

January 16, 2017

Daniel M. Filer, M.B.A., Ed.D.
Chesapeake Watershed CESU Research Coordinator
National Park Service
University of Maryland Center for Environmental Science – Appalachian Laboratory
301 Braddock Road – Room 304
Frostburg, MD 21532

Dear Dr. Filer:

I write to express my unequivocal support for St. Mary's College of Maryland's application for membership in the Chesapeake Watershed Cooperative Ecosystems Studies Unit.

St. Mary's College of Maryland enjoys a campus located on the beautiful and historic St. Mary's River, a river within the Chesapeake Watershed. Metaphorically, as the St. Mary's River itself flows to contribute to the Chesapeake Bay, so too does the College contribute to the preservation and conservation of the historic Chesapeake Watershed. Our natural science and environmental studies faculty engage their students in the service of and research on this remarkable natural resource. Our broader faculty, staff, students, and community members document this national treasure through our publication *SlackWater*, a multidisciplinary journal dedicated to the overlapping habitats supporting life, work, and play in Tidewater Maryland and the broader Chesapeake Watershed.

Environmental consciousness is core to our ethos as a college; sciences, arts, and humanities collaborate to explore the region's landscapes and waterways through environmental evidence, historical documents, literature, and personal expression. We are confident that the St. Mary's community can and will contribute meaningfully to the mission of the Chesapeake Watershed Cooperative Ecosystem Studies Unit. With the daily inspiration of our waterfront campus, we are dedicated to the stewardship of the Chesapeake Watershed for generations to come.

Please accept my heartfelt endorsement of this application for membership.

Sincerely,



Michael R. Wick, PhD
Provost and Dean of Faculty

- I. **Expression of desire to enroll in the CESU as a new partner institution/organization and confirmation that the institution/organization has read the CESU agreement and agrees to support the CESU mission and goals and fulfill the roles and responsibilities of a nonfederal partner, as described in the CESU agreement.**

St. Mary's College of Maryland (or "the College", "St. Mary's College") is expressing its interest to enroll in the Chesapeake Watershed Cooperative Ecosystem Studies Unit (CHWA CESU) as a new non-federal partner institution. We have read the Cooperative Ecosystem Studies Unit (CESU) agreement and we agree to support the CESU mission and goals. We will fulfill the roles and responsibilities of a non-federal partner and the primary contact, Dr. Sabine L. Dillingham, will work with faculty, students, staff and the administration to ensure that St. Mary's College meets these expectations.

- II. **Description of the institution/organization, its mission, and the primary focus of collaborative activities to be supported through the CESU in the context of the CESU mission** (see additional information by following embedded *links*).

Founded on the site of Maryland's first capital, St. Mary's College of Maryland stands as a living legacy to the ideals of freedom and inclusiveness. The College is Maryland's honors college, a selective, public liberal arts college--a vibrant community of scholars and learners. We foster a rigorous and innovative curriculum; experiential learning; scholarship and creativity; close mentoring relationships; and a community dedicated to honesty, civility, and integrity. We are committed to diversity, access, and affordability. Our students, faculty, and staff serve local, national, and global communities, and cultivate and promote social responsibility. Our core values include environmental stewardship, civility, and respect for self, others, and the environment.

The College's *mission and core values* align well with the CESU mission. Our beautiful residential campus on the banks of the St. Mary's River inspires our work, our play, and our commitment to the environment. We are a leader in environmental initiatives among higher education institutions. Our beautiful waterfront campus gives us the opportunity to explore various environmental projects from oyster preservation to Chesapeake Bay restoration. We do our utmost to uphold environmental conservation and *sustainability* practices on campus. Those goals and values culminated in the recent addition of an *environmental studies program* that prepares students to address complex environmental problems requiring knowledge and skills from multiple science, social science, and humanities disciplines. Our commitment to environmental stewardship is also reflected in the broad research interests of our faculty, which range from *historical archaeology of the Chesapeake region* to *coastal ecology*. As a small, public, liberal arts honors college, our participation in the Cooperative Ecosystem Studies Unit would diversify CESU's non-federal partner institutions while engaging many dedicated St. Mary's College student and faculty researchers to address natural and cultural heritage resource issues in the Chesapeake Watershed.

