



National Sea Grant Advisory Board
A Federal Advisory Committee

November 22, 2021

Brian Helmuth
National Sea Grant Advisory Board
Via email

Dear Brian,

This letter comprises the report of the National Sea Grant Advisory Board status review committee appointed by you, in consultation with the National Sea Grant Office, to review and evaluate the University of Guam Sea Grant Coherent Area Program's request to become a Sea Grant Institutional Program.

Our status review committee comprised the following members of the National Sea Grant Advisory Board: Dr. Peter Betzer, Dr. James Murray, and Judith Gray as chair; along with retired Executive Director of the South Carolina Sea Grant Consortium M. Richard DeVoe, and Dr. Rebecca Briggs and Dr. Joshua Brown from the National Sea Grant Office. The committee conducted its review in accordance with the Sea Grant Institutional Status Guidance provided to the University of Guam Coherent Area Program and based on Section 15 CFR Part 918.3 (b), which describes "Guidelines for Sea Grant Colleges and Regional Consortia."

This report is organized into three sections: 1) general findings and recommendations, 2) specific findings with respect to the ten prerequisite evaluation criteria for Institutional Status, and 3) conclusions.

The University of Guam Sea Grant (UOGSG) Letter of Intent for Institutional Status was submitted on June 12, 2020. The review committee evaluated the 2021 Institutional Status application materials and briefing book, the 2018 Site Visit team report and response from UOGSG, the UOGSG 2018-2023 Strategic Plan, and the 2018-20 UOGSG Annual Reports. The review committee also conducted a virtual site visit via ZOOM on October 4-14, 2021, to assess the program's satisfaction of requirements for Institutional Status. This report contains the results of the review.

Respectfully Submitted,

Original Letter Signed

Judith Gray
University of Guam Sea Grant Institutional Status Review Committee
Cc: Dr. Jonathan Pennock, Director, National Sea Grant College Program

Guam Institutional Status Review Committee Report

General Findings and Recommendations

The review committee recommends that the National Sea Grant Advisory Board (NSGAB) communicate to the Director of the National Sea Grant College Program an unqualified recommendation that University of Guam Sea Grant (UOGSG) be designated a Sea Grant Institutional Program.

The committee finds that UOGSG meets the evaluation criteria as set forth in regulation 15 CFR 918.3 for designation as a Sea Grant Institute. This assessment was based on the exceptional briefing materials provided by UOGSG, materials provided by the National Sea Grant Office (NSGO), and the well-coordinated and impressive virtual site visit in October 2021 that included excellent testimonials and briefings from experts and partners.

Findings on Specific Criteria

Per the Sea Grant Institutional Status Application Guidance provided by the NSGO, the review committee assessed the program according to the evaluation criteria and found that the program met the ranking criteria and rated highly in all of the qualifying areas.

1. *Leadership.* *Is the candidate program an intellectual and practical leader in marine, [coastal, and/or Great Lakes] science, engineering, education, and advisory service in its state and region?*

Yes. It is abundantly clear that the UOGSG program meets this criterion hands down. This is reflected in its affiliated and leveraged programs, initiatives, staffing, and resources, and more importantly in its unique role as the ‘go-to’ organization for anything related to marine, coastal, aquatic, and related terrestrial resource use, management, and conservation in Guam and the region. UOGSG is notably valued for its leadership, vision, initiative, and programmatic impact, and has the unqualified support of the University of Guam (UOG) (through President Thomas W. Krise, Senior VP and Provost Anita Enriquez, Vice Provost Rachel Leon Guerrero, and the Dean of the College of Natural and Applied Sciences, Lee Yudin) and of the island (through Governor Lou Leon Guerrero, Lt. Governor Joshua Tenorio, Senator Joe S. San Agustin and Senator Clynton E. Rigdell, and U.S. Congressman Michael San Nicolas). It is a testament to UOGSG that the leaders of Guam’s legislature and the UOG recognize the program’s ability to manage and foster many initiatives beyond Sea Grant’s core activities and to successfully leverage programming, funding, and staffing. Throughout the review we heard that when there is a question, a need, or an opportunity, people immediately think of approaching UOGSG.

