



Stony Brook University
*School of Marine and
Atmospheric Sciences*



**A Vision for SoMAS Science, Education, and
Outreach Leadership, 2022-2027**

Message from the Dean

Greetings. I am honored and delighted to highlight and celebrate our revised Strategic Plan, "A Vision For SoMAS Science, Education, and Outreach Leadership, 2022 - 2027". This is a revision and update of our Strategic Plan released in April of 2019. It is a positive sign that most of our vision and objectives expressed in that document have not changed, as the objectives conveyed here represent true ongoing passions for the faculty and staff of SoMAS, all of whom are dedicated to our strength and growth. Meeting our objectives will require determination and commitment, and I am pleased that we are rich with these attributes.

There have been a variety of changes and events since 2019 that prompt us to reformulate and express our vision and objectives. Perhaps first, we have lived through a global pandemic, and have hopefully emerged on the other side stronger and wiser. We have learned a great deal about education, and how it best happens, even if to some extent the experience reaffirms some of our convictions about what makes for high quality learning experiences. Since 2019 SBU has recruited some very talented executive leadership in President McInnis, Provost Lejuez, and several new Executive VPs. I am convinced that we are at the beginning of a new era of stable and inspired leadership, and that SoMAS has a great deal to contribute to SBU's growing stature and successes. New York State is in the process of launching bold new initiatives aimed at combating climate change and its associated impacts, and SoMAS is able to provide leadership in many areas relevant to NYS's goals. We continue to expand our network of connections and stakeholders around Long Island, NYS, and the world, and this is reflected in our range of

activities and funding sources, as well as in our positive impacts to humans and the non-human biosphere. I am proud to know that we all enthusiastically embrace our motto: *Making Scientific Research Count*.

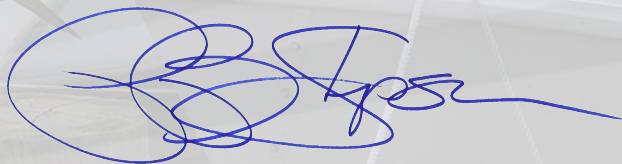
We have a variety of important priorities expressed in this Strategic Plan. First is investment in people, our most important asset, and often our driving force for making positive change in the world. We have important challenges to invest appropriately in the SoMAS family, both faculty and staff; an important imperative is to build strength in critical areas related to coastal processes, and to secure our strengths in marine and atmospheric sciences, which will help us lead in several new areas of opportunity. We also reaffirm our commitment to providing unique and enriching experiences for our students, who we expect to be leaders for future challenges to shepherding our planet toward a more sustainable state. We are partners with our students in identifying and implementing solutions to the challenges of climate change and its impacts, and protecting our natural environments. As stated in the previous document's message, we are humbled by the magnitude and urgency of these challenges, yet energized to make lasting contributions through meaningful solutions using our combined talents.

A top priority for SoMAS is the need for **state-of-the art facilities** for research and education, to support our research leadership goals, to attract the best students and faculty, and to enable and support our interests in broad collaborations and engagement with leaders in disciplines that connect to solving grand challenge problems like climate change and its

mitigation. Our current status in 50-plus year old "temporary housing" is not consistent with our goals, and very significantly hampers our growth. The attachment to the section on a new building for SoMAS provides a more substantial expression of our vision for a **new building**, and the return on the investment that will ensue. SoMAS should have research and education facilities consistent with the NY State investment in us as SUNY's only Marine Science program, and our proven leadership in all aspects of Marine and Atmospheric Sciences, and Sustainability Studies.

SoMAS embraces the importance of diversity, equity, and inclusion as important characteristics of a healthy home for inquiry that is a fertile area for creative research, education, and outreach to our stakeholder communities. While we have made progress, and have an enthusiastic Diversity, Equity, and Inclusion committee, we have a long way to go in reaching our diversity goals. Such goals are intimately connected to our ability to recruit and retain the best people, and to ensure that our scholarship reaches a broad range of constituencies. Let us all work together toward the goals expressed in the plan and the vision statement.

Lastly, I want to thank the members of the strategic planning committee for their efforts. Working together, we will continue to make SoMAS a global leader in research, education, and outreach regarding the natural Earth environment.



Paul Shepson, Dean

The 2019 Strategic Plan for the School of Marine and Atmospheric Sciences (SoMAS), crafted with input from all SoMAS faculty and staff, articulated our ambitions and guided our actions over the ensuing years. We have been evaluating our progress annually. Given some of the recent challenges and new opportunities, a revised strategic plan has been developed for 2022 - 2027. This new plan supersedes our previous plan and will serve as a roadmap forward, but just as before, we will review annually and plan to revise our strategic plan as our goals are met, as our School evolves, and as new challenges continue to emerge in the interactions between society, the land, the sea, and the sky, and the complex relationships and interdependency upon one another.

As emphasized in our 2019 Plan, SoMAS embraces and promotes the values of diversity, equity, and inclusion. We strive to provide a safe, respectful, welcoming, and intellectually stimulating environment for students, staff, and faculty of all backgrounds and identities including but not limited to gender, race, religion, creed, socioeconomics, ethnicity, age, geographic origin, ancestry, sexual orientation, gender identity, gender expression, marital status, familial status, health and physical disability, political philosophy, and veteran status. We believe firmly that these values are not only moral and ethical imperatives, but also foundational elements of holistic problem-solving that engage and respect multiple perspectives and opinions leading to the pursuit and creation of the best science and the most innovative solutions to pressing environmental and societal challenges.

Since the implementation of the last strategic plan in 2019, there have been major accomplishments. Here we lay out our objectives to continue and accelerate progress in the pursuit of SoMAS' strategic goals. Information about Strategic Planning Committee members and photo credits is appended at the end of this document.

Vision

Be a world-class integrative program in marine, atmospheric and sustainability research and education, committed to a culture that promotes academic excellence, diversity, equity, and inclusion.

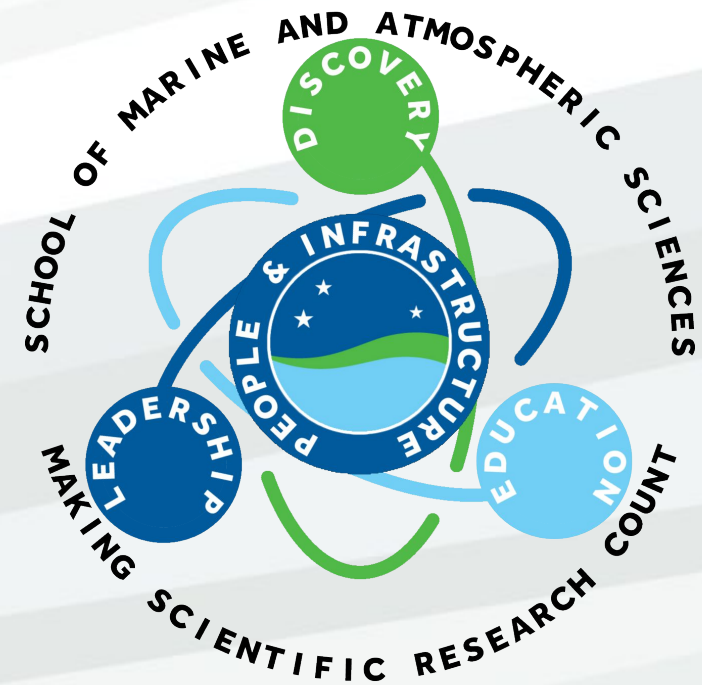


Mission

To advance knowledge and solve critical global and regional problems through the study of human and natural systems.