- III. **Description or list of the primary programs, departments, or other institutional divisions of relevance to federal land management, environmental, and research agencies that will likely be engaged in CESU activities. Include website addresses for further information, as appropriate.**

Please follow the included *links* for detailed descriptions of departments and programs that will likely be engaged in CESU activities:

Anthropology

Biology

Chemistry and Biochemistry

Environmental Studies

Mathematics and Computer Science

Materials Science

Museum Studies

IV. A list of and brief description of the staff or faculty with expertise in disciplines and subject areas of relevance to federal land management, environmental, and research agencies (do not submit CVs).

Dr. Geoffrey M Bowers, Assistant Professor of Chemistry, studies physical geochemistry through collaborative, multi-institutional interdisciplinary teams. His work has critically important implications in non-conventional methane extraction, CO₂ mitigation, nutrient cycling, environmental remediation, environmental transport modeling, nuclear waste remediation, and industrial fouling.

Dr. Jeffrey J Byrd, Professor of Biology, is a microbial ecologist, specializing in microbiology and virology. His research interests include the interaction of non-obligate bacterial predators in soil, survival mechanisms of pathogenic bacteria in the environment, antimicrobial agents associated with soft corals, and detection and enumeration of microorganisms in soil and aquatic environments.

Dr. Karen Crawford, Professor of Biology, studies the mechanisms that direct form and function in developing embryos and regenerating animals. At St. Mary's College she studies limb regeneration in salamanders and worms, while her summer research at the Marine Biological Laboratory, Woods Hole, MA, explores early embryogenesis in cephalopods.

Dr. Kirsten Deane-Coe, Assistant Professor of Biology, focuses her lab's research on the physiological ecology of plants, i.e. how plants interact with their environment and how the environment influences plant processes. Dr. Deane-Coe is particularly interested in the effects of global change on terrestrial ecosystems and how global change factors such as increased temperatures and altered hydrology influence plant performance and survival.

Dr. Kevin Emerson, Assistant Professor of Biology, focuses on two separate, though related questions: (1) how does the environment interact with the genome to control developmental and physiological processes and (2) how does the evolution of these interactions allow for the proliferation of organisms across diverse environments throughout the temperate zone?

Dr. Liza Gijanto, Associate Professor of Anthropology, focuses on socio-economic interaction and expressions of status in the Atlantic world. She recently began work at Cremona Estate in St. Mary's County leading student-directed research on the 17th and 18th century plantation site.

Dr. Cassie Gurbisz, Assistant Professor of Environmental Studies, researches coastal and estuarine systems ecology including seagrass and marsh dynamics and resilience. Dr. Gurbisz is currently collaborating with researchers at the University of Maryland Center for Environmental Science to quantify nutrient sequestration in Chesapeake Bay submersed aquatic vegetation beds.

Dr. Amy Henderson, Assistant Professor of Economics, studies environmental and natural resource valuation. Two of Dr. Henderson's recent projects include "Social and Environmental Justice Impacts of Industrial Agriculture" and "Temporal Stability of Relative Water Quality: Implications for hedonic price estimates".

Dr. Robert Kelley, Assistant Professor of Computer Science, conducts research in static and interactive data visualization and machine learning, interaction design, and wireless sensor networks. Dr. Kelley actively seeks non-traditional applications for computer science tools.

Dr. Julia A King, Professor of Anthropology, has 30 years' experience studying, writing, and teaching about historical archaeology and Chesapeake history and culture. Her book "Archaeology, Narrative, and the Politics of the Past: The View from Southern Maryland", received a Book Award from the American Association of State and Local History in 2013.

Dr. Ellen Kohl, Assistant Professor of Environmental Studies, is interested in how multiple, intersecting forms of oppression impact human-environment interactions. She examines how compounding socio-spatial processes, developed and perpetuated by urban and environmental policies, contribute to places of persistent injustice in the United States.

Dr. Randolph K Larsen, Professor of Chemistry and Environmental Studies Program Coordinator, has three focal areas of research that center around the use of analytical chemistry to answer questions concerning the trace composition of matter. Dr. Larsen's research areas are: environmental organic chemistry, environmental forensics, and archeometry.

Dr. Kristy Lewis, Assistant Professor of Biology, investigates the ecology of natural and anthropogenic induced disturbances on aquatic food webs and coastal communities. Specifically, she seeks to understand how variability in ecosystem processes impact aquatic organisms and local communities through a combination of field and experimental observations, quantitative and modeling strategies, and analysis of long-term historical datasets.