The review committee commends Dr. Austin Shelton (Director), Ms. Fran Castro (Associate Director for Operations and Development), and the senior staff of UOGSG, for their leadership in bringing UOGSG to a level where the program is ready for Institutional Status. We look forward to observing the continued growth and maturity of the UOGSG program under their distinctive leadership. The program has generated significant resources (almost \$12 million since 2017) to leverage the (relatively small amount of) Sea Grant federal dollars to expand the reach and impact of UOGSG. In addition, the program has developed significant initiatives consistent with the Sea Grant mission to expand its staff capabilities across the board; that this has occurred over just the last few years and during a global pandemic is highly commendable. The review committee also recognizes the impressive and valuable leadership and programmatic contributions of all the UOGSG staff; it is their personal and passionate

engagement that establishes trust and camaraderie among people and leads to the successful pursuit of mutual goals and objectives important for the citizens of the island and throughout the region.

The UOGSG program is designed to serve and support the territory of Guam, however we recognize that UOGSG's reach is far greater than the island of Guam, influencing two other U.S. territories and three island nations. There is significant potential for regional collaboration and sharing of resources, which reflects the vision and service mission of UOGSG and its university and island leaders. The review committee supports continuing discussions between UOGSG and University of Hawai'i Sea Grant on providing leadership and services to these territories and island nations in a complementary fashion.

2. *Organization.* *Has the candidate program created the necessary management organization to carry on a viable and productive Sea Grant Program, and does the candidate have backing of its administration at a sufficiently high level to fulfill its multidisciplinary and multifaceted mandate?*

Yes. UOGSG has established all the necessary basic organizational components to function as an efficient and productive Sea Grant institutional program – outstanding leaders, proficient staff, university commitment, community support, leveraged programs of significance, high-powered and diverse Advisory Board, effective procedures and processes, strong financial standing, and accountability. UOGSG has demonstrated its ability to handle, manage, and foster the Sea Grant program and many programs beyond. UOGSG is actively expanding its programming, funding, and staffing to foster these initiatives.

It would be important for the program's future growth to consider establishing distinct lines of responsibility and provide increased staff leadership for its research, extension, education, and communication programs. This will enhance their respective identities, effectiveness, and impact.

An important feature of a successful Sea Grant program is its organizational stability and external support for its organizational structure. The review committee respectfully supports Governor Lou Leon Guerrero in her desire to further institutionalize UOGSG for future generations with the expectation that it becomes part of the university's life and future. UOGSG is affiliated with the University of Guam's Center for Island Sustainability (CIS), and together they represent the university's primary programs addressing coastal, marine, aquatic, and related terrestrial resource management and use. The review committee acknowledges the great advantages and synergies, especially leveraging, that the UOGSG-CIS relationship provides and appreciates the strong support of the university in continuing the synergy of these complimentary programs. In addition to CIS, the Guam Green Growth (G3) initiative priorities and goals are well aligned with UOGSG's mission, and the coordination of UOGSG, CIS, and G3 programs helps ensure successful implementation. The review team believes that UOGSG's reporting structure within the university is ideally suited to provide UOGSG the organizational structure and managerial flexibility needed to flourish in the university environment and believes it is important that UOGSG remain organizationally placed where it is now.

The UOGSG Advisory Board provides strategic advice and direction to the program through a distinguished group of individuals. Interactions between and among members of the UOGSG Advisory Board and the UOGSG management team are frequent throughout the year, with formal meetings of the full Advisory Board occurring two-to-three times per year. The role of an Advisory Board as advocates and in identifying key issues is instrumental to the success of a Sea Grant program, and UOGSG is the beneficiary of some brilliant minds clearly serving these roles. It is noteworthy that the UOG President regularly attends UOGSG Advisory Board meetings.

Program leadership is provided by the UOGSG Director, Dr. Shelton, who also serves as the Director of the CIS and holds a tenure-track extension faculty position in the College of Natural and Applied Sciences (CNAS), home of the University's Land Grant College. He directly reports to both CNAS and to the Office of Research and Sponsored Programs. He is also the PI/co-PI of several large grant programs. As the UOGSG program grows, we expect that the challenges of taking advantage of further program/funding opportunities will multiply, placing additional responsibilities on Dr. Shelton and his Associate Director, Ms. Castro. The review committee encourages the UOGSG, through its Advisory Board and by other internal means, to work with the university to ensure that it provides additional support to build senior leadership and mid-level management capacity. This is necessary for UOGSG to effectively grow, expand, manage, account for, and report on its programs and activities. The allocation of additional funding (from Sea Grant and from the Guam legislature) provides opportunities to develop such a 'strategic leadership and management succession' plan.