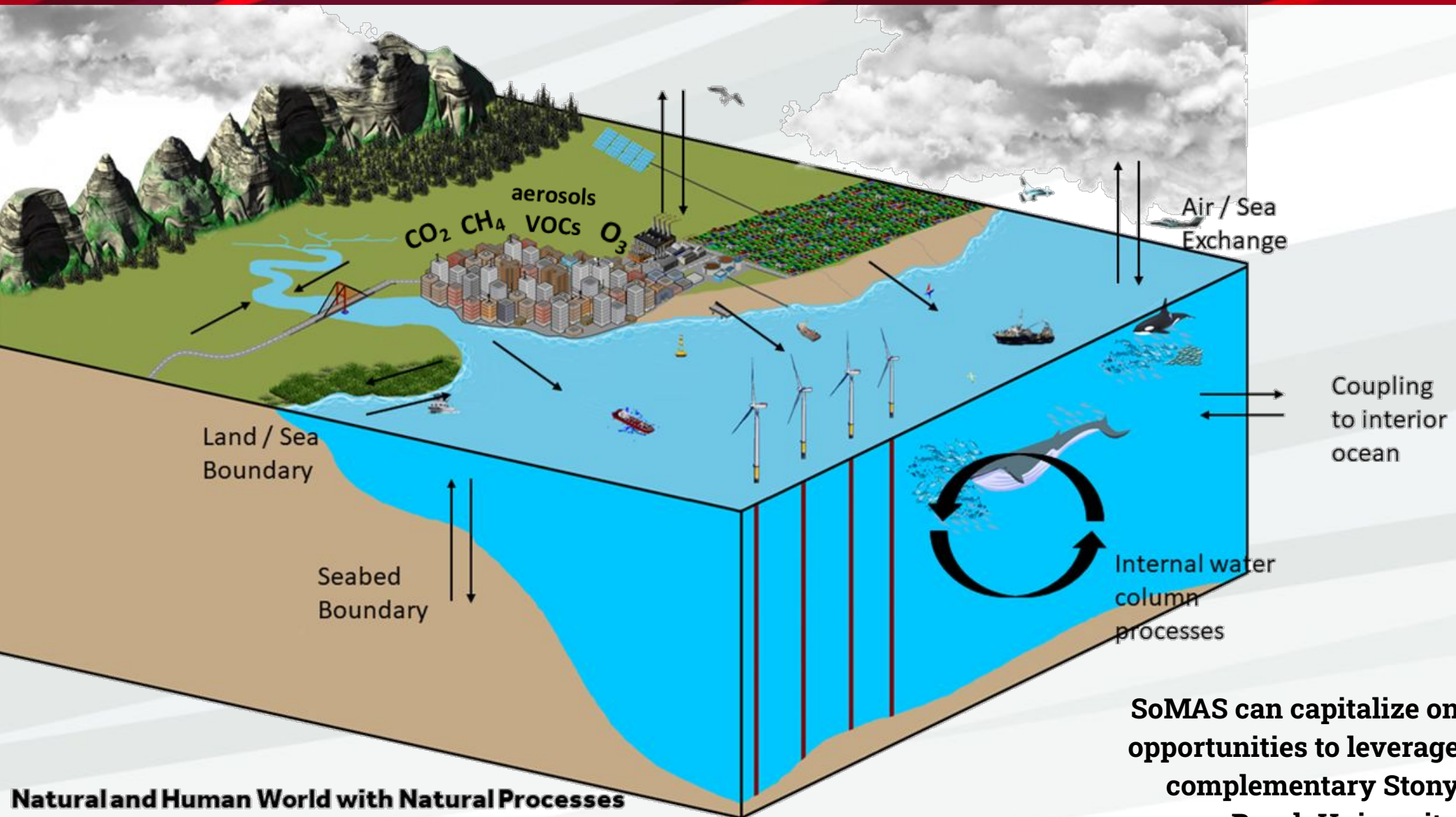
Our strategic plan to fulfill this mission is centered around five priorities:

- **Discovery:** Strengthen the SoMAS research enterprise and pursue excellence through disciplinary and interdisciplinary research.
- **Education:** Develop the next generation of leaders to address interwoven environmental, technical, social, economic, political, and ethical challenges.
- **Leadership:** Inform and inspire efforts to mitigate and adapt to climate change and other environmental challenges through outreach and communication.
- **Infrastructure:** Develop a modern and inspiring home for SoMAS, and develop, maintain, and operate the facilities and vessels needed to enhance our leadership on coastal challenges.
- **People:** Create and leverage new opportunities to hire new faculty and staff to grow our research, education, and outreach opportunities.



At its core, SoMAS is supported by PEOPLE and INFRASTRUCTURE, which empowers the success of our three pillars of strength in DISCOVERY, EDUCATION, and LEADERSHIP

Global Leadership in the Study of Coastal Processes



Natural and Human World with Natural Processes

**40% of the global human population lives within 60 miles of the coast.
26% of all biological diversity is in coastal waters.**

SoMAS can capitalize on opportunities to leverage complementary Stony Brook University programs

The Next Five Years

The overarching goal for the next five years is to further improve SoMAS' status as a world leader in coastal systems and associated processes in natural and built environments. The coastal zone includes many interconnected land, ocean, atmosphere, and surface-water hydrological processes. It is an integrated system that includes seabed, air-land-sea, and land-sea boundary processes, internal water column processes, land use and habitat changes, urban inputs, and hydrology. Climate change is an important driver of coastal zone processes, which SoMAS is well positioned to tackle. In addition to climate change, many other human impacts are perilous issues, such as ocean acidification, hypoxia, habitat destruction, release of toxic pollutants, air pollutants including atmospheric aerosols, nutrient cycle alteration, and overfishing. These must be assessed in the context of natural variability, expanding population pressure and understanding human responses and adaptation to changes. Lastly, there will be new opportunities related to the transition to fully renewable energy (e.g., wind and solar, and energy storage) that involve our coastal zone. Our focus over the next five years aligns with several national, New York State (NYS), New York City, and Stony Brook University (SBU) initiatives. It is also critical to educate and inspire the next generation of students in these areas, which entails the improvement of existing education majors/minors within SoMAS and the consideration of new majors/minors that bridge different disciplines on campus. Overall, our strategic plan focuses on ways to fulfill our mission and its five priorities: Discovery, Education, Leadership, Infrastructure and People.