Dr. Jessica Malisch, Assistant Professor of Biology, studies the vertebrate stress response and the effects of stress on physiology and behavior. Dr. Malisch's most recent work examines animals' decision-making during inclement weather.

Dr. Pamela S Mertz, Professor of Chemistry & Biochemistry, is a biochemist who is a Regional Director (Southeast region) for the American Society for Biochemistry and Molecular Biology (ASBMB) Undergraduate Affiliate Network. Dr. Mertz serves on the steering committee for the ASBMB Research Coordination Network in Undergraduate Biology Education. Her research focuses on lipid metabolism as well as intracellular synthesis of drugs.

Dr. Barry Muchnick, Assistant Professor of Environmental Studies, is also the Director of the Environmental Citizenship Speaker Series and an expert in applied sustainability who recently spearheaded a collaborative project with local community groups to guide students through planning and building two environmentally friendly "tiny" homes. His dynamic scholarly agenda is centered on connecting the physical and political dimensions of the environment to the cultural, ideological, and aesthetic ways nature influences our imaginative and actual lives.

Dr. Jordan Price, Professor of Biology and Chair of Biology Department, conducts research combining detailed observations of animal behavior in the field with molecular analyses in the lab to test hypotheses about the evolution of animal communication.

Dr. Shanen M Sherrer, Assistant Professor of Biochemistry, seeks to identify and to elucidate *in vivo* functions of proteins shared in multiple DNA processing pathways affected by environmental hazards. Currently, the Sherrer lab is studying the biological outcomes of DNA damage caused by environmental sources.

Mr. Scott Strickland, Adjunct Instructor of Anthropology, frequently provides Geographical Information Systems (GIS) and project management support to Dr. King's projects. His research interests include settlement patterning and spatial analysis using GIS, early English colonial history, and the study of Anglo-Native relations in the Chesapeake Bay region.

Dr. Troy Townsend, Assistant Professor of Chemistry, is interested in solar energy, and is currently involved with several projects including spray-on solar modules and solution-processed optoelectronics. His research investigates the design, synthesis, and device applications for inorganic nanocrystals with a focus on energy and power systems.

V. For academic institutions, include a description of student demographics and the institution’s status as a minority-serving institution (e.g., as defined by the U.S. Department of Education).

St. Mary’s is committed to excellent undergraduate education, diversity, access, and affordability, and we produce results. *“Plainly, St. Mary’s has achieved excellent outcomes for its students: its six-year graduation rates are among the highest for public colleges in Maryland, and an impressive number of its graduates go on to graduate study and successfully enter the workforce ... St. Mary’s mission of providing an affordable and accessible education to a diverse student population is clearly articulated in its admissions policies and practices, as well as in its retention and student success initiatives. In the Team’s judgment, this congruence between mission and practice is one of the College’s strengths”* (2016 report of the Middle States Commission of Higher Education).

St. Mary’s College student demographics for the 2016-17 reporting year are shown in the tables below. These data are reported annually as part of St. Mary’s College’s IPEDS report and other documents. St. Mary’s College has a relatively high proportion of female students (58%, Fall 2017), and while the majority of students are white (70%), several other ethnicities are well-represented. Many of our students (19%) are first-generation students, with neither parent having earned a four-year degree. The majority (93%) of students attending St. Mary’s College are Maryland residents. Over half (51%) of St. Mary’s College students borrow from federal loan programs while in college, and 68% of the 2013 cohort graduated within four years. St. Mary’s College is not classified as a minority-serving institution.

Table 1. Enrollment and Degrees Awarded

Unduplicated head count (total), Fall 2017	1,598
Unduplicated headcount (undergraduate), Fall 2017	1,570
Number of Bachelor’s degrees awarded, 2016-17	414
Number of Master’s degrees awarded, 2016-17	30

Table 2. Undergraduate student enrollment demographics, Fall 2017

Female students (%)	58
American Indian or Alaska Native (%)	<1
Asian (%)	4
Black or African American (%)	9
Hispanic/Latino (%)	8
Two or more races (%)	5
Unknown race/ethnicity (%)	2
White (%)	70

Table 3. Undergraduate financial aid

Any institutional financial aid (%)	84
Pell grant (%)	21
Federal loans (%)	51

Table 4. Retention Rates

Full-time, second-year student retention (2016 cohort; %)	87
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Table 5. Bachelor's degree graduation rates for full-time, first-time undergraduate students

4 years (2013 cohort; %)	68
6 years (2011 cohort; %)	78

VI. Description or list of facilities, equipment, centers, or institutes that would provide support to the research, technical assistance, or educational activities of relevance to federal land management, environmental, and research agencies that will be engaged in CESU activities.