UOGSG has been developing its research program portfolio over the past three years, which is an important element for Institutional Status designation, and this year, UOGSG has instituted a biennial Request for Proposal process. It was apparent from discussions with UOGSG researchers that the process was supportive and managed as if it were at higher funding levels with strong professionalism and respect. The Director of the Marine Laboratory particularly acknowledged the value of the experience graduate students received in writing grant proposals, a process described as very nurturing and positive.

3. **Relevance.** *Is the candidate program relevant to local, State, regional, or National opportunities and problems in the marine, [coastal, and/or Great Lakes] environment? Important factors in evaluating relevance are the presence of an emphasis on marine, [coastal, and/or Great Lakes] resources, and the extent to which capabilities have been developed to be responsive to that need.*

Yes. UOGSG has become a leader on many of the most relevant issues facing the island and region. The program has an active Advisory Board comprising leaders from governmental, academic, business, and non-governmental organizations, that has a demonstrative influence over the strategic direction of UOGSG. One indication that UOGSG is addressing the most relevant issues is represented by the nearly \$12,000,000 in leveraged funding the program has secured since 2017. Another indication of relevance is the appointment of the UOGSG Director and staff to numerous leadership positions at university, territorial, regional, national, and international committees.

The primary economic drivers on the island include military spending and tourism and UOGSG has established strong ties with the military to provide the science and outreach needed by the military to minimize its environmental footprint. Tourism in Guam is driven by its tropical environment and much of UOGSG's work supports maintaining a pristine environment (e.g., Guam Green Growth, Guam Restoration of Watersheds, Ridge to Reefs, Habitat Conservation, and sea turtle monitoring). Regionally, the University of Guam provides academic opportunities for Micronesia and is the only institution offering Masters degrees. Their leadership on sustainability issues involving island nations has been particularly distinctive and is borne out by the SEAS Island's Alliance, Obama Foundation, Insular Islands Climate Change Act, and their annual Conference on Island Sustainability. In sum, as a former President of the University of Guam stated, "Sea Grant is the glue to the region's growth."

4. **Programmed team approach.** *Does the candidate program have a programmed team approach to solving marine, [coastal, and/or Great Lakes] problems, which includes relevant, high quality, multidisciplinary research with associated educational and [extension]/advisory services capable of producing identifiable results?*

Yes. A strong foundation has been laid by UOGSG in fostering a programmed team approach to their work. Internally, the program has put into place formal and informal mechanisms to foster a programmed team approach to the island's needs and opportunities. Dr. Shelton works with his Advisory Board to discuss strategic directions and program priorities as well as identify the means and the partners important for addressing them. Dr. Shelton and Ms. Castro hold monthly all-hands staff meetings where recent efforts are reviewed and the work for the next month is discussed, coordinated, and prioritized. In addition, UOGSG creates teams/clusters of staff for each program and project, that meet once per week to coordinate efforts, integrate work across program elements, prepare reports, and inform the Director and Associate Director about progress and next steps. UOGSG's internal communication and programmatic team-building efforts appear strong.

Externally, as a Sea Grant Coherent Area Program, UOGSG has focused much of its core Sea Grant work over the past decade on education and engagement efforts. This has been conducted in a truly collaborative fashion with partners at UOG including the CIS and CNAS, along with island and local agencies, federal agencies, businesses, non-governmental organizations, schools, and educational groups. UOGSG's response to stakeholder needs has primarily been through its outreach efforts, which have produced significant and lasting results.

More recently, UOGSG has acquired the resources necessary to initiate investments in Sea Grant-sponsored research activities. Twenty-three proposals have been submitted to four UOGSG's Requests for Proposals; ten have been recommended for funding, with a total of \$393,370 allocated. These efforts are directly aligned with the program's strategic direction and generate science-based information that enhances UOGSG's efforts in informing target audiences and the general public, as well as training undergraduate and graduate students. As the UOGSG program matures, its research portfolio will expand, which will lead to a more balanced Sea Grant program that integrates research, extension, education, training, and communications.

UOGSG has been extremely proactive in securing non-Sea Grant resources and has demonstrated its ability to take on, effectively manage, and implement high profile and island-wide initiatives. These efforts have been designed to be strategic, inclusive, collaborative, integrated, and relevant. As that old adage says, "it takes a village." In our view, UOGSG is the 'town center' of this village.