Hiring the best candidates in critical areas is an important part of our strategic plan. Over the past five years, SoMAS has had faculty retirements in critical disciplines, compromising our ability to realize our Vision. However, the hiring vision outlined in this plan, along with recent entrepreneurial hiring efforts, present an opportunity to pursue highly targeted recruitments in support of our Vision. We will build upon disciplinary and interdisciplinary strengths in understanding the coastal system, predicting responses to natural and anthropogenic perturbations, and developing strategies for adaptation. New York City and Long Island offer a natural laboratory to explore these areas, which motivates hiring in areas such as coastal processes, ecosystem changes/modeling, oceans and human health, and resilience. Adequate staffing to assertively pursue our mission is also critical as well as recruiting talented students, from all over the world, at both the undergraduate and graduate levels.

State-of-the-art facilities are essential to meeting our goals. The physical state of our existing buildings impairs our ability to recruit the best and be the best we can be. Our strategic plan includes a roadmap for a **new building** that will be green, make us more interactive with the rest of campus, position us to be a more appealing academic program and home for research-active faculty, staff and students, and include facilities that will support our goal to lead nationally and internationally. The \$9 million upgrade to Flax Pond offers many opportunities to study marine organisms and habitats in a controlled environment. Our R/V *Seawolf* and fleet of smaller research vessels are important assets needed to understand our coastal/urban environment and ecosystem.

DISCOVERY: Strengthen the SoMAS research enterprise and pursue excellence through disciplinary and interdisciplinary research.

Our approach to excellence is based on three strong interconnected pillars in Marine, Atmospheric, and Sustainability research. Our research encompasses grand challenge topics that directly engage society, such as climate change, air and water pollution, sea level rise, habitat destruction, sustainable fisheries, storm surge, extreme weather, radar meteorology, waste management, ocean acidification and deoxygenation, environmental and public health, disaster recovery, and community planning for coastal resilience. These areas of research are becoming increasingly integrated. The responsibility of our research is to guide balanced development and operating practices that do not jeopardize the life-supporting systems of the Earth and the quality of life for future generations. Our collective expertise addresses these challenges in a variety of ways. To secure the resources to make a significant difference addressing these issues, we will work to double our research enterprise over the next five years.



OBJECTIVE 1.1: Grow the SoMAS research enterprise by strengthening and facilitating interaction among the three pillars to maximize our effectiveness.

SoMAS is internationally recognized for its leadership in Earth system sciences, where the greatest advances in science happen at the intersection of multiple disciplines. Nowhere is this more true than in coastal research. The coast is where the oceans, atmosphere, land, and society intersect, where climate-related and other human-mediated perturbations are most acute, and where our research will have increasing relevance. Solutions for complex coastal problems will require interaction throughout all of SoMAS and other parts of campus.

OBJECTIVE 1.2: Enhance the impact of research through innovative engagement and leadership outside SoMAS.

Effective communication greatly amplifies the impact of our research. Communication depends as much on active listening as it does on relatable and articulate speaking and writing across a variety of platforms. To increase the impact of our research and leadership, we will draw on multimedia approaches to enhance the dialogue among faculty, students and staff with the community, state, nation, and world.

DISCOVERY: Strengthen the SoMAS research enterprise and pursue excellence through disciplinary and interdisciplinary research.

OBJECTIVE 1.3: Lead the development of a high-impact University-wide College

Our aim is to lead the development of a university-wide unit that brings together collaborators to build educational capacity and success, develop productive and cross-disciplinary partnerships, and enable our vision to develop resilient and innovative solutions that address planetary challenges. While scholars individually explore problems that inextricably contribute to understanding the state of our planet, there is a recognized need to create a central hub that will synergistically facilitate creative approaches in education and interdisciplinary research, and foster key discoveries across disciplines and institutes. We seek to invest in a deliberate set of research, education, and outreach activities that will connect scholars, faculty, staff, students, community members, and stakeholders who share our vision to foster research- and action-based decision-making for a sustainable future.



Students conducting a beach survey

EDUCATION: Develop the next generation of leaders to address intertwined environmental, technical, social, economic, political, and ethical challenges.

We strive to create a community of compassionate, creative, and globally aware citizens and scientists, who will lead in the development of solutions to a multitude of environmental challenges. Education lies at the core of both our mission and our scientific enterprise. Students are our greatest resource and contribution to society and ultimately define our legacy. We seek to foster intellectual growth and societal betterment that result from the respectful sharing of diverse viewpoints, inclusion, and respect for diverse backgrounds, and valuing the variety of methods used to create knowledge. Our mission to solve societal problems requires motivated, informed, and problem-solving students. Their success is the ultimate measure of the success of SoMAS and our ability to make the world a better place.

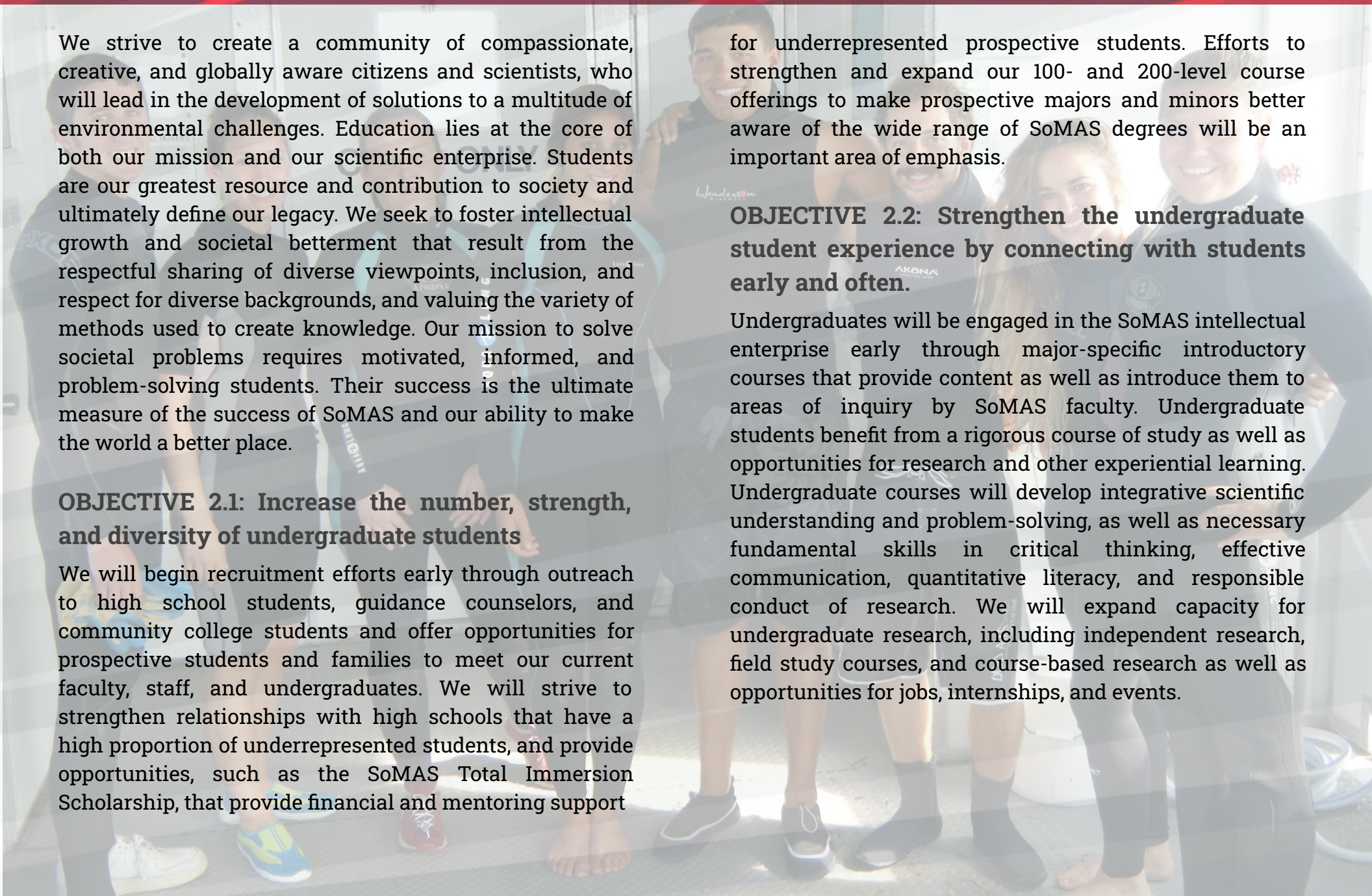
OBJECTIVE 2.1: Increase the number, strength, and diversity of undergraduate students