The College has 52 buildings, of which 26 are academic and administrative, and 26 are residential, totaling 588,792 net square feet, including 54,635 square feet of laboratory space for student lab instruction and faculty and student research. We consistently aim to create and maintain modern facilities, systems, and infrastructure as reflected in our *strategic* and *facilities master* plans. Students and faculty have free access to our state of the art facilities and equipment and the following descriptions and/or *links* highlight those of particular interest to CESU activities:

Biology

The Department of Biology shares teaching and research space with physics and mathematics and computer science in Schaefer Hall. They also utilize space in the Muldoon River Center (opened 2008) that includes a research laboratory, office, storage space for field equipment and a shared classroom. The biologists have seven dedicated teaching labs and twelve faculty research spaces, which are also utilized for student research projects. Specialized research spaces include a BioSafety Level-2 facility, environmental chambers, scanning electron microscopy and aquatic laboratory space and a greenhouse. Facilities and equipment are shared and use is free of charge, and specialized equipment ranges from the scanning electron microscope to a research boat; other typical research equipment include an Oxymax respirometer, image analyzer, microscope cameras, nanodrop spectrophotometer, fluorometer, and HPLC.

Chemistry & Biochemistry and Materials Science

The Department of Chemistry & Biochemistry is housed mostly in Goodpaster Hall, a LEED Silver building, which opened in January 2008. The department has approximately 8,230 square feet of total space assigned to teaching and research laboratories, instrument rooms, and offices; and there are four laboratories available for student and faculty research (800, 760, and 472 sq. ft.). Cross-disciplinary research collaborations with museum studies and art faculty (e.g., chemical analysis of art and archaeological objects) are enabled by new research labs and equipment (e.g., a confocal Raman microscope and Fourier transform infrared spectrometer).

Follow this link for details: [***Chemistry and Biochemistry Facilities***](#)

Follow this link for details: [***Nanofabrication Laboratory***](#)

Museum Studies and Anthropology

Although St. Mary's College is a four-year school, a close association with our sister state agency, Historic St. Mary's City, has led to a partnership that includes, among other things, shared archaeological laboratory and curation space in a brand new academic building (Anne Arundel Hall, 2016). St. Mary's College's portion of the building houses several academic programs and departments, including the Department of Anthropology. The space includes washrooms, dedicated laboratory space, environmentally controlled and secure curation space, and sophisticated analytical equipment including an X-Ray machine, a stationary XRF instrument, and a Raman spectrometer. In light of the extensive archaeological research activities at the College, the Department of Anthropology has recently adopted an Archaeological Collections Policy ensuring that all collections are handled and stored according to the highest professional standards.

Museum Studies Materials Characterization Laboratory: The Museum Studies Materials Characterization Laboratory is an 800 square feet designated laboratory space on the second floor of Anne Arundel Hall West that has six instrumental workstations along with table space to accommodate ten researchers. The instrument stations are set up to control the following instruments: a Nicolet 6700 FTIR equipped with a Specac Golden Gate ATR; a Midex M XRF Spectrometer, a Horiba Confocal Raman Microscope, a TA Sorption Analyzer, a TA TGA/DSC, and a technical photography station. The lab is also equipped with movable fume "snorkels", storage space, and A/V equipment.

Archaeology Laboratory and Anthropology Department Storage: The Anthropology Department has 500 square feet of designated laboratory space on the first floor of Anne Arundel Hall West that can accommodate up to 20 individuals while processing and analyzing archaeological materials. This space includes a designated area for washing and drying artifacts including ionized water and sink equipped with a silt trap. The lab is equipped with movable fume "snorkels" to accommodate the use of chemicals for mending, labeling, and minor curation projects. The Anthropology Department also has a small Student Project Room equipped with smartboards and additional work and storage space for artifact analysis and collections housing.