5. *Education and training.* *Is education and training clearly relevant to National, regional, State and local needs in fields related to marine, coastal, and/or Great Lakes resources? (Education may include pre-college, college, post-graduate, public, and adult levels)*

Yes. The review committee was presented with numerous examples of education and training programs led by UOGSG, some of which were highly innovative. Several presenters gave testimony to UOGSG's skill in 'organizing human capital.' Because education and training opportunities are limited by the modest funding provided by the omnibus proposal, education and training is highly leveraged by UOGSG with funding support originating from a variety of program partners. UOGSG Director, Dr. Shelton, is the Co-PI on the \$20M NSF EPSCOR program which provides an avenue to couple the NSF goal of building research infrastructure in Guam with UOGSG strategic priorities. Funding from NSF INCLUDES supports nearly 100 students who are provided hands-on experience on Guam projects. Additional student science opportunities are provided to more than 600 students through participation in the Guam Science Fair which is co-coordinated by UOGSG. UOGSG was also successful in the Knauss Fellows competition and was awarded its first Knauss Fellow in 2019, who was placed in NOAA's coral reef program.

The omnibus funding has limited direct student hiring beyond a few highly productive undergraduate and graduate students. However, UOGSG uses leveraged funds to provide a host of experiences to students in research, field and laboratory techniques, as well as within every level of program development and management including grant writing; program planning and execution; project presentations at local, national, and international conferences; outreach to the community; and developing education materials. The Marine Laboratory Director lauded the student support by UOGSG saying that the amounts are small but critical and provide students with the experience of writing a grant proposal and managing a small grant, even given the short duration of a Masters' Degree.

Because of the substantial NSF support for students in the sciences, UOGSG has wisely used some of its scarce student support resources to initiate a legal fellowship program in partnership with Blue Ocean Law and has recruited four highly talented law interns to address international rights and environmental justice issues. Of the four legal fellows, one has already found a job with a local Guam agency.

Additionally, UOGSG has developed an important program in teaching traditional local knowledge that currently focuses on indigenous seafaring navigation, the success of which has encouraged the UOG to initiate steps to create a Center for Island Wisdom that may include, for example, traditional medicines and healing. Their parallel pairing of traditional methods/learning with modern education is a model for Sea Grant programs across the nation.

An impressive diversity of community education outreach has been initiated by staff to build environmental literacy in Guam's island communities. As a result, UOGSG staff have an educational footprint at many of the island's public events that focus on the environment. Community outreach that targets students include classroom visits, organizing a science learning center, and development of an educational board game. Public outreach is enhanced by a mobile trailer that encourages community participation and an electric vehicle that highlights sustainability. The TOKA app and Edu Kitchen (Chagi series) also support a sustainability theme. The sea turtle education program reached 3,300 people this past year with some of the outreach targeted for military personnel. It is noteworthy that the program keeps good data on its public outreach efforts and adjusted many of its outreach methods to address the problems caused by the pandemic. The staff that lead educational outreach activities are passionate and showed an exceptional level of enthusiastic community engagement.

6. *Extension and Advisory Services.* *Does the candidate program have a strong program through which information, techniques, and research results from any reliable source, domestic or international, are communicated to, and utilized by, user communities? In addition to the educational and information dissemination role, does the [extension or] advisory service program aid in the identification and communication of user communities' research and educational needs?*

Yes. An effective and far-reaching extension program requires passionate and highly motivated personnel who have impressive interpersonal skills. UOGSG has recruited and comprises professional and motivated staff with these skill sets. The UOGSG Director, Dr. Shelton, has created a culture of community outreach that permeates the program. Seemingly all personnel associated with the program including researchers and the management team conduct some type of outreach related to their work. Through leveraged funding and partnerships, salary support for extension personnel has substantially increased in recent years and the depth and breadth of programming has increased accordingly. Given the growth in extension personnel and programming and the complexity of managing a program with numerous funding sources and partners, it will be important for UOGSG to appoint a separate extension leader to serve as part of the UOGSG management team. This leader will

be a valuable asset to help organize, lead, and direct the robust extension program. As importantly, the appointment will help alleviate the heavy load on the current senior management team and enhance the team's desire for UOGSG's outreach efforts to become more strategic and aligned with its research program.