We will begin recruitment efforts early through outreach to high school students, guidance counselors, and community college students and offer opportunities for prospective students and families to meet our current faculty, staff, and undergraduates. We will strive to strengthen relationships with high schools that have a high proportion of underrepresented students, and provide opportunities, such as the SoMAS Total Immersion Scholarship, that provide financial and mentoring support

for underrepresented prospective students. Efforts to strengthen and expand our 100- and 200-level course offerings to make prospective majors and minors better aware of the wide range of SoMAS degrees will be an important area of emphasis.

OBJECTIVE 2.2: Strengthen the undergraduate student experience by connecting with students early and often.

Undergraduates will be engaged in the SoMAS intellectual enterprise early through major-specific introductory courses that provide content as well as introduce them to areas of inquiry by SoMAS faculty. Undergraduate students benefit from a rigorous course of study as well as opportunities for research and other experiential learning. Undergraduate courses will develop integrative scientific understanding and problem-solving, as well as necessary fundamental skills in critical thinking, effective communication, quantitative literacy, and responsible conduct of research. We will expand capacity for undergraduate research, including independent research, field study courses, and course-based research as well as opportunities for jobs, internships, and events.



OBJECTIVE 2.3: Recruit a larger, stronger, more diverse graduate student population.

Increasing the size, quality, and diversity of the SoMAS graduate student population will bring increased capacity and perspectives to the classroom and to our research enterprise. It will also help us better understand how environmental issues affect a wide variety of people and communities. This, in turn, will strengthen the ability of SoMAS to produce transformational science and outcomes and train future leaders and problem-solvers. Our recruitment effort will also focus on student groups traditionally underrepresented in STEM fields. As a result, this is a priority for our financial development efforts.

OBJECTIVE 2.4: Strengthen the graduate student experience.

A strong graduate program starts with an active, intellectual, and well-funded faculty. We then provide high quality support for our graduate students, beginning at recruitment. We will improve the support structure for graduate students and provide more certainty and continuity in funding, including opportunities created through the development of new, large, introductory undergraduate courses that require TAs, fundraising for fellowship opportunities, and support for students who are completing their dissertations. The work completed during their graduate careers will provide our students with the knowledge and skills they need to succeed in their current research and in their chosen career path. We will provide mentorship and professional development that provides an inclusive environment and guides the students to complete their

degrees in a timely fashion, and succeed in their chosen careers, and this will be the legacy of SoMAS.

OBJECTIVE 2.5: Strengthen connections with the SoMAS alumni community

A vibrant and connected alumni network will strengthen our School and provide educational and employment opportunities for students and camaraderie for the SoMAS community. We will take proactive steps to better engage our alumni, e.g. through seminar invitations, partnering with community outreach and education efforts, collaboration on SoMAS projects, etc. We will provide new opportunities for alumni to participate in SoMAS events, including during SBU homecoming activities, and work to interact with alumni regularly throughout the year.



LEADERSHIP: Inform and inspire efforts to mitigate and adapt to climate change and other environmental challenges through outreach and communication.

Making Scientific Research Count has been the unofficial motto of SoMAS since the inception of the Marine Sciences Research Center for New York State. Over the last 55+ years, the scope of our research and education efforts has broadened, especially with the inclusion of Atmospheric and Sustainability Sciences, but our commitment to studying environmental issues and developing and implementing solutions has only strengthened. We are developing technologies to preserve groundwater quality, restoring the ecosystems within our bays, improving prediction, and planning for urban environments impacted by rising sea levels, and incorporating climate predictions and projections into the management of marine resources. We are proud of our storied tradition of conducting science to solve societal problems. Many of the barriers to implementing solutions are institutional, political, cultural, and socioeconomic in nature. As such, we will partner with other SBU units, and with governmental agencies, non-governmental organizations (NGOs), and the private sector on shared research, education, and community engagement goals.

OBJECTIVE 3.1: Strengthen relationships with local, state, and federal agencies.

SoMAS already has close relationships with NOAA, the NYS Department of Environmental Conservation, the NYS Department of State, the NYS Energy Research and Development Authority, the NY Sea Grant, and other government agencies. However, we intend to make these relationships more effective and mutually beneficial through coordinating joint outreach efforts and facilitating meetings between agencies, stakeholders, and SoMAS faculty and students.

OBJECTIVE 3.2: Partner with NGOs and the private sector on shared research, education, and community engagement goals.

SoMAS currently works with multiple NGOs and private groups on collaborative opportunities and will continue to explore potential collaborations that may become available with new facilities, such as opportunities for public engagement on issues such as climate change and environmental quality. SoMAS will continue to work with EarthBus to bring our science to underserved and historically excluded communities and work to expand internship opportunities to give current students experience working in these non-academic sectors.

OBJECTIVE 3.3: Engage mass media and the public directly.

SoMAS has formal cooperative agreements with agencies that facilitate research to implement solutions to environmental problems and host meetings to communicate pertinent findings. We will also develop opportunities on Governors Island to offer real solutions to climate and environmental challenges for New York. SoMAS faculty and students conduct pioneering research that is relevant to major societal issues, such as climate change, pollution, and resource degradation, and environmental protection and conservation. We will work to train our researchers to effectively communicate about their research, facilitate opportunities to publicize their work through multiple media outlets, and appropriately reward outreach efforts.

OBJECTIVE 3.4: Promote public outreach, visibility and support.

SoMAS has a variety of audiences including the general public, prospective students, SBU and its administration, colleagues at other academic and research institutions, resource managers, stakeholders, and government officials. These groups must be fully informed and continually aware of SoMAS work and its relevance to their interests. We will continue to grow our SoMAS alumni collaborations.