Psychology and Animal Facilities

Follow this link for details: [***Psychology Facilities***](#)

Animal Facilities: The St. Mary's Behavioral Neuroscience Facility is a large laboratory complex that contains housing for approximately 400 animals (rats and occasional mice). It also has a wet lab, and facilities and equipment for small animal surgery and histology. Seven independent well-equipped testing rooms are available for behavioral observations and experiments. The animal caretaker/technician's office and a laboratory classroom are connected to the Behavioral Neuroscience Laboratory; the latter is heavily used for research purposes and for two laboratory courses: Psychology of Learning, and Biological Psychology, and for an occasional summer practicum course on Laboratory Skills. The St. Mary's Institutional Animal Care and Use Committee (IACUC), which includes a local veterinarian, oversees and evaluates all aspects of our animal care and use according to U.S. Federal law.

Physics

Follow this link for details: [***Physics Teaching and Research Facilities***](#)

General Facilities

Computer and Office Facilities: The offices of our faculty and departmental support staff are equipped with computers that are networked to printers. The Office of Information Technology and its staff maintain a reliable high speed wired and wireless network infrastructure connecting computers and printers spanning offices, labs and learning spaces across campus. The network has redundant high-speed connections to the Internet, including Internet2. All office computers are installed with the latest Microsoft Office suite, Google Chrome, Adobe Creative Suite and Sophos Anti-Virus software. St. Mary's College of Maryland is a Google Apps for Education school, and all college employees are provided full access to the Google Apps suite along with their email. Google Drive allows for unlimited storage for all faculty and staff. In addition, the Office of Information Technology maintains campus data storage solutions that are backed up daily.

Other: The St. Mary's College Library is an essential resource for our undergraduate students and faculty members; information literacy is one of four fundamental skills infused throughout our liberal arts core curriculum. The College's library is a member of the USMAI, a state-wide consortium of 16 campuses. Direct borrowing of books through this consortium is supplemented by interlibrary loan and document delivery. The consortial online catalog (catalogusmai) and over 85 research databases and full-text online resources are accessible from on- or off-campus. St. Mary's College of Maryland Archive is located in a climate-controlled space with fire suppression and is open to the public during posted hours and by appointment. The Archive can provide data storage (not management) of research data, or raw data.

The College's Media Center features a digital sound/video production and editing studio, multimedia laboratory, and classrooms equipped for media presentations. The lab provides access to multimedia authoring software, scanners, and other equipment. As needed, instruction in research techniques, database use, digital equipment use, and multimedia software applications are available.

St. Mary's College hosts a web site at www.smcm.edu that is used to highlight scholarly accomplishments, such as the planned outcomes of this project, hence can assist with basic dissemination.

The St. Mary's College **Office of Research and Sponsored Programs** in collaboration with the Offices of Business and Advancement provide comprehensive pre-and post-award support and management.

VII. Description or list of past research, technical assistance, and educational services supported through federal financial assistance awards that are of relevance to federal land management, environmental, and research agencies that will be engaged in CESU activities.

Following is a sequential list of such federal assistance awards since 2009, including those from pass-through entities and non-profits collaborating with federal agencies:

National Transportation Center - Susceptibility of Eastern Oyster Early Life Stages to Road Surface Polycyclic Aromatic Hydrocarbons \$40,000

National Endowment for the Humanities - Colonial Encounters: Lower Potomac River at Contact, 1500-1720 AD \$190,000

Maryland Historical Trust - An Archaeological Survey of Important Piscataway Landscapes \$125,000

Maryland Industrial Partnership - In-situ Oyster (*Crassostrea virginica*) Setting: An On-Site, Cost Effective, and Environmentally-Friendly Alternative to Traditional Land Based Remote Setting Methods \$73,766 (FY13) and \$70,244 (FY14)

St. Mary's County, MD - Assessing Known Archaeological Resources in St. Mary's County \$16,600

Charles County, MD - Test Excavation at Zekiah Fort, MD \$25,000

National Park Service - A Proposal for Identifying and Representing the Nanjemoy Creek Watershed Indigenous Cultural Landscape \$25,000