Among the numerous outreach activities that were introduced, many had demonstrable impacts including Guam's TOKA hotline, which has led to arrests for environmental violations. In addition, UOGSG worked with Let's Ride Guam and other off-road groups to come up with a pledge "Tread Lightly" to minimize erosive damage from off-track vehicles, the plastics education program supported a plastic bag ban on Guam, and the GROW program has led to replanting many acres of degraded habitat with natural plants. Extension expertise is particularly demonstrated through Guam Green Growth (G3), administered under UOGSG, which mobilizes stakeholders at all levels to provide resources to communities to improve their sustainability. Other evidence of significant community relationships includes appointments to high level boards and commissions by outreach staff (e.g., Governor's Economic Diversification Task Force Aquaculture Chair, Micronesia Climate Change Alliance Board, Northern Guam Soil and Water Conservation District, and the Parks and Recreation Commission).

The extension program also benefits from an emergent communications program whose leader and staff have extensive connections to Guam's mass media infrastructure. The review committee was provided with many examples of media coverage of UOGSG events and the virtual status review included numerous video-produced lead-ins to panel discussions. Significantly, the communications products meshed nicely with the UOGSG's strategic objectives. The review committee believes that the UOGSG's communications team could set an example for the entire Sea Grant network on the particular ways a program gets its message out via radio and television outlets. As a former UOG President stated, "probably one half of all science information provided to the public on the island of Guam derives from UOGSG."

- 7. Relationships.** *Does the candidate program have close ties with Federal agencies, State agencies and administrations, local authorities, business and industry, and other educational institutions? Do these ties: (i) ensure the relevance of its programs, (ii) give assistance to the broadest possible audience, (iii) involve a broad pool of talent in providing assistance and (iv) assist others in developing research and management competence? (The extent and quality of an institution's relationships are critical factors in evaluating the institutional program)*

Yes. It is clear from the UOGSG briefing book and from their presentations that UOGSG has developed an extensive list of important local, regional, and international relationships. Especially impressive were presentations by members of the Guam Legislature, the Governor, Lt. Governor, and U.S. Congressman; academic leaders of the University of Guam; and the UOGSG Advisory Board. Indeed, the university's chief academic officers view UOGSG as a major asset. The recent legislative award to UOGSG (\$500,000) and the enthusiastic presentation of Governor Leon Guerrero left little question that Guam's political leaders believe the program is a key to a resilient Guam.

UOGSG's productive interactions with UOG faculty are evident and the NSF INCLUDES award is helping strengthen these relationships. UOGSG also interacts with an extensive group of territorial and local agencies including Guam Environmental Protection Agency, Guam Bureau of Statistics and Plans, Guam Visitors Bureau, Guam Economic Development Authority, and the Mayors Council of Guam. In addition, UOGSG has benefited from partnering with several local businesses including Landscape Management Systems and the Guam Power Authority. All of the partners have contributed importantly to UOGSG. Of particular note, UOGSG has received large awards from the Office of the

Governor, Guam Environmental Protection Agency, and the Guam Economic Development Authority to support their active involvement with G3. UOGSG's relationships are extensive and the host of productive interactions are a tribute to the UOG and the National Sea Grant College Program.

UOG President Krise and Governor Leon Guerrero both mentioned their belief that UOGSG is building important regional collaborations throughout the western Pacific involving aquaculture, coral reefs, climate resilience, and sustainability. UOGSG has a productive relationship with the University of Hawai'i focused on aquaculture. With aquaculture emerging as an important need for their island, UOGSG's collaboration with other islands of the western Pacific will be key to aquaculture becoming an important food source and economic driver in the region. In this regard, it is important to underscore the participation of The Nature Conservancy, a not for profit that is involved globally.

UOGSG has strong connections to other Sea Grant programs. In addition to Hawai'i, they interact regularly with Korea Sea Grant. They have established linkages with the Sea Grant programs in Puerto Rico and Maryland as co-PI on NSF INCLUDES to bring racial diversity and equality to STEM education. UOGSG works with several Pacific Sea Grant programs to, among other initiatives, develop solutions to the social and cultural impacts of climate change to ensure that policies support native lifestyles.