FLAX POND
MARINE
LABORATORY

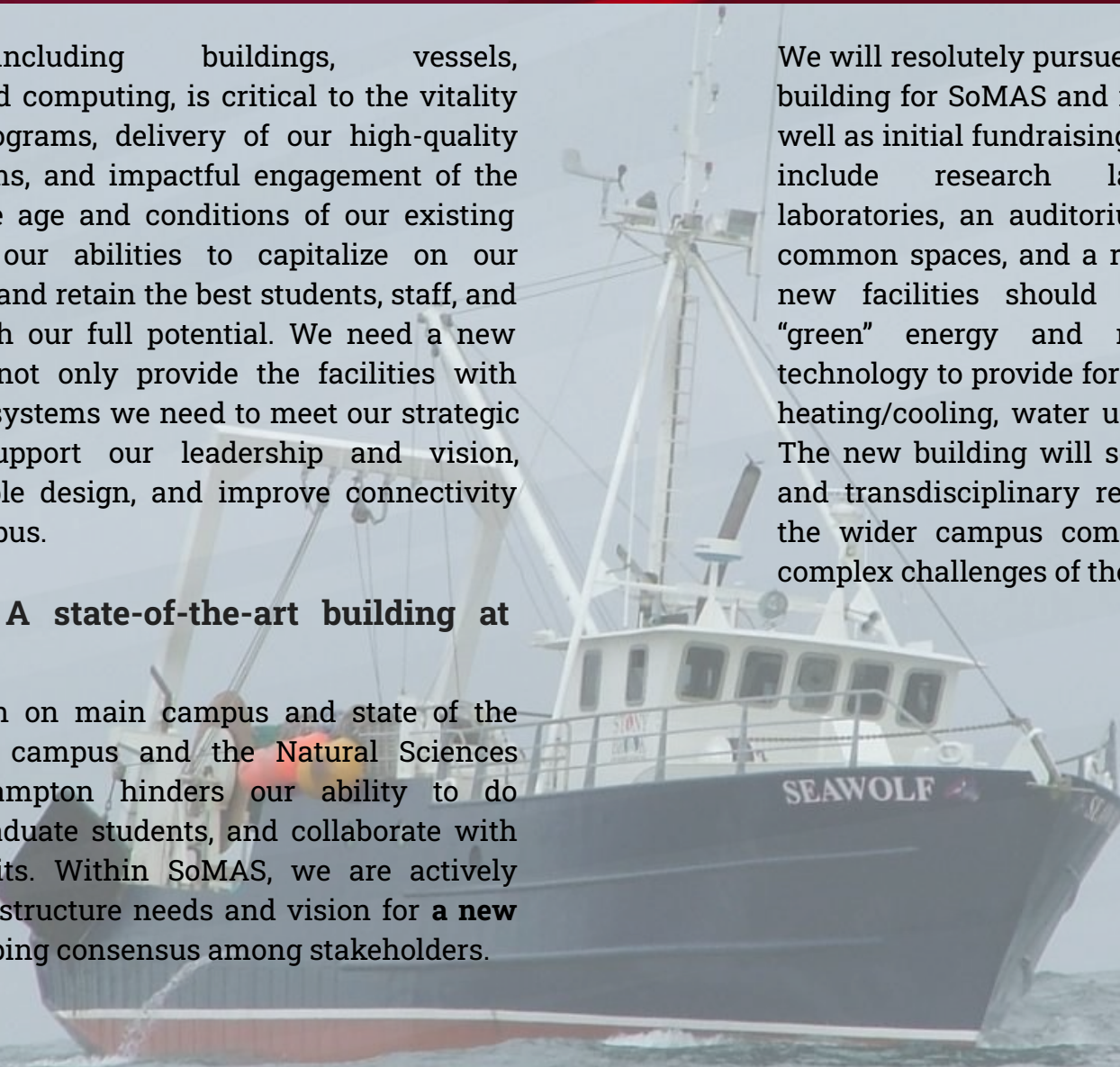
INFRASTRUCTURE: Develop a modern and inspiring home for SoMAS, and develop, maintain, and operate the facilities and vessels needed to enhance our leadership on coastal challenges.

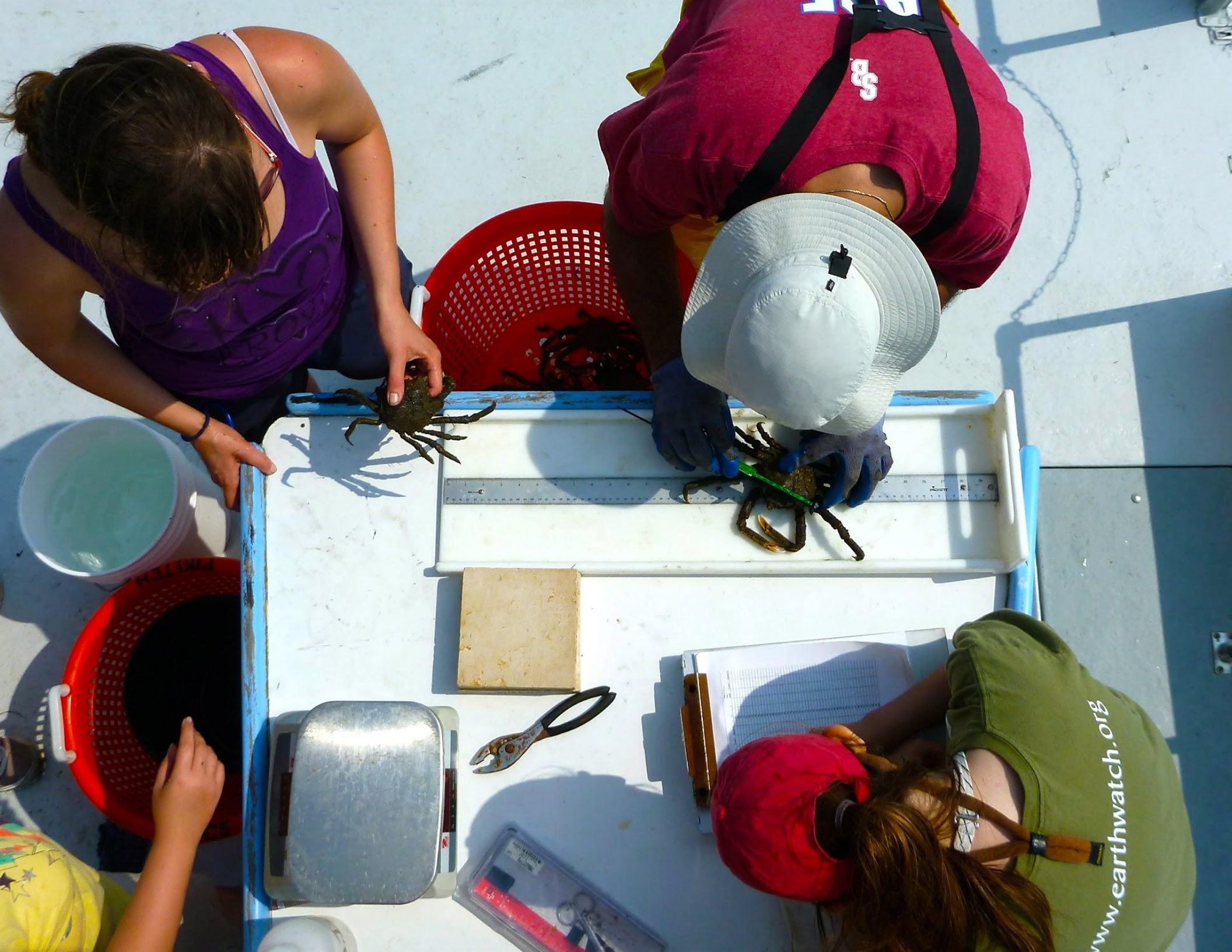
Infrastructure, including buildings, vessels, instrumentation, and computing, is critical to the vitality of our research programs, delivery of our high-quality educational programs, and impactful engagement of the public. The extreme age and conditions of our existing buildings hamper our abilities to capitalize on our strengths, to recruit and retain the best students, staff, and faculty, and to reach our full potential. We need a new building that will not only provide the facilities with associated modern systems we need to meet our strategic goals, but also support our leadership and vision, showcase sustainable design, and improve connectivity with the rest of campus.

