay–Rockaway Parks Conservancy (JBRPC), the National Park Service (NPS), and the Science and Resilience Institute at Jamaica Bay (SRIJB).

Building on its aviation legacy, the reactivation of Hangars 3 & 4 will transform these historic structures into dynamic spaces for nature-based innovation, public engagement, and education—uniting science, design, and stewardship to shape a more resilient New York City.

SRIJB’s Role and Vision

As the lead academic partner, SRIJB is shaping the design and program for Hangar 4, envisioned as a Nature Tech and Research Hub – a space for scientists, students, and innovators to collaborate and test scalable resilience solutions. The Hub will serve as both a research platform and living classroom, connecting science, policy, and community action.



Partnership in Action

In June, as part of Climate Week, SRIJB and JBRPC co-hosted Innovation & Action in Jamaica Bay: A State of the Bay Event, bringing together partners across sectors to highlight scientific and community-driven efforts advancing the ecological health and resilience of Jamaica Bay. The event reflected a shared vision for the Bay—one rooted in collaboration, knowledge-sharing, and measurable impact.

A Hub for Learning & Innovation





Floyd Bennett Field will amplify SRIJB’s capacity to:

- Host interdisciplinary research and education programs in ecology, restoration, and urban resilience.
- Support nature-based solution testbeds that connect researchers with real-world field conditions.
- Provide space for cultural expression and creative exploration that inspires new ways of engaging with the environment.
- Foster partnerships and workforce development, training New Yorkers for careers in climate and coastal resilience.

Active Grants & Funding

Project Name	Period	Funder	Team
NYCDEP Intergovernmental Agreement: FloodNet	2022-2027	NYCDEP	SRIJB , NYU, NYC DEP, MOCEJ, OTI
NYCDEP Intergovernmental Agreement: LTCP Water Quality Research (Alley Creek & Ribbed Mussels)	2022-2026	NYCDEP	SRIJB , CCE, SBU, IEC, Hazen, NYC DEP
Regulatory Impediments to Shallow Water Habitat Restoration	2023-2025	HRF	SRIJB , UGA, SCAPE, NYC Parks
Applying and Sharing Emerging Knowledge about Natural and Nature-Based Features and Resilient Shorelines in New York	2023-2025	USCRP	NY Sea Grant , SRIJB
West Pond Living Shoreline	2022-2026	JBRPC	SRIJB
Technical Support to NPCA for HATS Alternatives Research	2024-2025	NPCA	SRIJB
New York City Climate Justice Hub: Comprehensive Community Assessment of Lower East Side	2024-2025	Waverly Foundation	Good Old Lower East Side, SRIJB , City College of New York
NYC DEP Intergovernmental Agreement: Stormwater Resiliency and Cloudburst Management Research – Performance Monitoring and Stakeholder Communication	2025	NYCDEP	SRIJB
NSF Research Experience for Undergraduates: Brooklyn Urban Ecology and Environment	2022-2026	NSF	Brooklyn College , SRIJB

Active Grants Overview

			
\$10,692,974	6	9	2022 - 2027
Active Research Funding	Funders	Active Funded Projects	Current Funding Period

Looking Ahead



As climate impacts intensify across New York City’s coastal neighborhoods and ecosystems, the Science and Resilience Institute at Jamaica Bay continues to evolve in its role as a bridge between researchers, communities, practitioners and decision-makers. Building on more than a decade of interdisciplinary research and partnership-driven work, SRIJB is focused on expanding its capacity to support equitable climate resilience, deepen community collaboration, and translate data into meaningful action.

Looking ahead, the Institute remains committed to strengthening Jamaica Bay as a living laboratory for coastal resilience – one that centers local knowledge, prepares future leaders, and informs policy and planning at neighborhood, city, and regional scales.

Growing Toward the Future

At this moment, the Science and Resilience Institute at Jamaica Bay is looking toward a future of:

- Expanding community-centered research that integrates lived experience with scientific data to better understand flooding, ecosystem change, and climate risk.
- Strengthening education and workforce pathways for students and community members through hands-on learning, mentorship, and applied resilience projects.
- Scaling partnerships and tools that support informed decision-making, from hyperlocal flood data to nature-based and policy-relevant solutions.



Integrating the knowledge of community members, researchers, and practitioners is what we need to continue shaping the future of Jamaica Bay

~ Brett Branco

Produced & Edited by:

Sofia Mariyamis, College Assistant, Science and Resilience Institute at Jamaica Bay
Brett Branco, Executive Director, Science and Resilience Institute at Jamaica Bay

Design & Layout

Sofia Mariyamis, College Assistant, Science and Resilience Institute at Jamaica Bay
Brett Branco, Executive Director, Science and Resilience Institute at Jamaica Bay

Photography & Illustrations

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Instagram

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