8. *Productivity.* *Has the candidate program demonstrated the degree of productivity (or research results, reports, employed students, service to State agencies and industry, etc.) commensurate with the length of its Sea Grant operations and the level of funding under which it has worked?*

Yes. The productivity of UOGSG has increased with its increases in funding. The review committee was impressed by the number, depth, and breadth of UOGSG's programs and the enthusiasm with which the staff approach challenges. In response to the 2018 site visit, UOGSG has addressed all of the review's recommendations and, notably, they have successfully managed four research competitions and have established a process that will serve them well in the future. When discussing the recent evolution of the program, the Director of University of Hawai'i Sea Grant, Darren Lerner, remarked, "I cannot believe what I have seen."

Lt. Governor Joshua Tenorio emphasized the productivity of UOGSG when he described how he works with UOGSG to use science to set priorities and how UOGSG helps provide "solutions to priority issues, moving research into action, policy into practice, and mobilizing communities into action." He relies on UOGSG to channel resources into programs on conservation and sustainability and to bridge the gap between the government and the people.

In addition to the many local and federal agency collaborations already described, there is a large military presence in Guam that is currently being expanded. UOGSG is working with the U.S. Navy and the U.S. Air Force on issues relating to the management of their lands and waters for habitat conservation and endangered species protection (e.g., sea turtles), as well as environmental impacts of military operations. UOGSG outreach bridges communication between the local communities and their military neighbors.

It is obvious to the review committee that UOGSG is a highly productive enterprise, creating exceptional value for the citizens of Guam and the surrounding islands. However, this productivity is not reflected in the UOGSG Annual Reports used by the NSGO for capturing UOGSG's accomplishments and needs. The level of productivity presented in the review materials and presentations during this review far exceeds what has been reported by the program in the Annual

Reports. In the future, UOGSG should improve its reporting to reflect the extensive depth and breadth of its work.

In its initial manifestation, the UOGSG was a small, narrow program. Dr. Shelton and his staff have transformed it into a fully functioning Sea Grant program. The progress and accomplishments since the recent site visit in 2018 are remarkable, particularly given a global pandemic. The program's high productivity is a direct result of the commitment of the UOG, the Guam government and legislature, and especially the UOGSG leaders, Dr. Shelton and Ms. Castro, and their staff. The review revealed the passion and professionalism they bring to the program.

- 9. *Support.*** *Does the candidate program have the ability to obtain matching funds from non-Federal sources, such as state legislatures, university management, state agencies, business, and industry? A diversity of matching fund sources is encouraged as a sign of program vitality and the ability to meet the Sea Grant requirement that funds for the general programs be matched with at least one non-Federal dollar for every two Federal dollars.*

Yes. UOGSG has an extensive group of supporters that includes elected officials (federal, territorial, and local), the University of Guam, federal agencies, territorial agencies, local business groups, and non-governmental organizations. In 2021, Guam's legislature allocated substantial funding for UOGSG and the review committee was especially impressed with the enthusiastic and knowledgeable support of Governor Leon Guerrero and Senators San Agustin and Ridgell. The two senators were key to generating a \$500,000 allocation for G3 and \$500,000 for UOGSG. Both were impressed with UOGSG's initiatives in education, renewable energy, and food security (aquaculture and hydroponics) and felt the program could become a model for many island nations in the western Pacific. Governor Leon Guerrero's parting words to our review committee were "Thank God we have Sea Grant." U.S. Congressman San Nicolas was most supportive of UOGSG's initiatives with aquaculture and hydroponics, which could reduce the imports of seafood and vegetables necessary to sustain Guam's population (circa \$10,000,000/year). The review committee was especially impressed to be part of a review where a Governor, Lt. Governor, state/territory senators, and a U.S. congressman spoke; a testimony to uncommon political support.

The UOG also provides important financial backing for UOGSG that includes three buildings on the University of Guam Campus and excellent support from the UOG President's office, the Dean of UOG/NCAS, UOG's Office of Research and Sponsored Programs, and the Research Corporation of UOG. President Krise felt Sea Grant was not only an important part of the UOG but also of the island and its inhabitants as well as a key to increased regional collaboration. His regular participation at UOGSG Advisory Board meetings and special events underscores his ongoing support of UOGSG. And the Advisory Board left little question that they enthusiastically participate in assisting the program.