OBJECTIVE 4.1: A state-of-the-art building at Stony Brook.

Our current location on main campus and state of the buildings at south campus and the Natural Sciences building at Southampton hinders our ability to do research, recruit graduate students, and collaborate with other academic units. Within SoMAS, we are actively discussing our infrastructure needs and vision for a **new building** and developing consensus among stakeholders.

We will resolutely pursue the planning for a new building for SoMAS and its potential location, as well as initial fundraising. The new building will include research laboratories, teaching laboratories, an auditorium, classrooms, offices, common spaces, and a rooftop observatory. The new facilities should express leadership in “green” energy and resource management technology to provide for maximum efficiency in heating/cooling, water use, waste handling, etc. The new building will serve as a hub of multi- and transdisciplinary research for SoMAS and the wider campus community to address the complex challenges of the next decades.





BS

www.earthwatch.org



INFRASTRUCTURE: Develop a modern and inspiring home for SoMAS, and develop, maintain, and operate the facilities and vessels needed to enhance our leadership on coastal challenges.

OBJECTIVE 4.2: Build infrastructure and facilities that will support and enable excellence in teaching and learning.

The state of our current facilities hinders our recruitment efforts at the undergraduate and graduate levels in SoMAS. Both undergraduates and graduate students need newer, more modern labs to learn best practices and execute the best and most competitive research possible. We need to ensure our research vessels and facilities are maintained and updated to serve our educational purposes as well as provide a safe and efficient work environment for faculty, staff, and students.

OBJECTIVE 4.3: Leverage the variety and breadth of our facilities in our outreach efforts.

SoMAS will increase utilization of the facilities across Suffolk County (on the South Campus, on Long Island Sound, and on Shinnecock Bay in Southampton) that provide multiple opportunities and locations to engage the public. These facilities serve as research and educational opportunities for faculty and students but also allow SoMAS to work with other agencies, centers and institutions, and create connections with local and regional communities.

OBJECTIVE 4.4: A Sustainable Plan for our Vessels and Other Infrastructure.

We need a financially sustainable, long-term plan for a large sea-going vessel, either through refitting the R/V Seawolf or acquiring a new vessel, allowing us to meet the needs of increased enrollment in undergraduate courses as well as growing research and outreach requests.

OBJECTIVE 4.5: Digitally Transform SoMAS

SoMAS has entered the digital transformation era where using technology and data to better meet our students' and collaborators' needs is essential. We will increase our online course offerings strategically, especially through our Geospatial Center, and offerings that increase recruitment, retention and graduation rates, employment opportunities, and salaries for our students. Through digitization of physical materials, we will continue to build our collection of online educational resources. SoMAS is designing and delivering digital content for our prospective students. There is also an opportunity to offer online teaching to better serve our underrepresented students including those with disabilities and those who face mobility limitations, and these offers may help recruit these students. We will take an active and personal approach to engage with prospective students through social media, direct emails, and through artificial intelligence and virtual reality technologies that bring our spaces to life through the Internet.

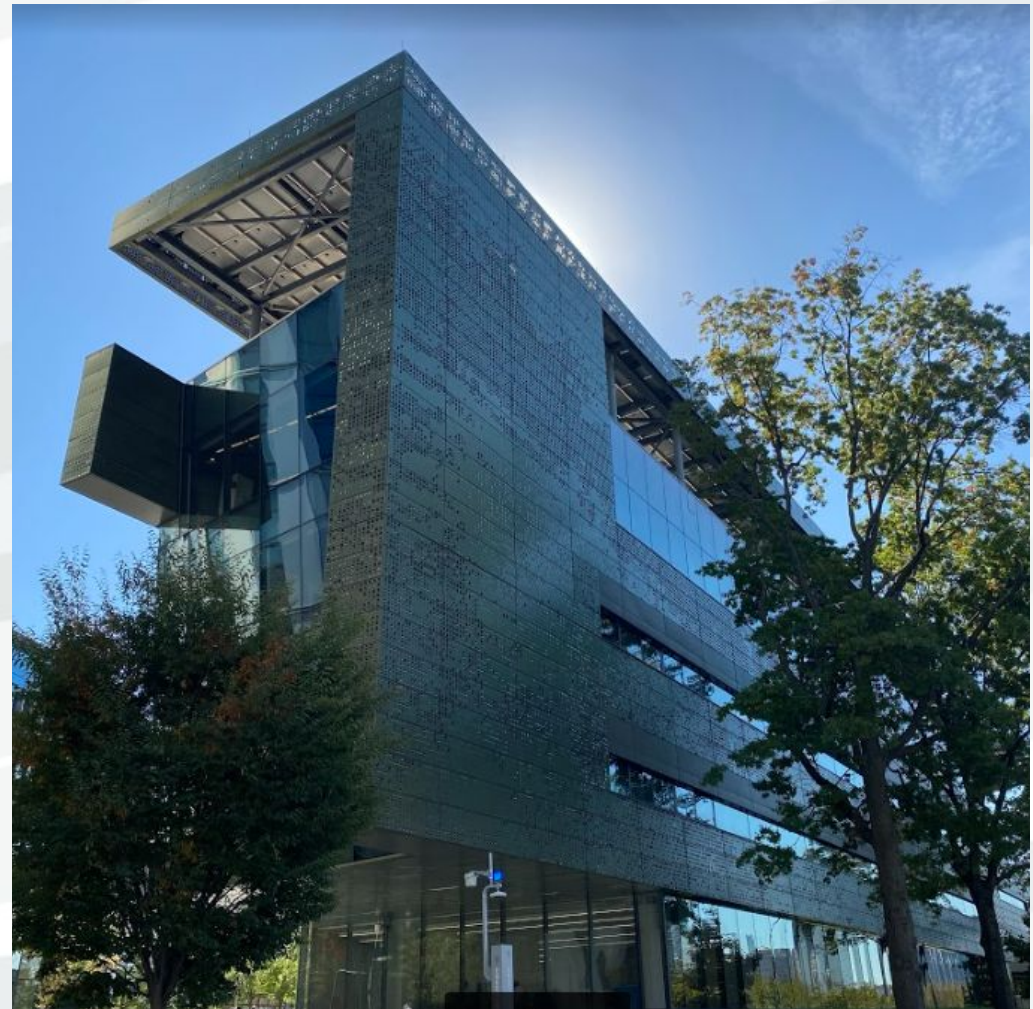
A CASE FOR A NEW AND INNOVATIVE SoMAS BUILDING