U.S. Environmental Protection Agency/Maryland Department of Natural Resources - Chesapeake Bay Submerged Aquatic Vegetation (SAV) Habitat Requirements and Restoration Targets: THIRD Technical Synthesis \$5,500

Chesapeake Conservancy - Identifying and Representing the Nanjemoy Creek Watershed Indigenous Cultural Landscape \$25,000

Preservation Maryland Heritage Fund - An Assessment of National Register Eligibility for the Thomas Gerard Site \$5,000

Maryland Department of Natural Resources - Using Archaeology to Articulate History of Newtowne Neck \$35,000

Preservation Maryland - Cremona Collections Curation and National Register Preparation \$4,000

Calvert County, MD (pass-through from National Park Service) - Preparing a Multiple Property National Register Nomination for the Piscataway Indian Archaeological Landscape \$47,000

Chesapeake Conservancy - Developing a Priority Watershed Model for Identifying Chesapeake Bay Indigenous Cultural Landscapes \$14,850

Chesapeake Conservancy - Identifying and Representing the Rappahannock Indigenous Cultural Landscape from Tappahannock to Port Royal \$45,000

Maryland Department of Natural Resources - Archaeology Field School Project at Newtowne Neck State Park \$10,000

National Science Foundation Division of Environmental Biology Collaborative Grant - Collaborative Research: Dimensions: Desiccation and Diversity in Dryland Mosses \$130,079

Chesapeake Bay Trust - Biological Control of Kudzu, an Invasive Species, at St. Mary's College of Maryland \$4,500

Maryland Archaeological Conservation Laboratory - Material Evaluation of Archaeological Samples from the Columbus Steamship \$1,500

Chesapeake Conservancy - Identifying and Representing the York, Pamunkey, and Mattaponi Indigenous Cultural Landscapes \$45,000

National Endowment for the Humanities - Indigenous Borderlands of the Chesapeake: The Lower Rappahannock Valley Landscape, 200-1850 CE \$240,000

National Endowment for the Humanities Chairman's Award - Conference: American History through the Archaeology of the Potomac River Valley \$4,000

National Park Service - Piscataway National Park Ethnographic Overview and Assessment \$50,000

National Science Foundation Broadening Participation Research Experiences for Undergraduates Supplement - Collaborative Research: Dimensions: Desiccation and Diversity in Dryland Mosses \$19,854

National Academy of Sciences (Subaward through University of Kansas) - Community Cohesion and Recovery after the Deepwater Horizon Oil Spill \$77,000

University of Maryland Center for Environmental Science - The Tidewater Project: A Faculty Development Workshop for Applied Liberal Arts Climate Change Learning \$5,000

National Endowment for the Humanities Preservation Grant - A Conservation Assessment of the Gambia Archaeological Collections \$5,925

VIII. Description or list of current formal agreements and informal relationships with federal agencies that are of relevance to federal land management, environmental, and research agencies that will be engaged in CESU activities.

1. Education Partnership Agreement (EPA) between Naval Air Warfare Center - Aircraft Division (NAWCAD) Patuxent River and St. Mary's College of Maryland and The Patuxent Partnership (TPP) (active since 2011). The purpose of the EPA is to...

- Provide a legal and procedural foundation for establishing partnership opportunities between St. Mary's College of Maryland, TPP and NAVAIRWARCENACDIV to advance scientific research and foster academic growth in Science, Technology, Engineering and Mathematics (STEM).
- Aid in the educational experience of St. Mary's College of Maryland students and faculty by providing a mechanism by which those students and faculty can benefit from the expertise, unique facilities and equipment related to naval warfare systems and technologies available from NAVAIRWARCENACDIV through this EPA. St. Mary's College of Maryland students and faculty will be able to collaborate in the many disciplines associated with all aspects of aircraft systems and sub-systems from concept, to integration, through testing which would not otherwise be available in a university environment.
- Facilitate student interest and expertise in science, mathematics, and engineering, particularly, as these fields relate to the real world technical applications required by the U.S. Navy.
- Facilitate the training and recruitment of potential future NAVAIRWARCENACDIV employees through internship opportunities.

2. Cooperative Agreement between St. Mary's College of Maryland and Naval Air Warfare Center - Aircraft Division (NAWCAD) concerning Science, Technology, Engineering and Mathematics (STEM) and Collaboration on Advanced Research in support of Naval Aviation (# N00421-17-2-0001, pending final signatures).