The G3 program is a major focus of the Office of the Governor, and in the past two years has awarded UOGSG \$850,000. Additionally, the Guam Economic Development Authority also awarded \$100,000 to the initiative. The UOG Foundation is also active on behalf of UOGSG and raises funds for the annual Conference on Island Sustainability. The Guam Power Authority transformed UOGSG's campus headquarters into a model for energy efficiency and provided an electric vehicle. Guam's Bureau of Statistics and Plans purchased a mobile trailer that UOGSG uses during visits to island communities as they highlight the importance of Watershed Restoration. In addition, a local business group, Landscape Management Systems, provided a aquaponics system that UOGSG is using as they help the Mayors Councils of Guam expand the group of locals who grow their own vegetables.

UOGSG is actively collaborating with the University of Hawai'i's Sea Grant Program in Aquaculture and Hawai'i Sea Grant provides financial support for an aquaculture extension agent stationed in Guam. The agent serves on the Aquaculture Workforce Group that was established by Guam's Economic Development Authority and is actively involved in developing a regional thrust in aquaculture.

Over the previous five years (2017-2021), UOGSG has received significant federal support from the Department of the Interior, Environmental Protection Agency, Forest Service, Department of Defense, and the National Science Foundation.

10. Continuity of high performance. *Does the candidate program demonstrate the ability to continue the pursuit of excellence and sustain the following? (i) high performance in marine, [coastal, and/or Great Lakes] research, education, training, and advisory services; (ii) leadership in marine, [coastal, and/or Great Lakes] activities including coordinated planning and cooperative work with local, state, regional, and Federal agencies, other Sea Grant programs, and non-Sea Grant universities; (iii) effective management framework and application of institutional resources to the achievement of Sea Grant objectives; (iv) long-term plans for research, education, training, and [extension/] advisory services consistent with Sea Grant goals and objectives; (v) furtherance of the Sea Grant concept and the full development of its potential within the institution and the state; (vi) adequate and stable matching financial support for the program from non-Federal sources; and (vii) effective system to control the quality of its Sea Grant programs.*

Yes. In many ways, UOGSG is a model for others and in our view is not only likely to sustain but expand its outstanding record. The UOGSG leaders, Dr. Shelton and Ms. Castro, have been instrumental in effectively and successfully advancing the program locally, regionally, and internationally. There is extensive legislative support for the program. The UOG's academic leaders are most supportive as are the faculty who laude the program for the significant assistance UOGSG has provided as it initiated and expanded its emerging research program. UOGSG has a strong and active Advisory Board comprising leaders from governmental, academic, business, and non-governmental organizations that have a demonstrative influence over the strategic direction of UOGSG.

The program has undergone a host of major changes and yet has somehow managed to anticipate and keep abreast of the substantive challenges confronting them, the university, Guam, and Micronesia. UOGSG will undoubtedly face other challenges, and the active involvement of their Advisory Board in long-term planning will help them sustain their positive trajectory.

Most successful organizations are characterized by a palpable esprit de corps. Over the eight days the program was reviewed, the dedication and the willingness of the UOGSG staff to go 'above and beyond' was evident. Suffice it to say this is a distinctive tribute to UOGSG and all its supporters. We trust the university and legislature will continue to enhance the program's stability and ability to grow.

Conclusions

The NSGAB's Guam Sea Grant Institutional Status Review Committee found strong support for UOGSG from the Governor and Lt. Governor of Guam, the Guam Legislature, their U.S. Congressman, the academic leaders of the University of Guam, the UOGSG Advisory Board, several federal and territorial agencies, other Sea Grant programs, non-profit organizations, and local businesses. Key officials from the university, agencies, congressional offices, partner programs, and the Governor and Lt. Governor participated in our review. The truly collaborative relationships between UOGSG and its partner organizations will be a great asset to the territory of Guam as they

connect throughout Micronesia and the Pacific seeking opportunities to advance the region's goals for natural resource management, climate resilience, food security, workforce development, and education. The leaders and staff of UOGSG are chairs, co-chairs, and participants in steering and program management committees at the university, in Guam, across the region, nationally, and internationally. They bring a special authenticity to their endeavors.

The review committee finds that UOGSG meets all the requirements for Institutional status, and unanimously recommends they be granted the designation of Sea Grant Institute. It certainly would be timely for UOGSG to be designated a Sea Grant Institute on the 70th anniversary of the founding of the UOG and the 50th anniversary of the UOG becoming a Land Grant university.