The Need

The goal for the next five years is to make SoMAS a world leader in coastal ecosystems and associated processes in natural and built environments to tackle crucial problems, such as climate change and its impacts, and to develop and train the next generation of stewards in these areas. State-of-the-art facilities are an essential component of our resource needs to meet our goals. The conditions of our existing buildings hamper our abilities to capitalize on our strengths, to recruit and retain the best students, staff, and faculty, or to reach our full potential. Our strategic plan includes a roadmap for creation of a new building that will not only provide the facilities we need to meet our strategic goals, but will also support our leadership and vision, showcase sustainable design, and improve connectivity with the rest of campus. SoMAS' diffuse layout on south campus with restricted collaborative space limits interactions among SoMAS students, staff, and faculty, as well as with other SBU academic units. We herein present our case for the integral connection between state-of-the-art facilities and our aspirations for world renowned leadership status in marine, atmospheric, and sustainability sciences.

Our Vision

The new building will be a showcase for our values and commitment to sustainable and zero-carbon-emission building/energy management, and a dramatically reduced waste stream.



A CASE FOR A NEW AND INNOVATIVE SoMAS BUILDING

Building Characteristics:

- Innovative design that will take advantage of state-of-the-art "green" technologies to provide for maximum efficiency in heating/cooling, water use, waste handling etc. It should be LEED platinum, the highest LEED rating. Use of these technologies will, in themselves, serve as demonstration projects for sustainable solutions.
- Demonstrate sustainability through recycled gray water and independent waste management systems.
- Ample natural lighting, open-air ventilation, and solar panels connected to the rooftop for autonomous power production.
- Setting an inspirational example of sustainable design and net-zero construction for SBU and SUNY, consistent with the New York Climate Leadership and Community Protection Act.
- Research laboratories, immersive teaching laboratories, an auditorium, classrooms, offices, and common (indoor and outdoor) spaces for meetings, workshops, demonstrations, etc.
- Design will be conducive to spontaneous and productive interactions among the occupants and engagement with other academic units at SBU and with stakeholders.
- Space for collaborative external partners, such as the National Weather Service, Sea Grant, United States Geological Survey, National Marine Fisheries Service, and industry partners.
- Rooftop laboratory for atmospheric science and instrumentation (weather and chemistry instruments, cameras, safe viewing area).
- Fabrication shop for mechanical and electronic instrumentation.
- A loading dock connected to marine science wet labs, secure storage space for field equipment, a seawater storage and distribution system, and a freight elevator.
- Expected Impacts:
- Better research facilities with improved technical capabilities supporting new and innovative projects, funding, and rankings.
- State-of-the-art teaching facilities and teaching labs.
- More convening space for education, research, and social interactions within SoMAS and with others on campus that can inspire and kindle bold new ideas.
- An inspiring space that communicates forward-looking programs and activities to help recruit the best students, faculty, and staff and grow academic programs.
- Potential for external partners – enhancing research and education, and providing resources for the new building, including venues for community outreach and workshops.
- Will connect to and support the proposed College for a Sustainable Earth, and other leadership initiatives.
- More space and opportunities for visiting scholars/scientists.
- Improve morale, instill a deeper sense of Seawolf and SoMAS pride, and energize current and future environmental leaders.

PEOPLE: Create and leverage new opportunities to hire new faculty and staff to grow our research, education, and outreach opportunities.

It is critical to hire the next generation of faculty and staff to ensure that we advance the research and educational goals of the SoMAS mission, including SoMAS and SBU's shared mission of diversity, equity, and inclusion. Given the large number of faculty retirements SoMAS has experienced over the past five years and projecting its continuation into the next five years, if we do not or cannot hire, SoMAS' base of historical strength in coastal processes will severely deteriorate. Consequently, we will lose our competitive advantage in the pursuit of rapidly emerging and expanding philanthropic, industrial, federal, state, and municipal opportunities in climate and environmental research, and building climate change resilience in New York coastal and urban environments. Furthermore, our ability to offer undergraduate and graduate curricula will be acutely hampered. The faculty and staff must, through its hiring committee each year, develop, establish and clearly communicate our priorities for hiring, and where such investments will take us and the university to new levels of recognition, excellence and competitiveness, in a world that is rapidly changing and manifesting new opportunities.

OBJECTIVE 5.1: Hire faculty and staff in areas critical to the School's current and future research foci, while simultaneously contributing to a diverse faculty complement that better reflects the demographics of our student body.

Responding to coastal zone challenges requires understanding processes in the natural environment and the built environment, as well as developing strategies for mitigation of and adaptation to climate change. Targeted hires in the areas of coastal system processes, changing coastal and marine ecosystems, oceans and human health, climate change and human health, and resilient coastal communities will further develop SoMAS' capacity to understand and respond to global change. Additionally, the success of our research enterprise is highly dependent on acquiring adequate state-supported SoMAS staffing levels. It is important to increase the diversity of our faculty, staff, and students, while articulating a vision and research goals and opportunities that will attract high achievers to Stony Brook University.

OBJECTIVE 5.2: Hire faculty and staff to maintain excellence in undergraduate, graduate, and professional development programs and to lead and contribute to the development of strategic new programs.

Maintaining an optimal ratio of students to full time faculty is critical for innovation and excellence in our academic programs. Excellent staff are essential in recruiting and advising students and in administering academic programs. Continued growth of our educational programs and new educational initiatives motivate hiring new faculty and staff. Faculty are instrumental in recruiting new students at the graduate and undergraduate levels and the continued success of these programs.

OBJECTIVE 5.3: Hiring a staff person to push our outreach efforts further and continue to grow our relationships with government and private partners.

SoMAS faculty, staff, and students *Make Scientific Research Count* through many mechanisms. Strategic hires will coordinate and increase our impact regionally, nationally, and internationally. SoMAS has demonstrated excellence in its outreach efforts by faculty, staff, and students. A staff member to spearhead these outreach activities is a high priority.

OBJECTIVE 5.4: Strengthen our support and mentoring program for faculty and staff.

We seek to nurture a culture of inclusiveness that supports all faculty and staff, but particularly faculty from underrepresented groups. We want our early-career faculty to do more than achieve tenure; we want them to be efficiently promoted to full professor and grow into distinguished professors.

We will strengthen our faculty and staff support and mentoring program that is critical to being a world-class institution.





SoMAS Strategic Planning Committee

This 2022 Strategic plan draws heavily from the 2019 document, which was written in the Fall of 2018/Spring of 2019 by a Strategic Planning Committee consisting of Mark Lang (co-chair), Janet Nye (co-chair), Katherine Aubrecht, Steven Beaupré, Robert Cerrato, Ginny Clancy, Donovan Finn, Hyemi Kim, Daniel Knopf, Kamazima Lwiza, and Lesley Thorne. In 2021-2022, this document was reviewed and updated by a committee consisting of Brian Colle (chair), Katherine Aubrecht, Kurt Bretsch, Robert Cerrato, Michael Frisk, Hyemi Kim, Mark Lang, Alyssa Stansfield, and David Taylor.