The overall objective of the Cooperative Agreement (CA) is to support NAWCAD's core scientific capabilities and to focus the scope of our advanced research and education-oriented collaborations to meet the needs of Naval Aviation and those of St. Mary's College researchers and students. The existing Educational Partnership Agreement (EPA) has been instrumental in establishing collaborations in the past to support short-term research projects and workforce development. The proposed concept and expressed objective is to augment the EPA with a CA to permit long-term research collaborations to address current and future critical needs, and broader workforce development through recruitment of a more diverse applicant pool. The College already participates in numerous Science, Technology, Engineering, and Mathematics (STEM) programs and welcomes additional opportunities to engage students, faculty and engineers in research to solve current and future technological challenges pertinent to Naval Aviation systems.

3. Education Partnership Agreement (EPA) between Naval Surface Warfare Center Indian Head Explosive Ordnance Disposal Technology Division (NSWC IHEODTD) and St. Mary's College of Maryland and The Patuxent Partnership (final signatures pending).

The purpose of this Agreement is to aid in the education of St. Mary's College students, and allow for the St. Mary's students and faculty to benefit from the staff expertise, unique facilities and equipment of NSWC IHEODTD and TPP, in pursuit of the following goals:

- Provide a legal and procedural foundation for establishing partnership opportunities between St. Mary's College of Maryland, TPP, and NSWC IHEODTD to advance scientific research and foster academic growth in Science, Technology, Engineering and Mathematics (STEM).
- Aid in the educational experience of St. Mary's College students and faculty through collaborative efforts in the many disciplines associated with all aspects of energetic systems from basic research, to advanced technology applications, through test and evaluation throughout the life-cycle of an ordnance item which would not otherwise be available in a University environment.
- Facilitate student interest and expertise in science, mathematics and engineering, particularly, as these fields relate to the real world technical applications required by the U. S. Navy.
- Facilitate the training and recruitment of potential future NSWC IHEODTD employees through internship opportunities.

In addition, we have numerous informal relationships that allow us to place students into paid, unpaid or credit-bearing internships on projects of relevance to federal and non-federal land management, environmental, and research agencies/organizations that might be of interest to CESU. Collaborating organizations focused on natural and cultural stewardship include:

Accokeek Foundation
 Alliance for the Chesapeake Bay
 Audubon Naturalist Society
 Blue Water Baltimore
 Brookside Nature Center
 Calvert Marine Museum
 Chesapeake Bay Foundation
 Chesapeake Climate Action Network
 Chesapeake Network
 Civic Works
 Community Foodworks
 Department of Interior Office of Surface Mining Reclamation and Enforcement
 Elms Environmental Education Center
 Environment for the Americas
 Fair Farms Maryland
 Food and Water Watch
 Green America
 GRID Alternatives Mid-Atlantic
 Historic St. Mary's City
 Maryland Agricultural Resource Council
 Maryland Archaeological Conservation Laboratory
 Maryland Department of Agriculture
 Maryland Department of Natural Resources
 Maryland Department of the Environment
 Maryland League of Conservation Voters
 Maryland State Archives
 Naval History Center
 National Museum of Civil War Medicine
 NOAA Chesapeake Bay Office
 Oceana
 Point Lookout State Park

Rainforest Alliance
RiverKeeper
Sierra Club
Smithsonian Environmental Research Center
Smithsonian Museum of Modern American History
St. Mary County Department of Land Use and Growth
St. Mary's River Watershed Association
True Chesapeake Oyster Company

Other internship opportunities are summarized on *[our internship website](#)*.

- IX. Confirmation of the institution's/organization's willingness to accept a limited overhead rate of 17.5% and cost items to which the rate is applicable for activities conducted through the CESU, including research, technical assistance, and educational services (this overhead rate applies to the entire institution/organization for CESU activities).**

St. Mary's College of Maryland agrees to accept an overhead rate of 17.5% of direct costs on activities conducted through the Chesapeake Watershed CESU and for which the College typically applies such overhead rates. We also acknowledge that this rate applies to the entire institution, but the College retains the right to receive grants and contracts with federal partners outside of the CESU that are not subject to the agreed upon overhead rate for CESUs.