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APPENDIX: MAJOR ACCOMPLISHMENTS

Since the implementation of our strategic plan in 2019, the following have been the major accomplishments, noted below as they apply to our Goals:

Goal 1 Discovery

1. Following a campus-wide workshop, attended by 120 people from across the SBU campus (East and West), a proposal was created for a new campus-wide institute, the Institute for Partnerships in Innovation, Resilience, and Environmental Solutions (INSPIRES). INSPIRES aims to be a springboard for a broad and ambitious array of initiatives in environmental research and communication that will establish Stony Brook as a regional and national leader in addressing grand environmental challenges. We raised 500K through a NYS "SAM" grant to renovate space for INSPIRES in the Melville Library. This was followed by a proposal to create a "College for a Sustainable Earth", which was shared with the President and Provost in the summer of 2022. Conversations with University leadership are ongoing, aimed at better defining the parameter space.
2. Demonstrating ongoing opportunities in coastal environment research and protection, SoMAS was recently awarded two SUNY EIP grants, providing faculty start-up resources for a boundary layer meteorologist and for a policy/economics scholar focused on water resources for resilient communities. A \$3M gift from Entergy supports renowned Professor Yong Chen, who is focused on analyzing a 43-year fish survey and ichthyoplankton and water quality database from the Hudson River.
3. New York State is currently investing ~\$9M in a renovation and upgrade of the Flax Pond Marine Laboratory, focusing on the development of a shellfish hatchery. This involves a complete renovation of the laboratories, and installation of a seawater intake system that will provide high quality seawater for research, and for the development of shellfish seed, and the grow-out of juvenile shellfish. That work is nearing completion. The NYS Senate and Assembly passed a bill in the summer of 2022 that would make Flax Pond a New York State sanctuary, protecting our ability to conduct long-term research in the pond. The bill is awaiting the Governor's signature.
4. In January of 2021 it was announced by the EPA that SoMAS was chosen, as a result of our recent bid, to host the Peconic Estuary Partnership (PEP). PEP is one of 28 National Estuaries supported by the National Estuary Program. The mission of PEP is protecting and restoring the Peconic Estuary and its watershed. The PEP office is staffed by a Director and three Program Coordinators, and currently has a total budget from EPA of \$700K/yr, which is then matched by PEP partners (Suffolk County, USGS, DEC, others). The current total PEP budget is \$1.7M/yr.
5. Research spending in SoMAS increased to \$16.8M, a 27% increase over the previous year, considerably larger than the campus-wide average of 20%.
6. We have established new relationships with Orsted and Equinor, the two principal offshore wind developers.
7. In August of 2022, SBU submitted their proposal, "The New York Climate Exchange" to the Governors Island Trust. Kevin Reed played a major role in the proposal development.

APPENDIX: MAJOR ACCOMPLISHMENTS

Goal 2 Education

1. Newly proposed integrated educational programs (Flax Pond related Aquaculture minor, Summer offshore wind training modules, Climate Solutions-related minor) and revised SUS and MAR majors. In January of 2021, we proposed two campus-wide degree programs, together called Climate Solutions. The first of these is an undergraduate minor in Climate Solutions, which includes participating departments from two Schools and two Colleges: SoMAS, Ecology and Evolution, Political Science, Technology and Society, History, Economics, Sociology, and Journalism/Alda Center. These minors require three Core courses (Energy, Climate and Society; World Climate and Atmosphere; Clean Energy) common to all students enrolled in this minor, two elective courses from a broad list, and a three credit Senior capstone course, intended to be either an internship or a collaborative cross-disciplinary research experience. The second program is a BS/MPH program that is a collaboration between SoMAS and the Program in Public Health, called "Climate Solutions and Health", which will connect an existing BS (Track) in Climate Science, and a revised Masters in Public Health, focusing on public health aspects of climate change. In 2021 we conducted a Summer offshore wind course for professionals. That program is continuing.
2. The COVID-19 pandemic forced SUNY to move all classes for online course delivery in spring 2020, and some voluntarily participated in an online teaching course during the summer. SoMAS faculty rose to the challenge of teaching during a pandemic and successfully delivered high quality online, hybrid, in-person, and field courses to our students.
3. A plan to revise the curriculum in research-focused graduate programs was developed by a SoMAS faculty task force, and approved by the School, the University, SUNY, and by the NY State Education Department, and implemented for MS and PhD students entering in Fall 2022. These revisions will allow greater flexibility in graduate coursework, supporting growing interdisciplinarity in graduate education while maintaining disciplinary rigor and breadth. Students, in consultation with their graduate committees, will have the opportunity to tailor their coursework.



APPENDIX: MAJOR ACCOMPLISHMENTS

Goal 3 Leadership

1. As an example for INSPIRES above, we recently submitted a proposal to NSF for a "Coastlines and People" Hub project, entitled "Large-Scale CoPe: COPE-ADAPT-Coastal Planning for Equitable Adaptation And Population Transition", with a \$13M budget. In addition, SoMAS led efforts with the Governors Island SBU proposal for "Governors Island Center for Climate Solutions."
2. Discussions associated with INSPIRES and Governors Island are inspiring the discussion of campus-wide courses and degree programs that combine intellectual content and resources from multiple disciplinary units focused on climate and resilience. These educational programs would be developed in parallel with the efforts to build a zero-carbon campus being led by the College of Engineering and Applied Sciences (CEAS), thereby engaging students in implementation of significant local solutions while they also confront environmental problems facing society more broadly.

Goal 4 Infrastructure

1. New York State is currently investing ~\$9M in a renovation and upgrade of the Flax Pond Marine Laboratory, focusing on the development of a shellfish hatchery.

Goal 5 People

1. By-Laws for SoMAS were drafted, voted on, and implemented. These documents highlight the faculty membership, tenure process, governance, and operations of the school. In addition, "Guidelines for Assessing Faculty and Instructor Effort at SoMAS" workload model is near completion.
2. SoMAS has implemented its own Promotion and Tenure Committee (PTC). The role of the SoMAS PTC is to review promotion files that are forwarded after the SoMAS Faculty vote and objectively evaluate whether the candidate has met SoMAS and SBU expectations for promotion. The PTC procedures are described in detail in the By-Laws.
3. A consistent organizational structure and nomenclature was implemented, with the establishment of three divisions within SoMAS: Atmospheric Science, Marine Science, and Sustainability Studies. Each division is led by a Division Head.
4. Drs. Kirk Cochran and Paul Shepson earned the title of Distinguished Professors in 2021.
5. New standing committees were established to aid in implementing the strategic plan. These include: diversity, equity, and inclusion committee; safety committee; Flax Pond committee; space management committee; hiring committee; undergraduate recruitment committee; and the graduate recruitment committee.
6. Family-leave guidelines for faculty were instituted, in compliance with University-wide policy.