- X. Designation of a technical representative (with full contact information – name, title, full address, phone, fax, email) to serve on the CESU steering committee, participate in CESU annual/semi-annual partner meetings, and facilitate internal and external communication, promotion, and response to CESU correspondence and administrative actions.**

Dr. Sabine L. Dillingham
Director of Research and Sponsored Programs
Calvert Hall 201
St. Mary's College of Maryland
47645 College Drive
St. Mary's City, MD 20686
240-895-4192 (phone)
240-895-2230 (fax)
sldillingham@smcm.edu
<http://www.smcm.edu/research/>

- XI. Agreement to relay agency-specific research, technical assistance, and educational needs and associated funding opportunities to other institutional/organizational members (e.g., faculty, students).**

Dr. Sabine L. Dillingham in her role as Director of Research and Sponsored Programs is ideally suited to relay agency-specific research, technical assistance, and educational needs and associated funding opportunities to St. Mary's students, faculty, staff and administrators. She will accomplish this task through timely communication with CESU staff, collaboration with St. Mary's College colleagues in the Offices of Research and Sponsored Programs, Academic Affairs, Career Development Center and effective outreach to faculty and students.



United States Department of the Interior

NATIONAL PARK SERVICE
Captain John Smith Chesapeake National Historic Trail
Chesapeake Bay Program Office
410 Severn Avenue Suite 304
Annapolis, Maryland 20413

IN REPLY REFER TO:
CL 2018-003

JAN 17 2018

Mr. Danny Filer
Chesapeake Watershed CESU Research Coordinator
National Park Service
University of Maryland Center for Environmental Science/Appalachian Laboratory

Dear Mr. Filer:

This letter is written in support of the application submitted by St. Mary's College of Maryland (SMCM) to participate in the Chesapeake Cooperative Studies Unit network. The National Park Service (NPS) Chesapeake Bay Office has worked with St. Mary's College since 2015, documenting the Indigenous Cultural Landscape as part of the continued development and interpretation of the Captain John Smith Chesapeake National Historic Trail.

Indigenous cultural landscapes are identified as a trail related resource in the trail's comprehensive management plan. SMCM has undertaken three projects and is currently completing a fourth for us. While SMCM students have worked on these projects in a number of capacities, none have yet worked as interns.

Membership in the Cooperative Ecosystem Studies Units (CESU) would allow a more formal relationship that would enhance the potential for internships and other opportunities and forge an even stronger partnership between NPS and SMCM. Therefore, we support SMCM's application for participation in CESU.

If you require any further information, please do not hesitate to email Cindy Chance at cindy_chance@nps.gov or by phone at (410) 260-2492.

Sincerely,

Jamie M. Cupples
Acting Superintendent
Captain John Smith Chesapeake National Historic Trail
Chesapeake Bay Program Office

cc: Cindy Chance, NPS Field Supervisor



DEPARTMENT OF THE NAVY

NAVAL AIR STATION
22268 CEDAR POINT ROAD
PATUXENT RIVER, MARYLAND 20670-1154

5090
Ser N45/160

JAN 17 2018

Chesapeake Watershed CESU
Attn: Dr. Daniel M. Filer
Appalachian Laboratory
301 Braddock Road, Room 304
Frostburg, Maryland 21532

Dear Dr. Filer:

I am contacting you in support of the application by St. Mary's College of Maryland (SMCM) to join the Chesapeake Watershed Cooperative Ecosystem Studies Unit (CHWA CESU).

The Naval Air Station Patuxent River Complex totals approximately 15,000 acres – all within the Chesapeake Bay Watershed. The Complex is considered to be a center of excellence with respect to both Naval aviation and environmental stewardship. In order to maintain the latter, the installation's Environmental Planning and Conservation (EPC) Branch have developed a philosophy of active partnering and sharing of information and resources with other resource management agencies and organizations that include colleges and universities. In many instances, the EPC Branch has made Complex lands available as research natural and cultural areas to these institutions, and has also brought SMCM students in as interns and volunteers to support installation conservation projects.

I and the EPC Branch personnel that serve the Complex believe that SMCM's inclusion in the CHWA CESU would prove to be mutually beneficial, and allow the Complex more opportunities for working with SMCM faculty and students. Therefore, I am recommending SMCM as a member of the CESU network.

For more information regarding this support letter, please contact Kyle Rambo, Environmental Planning and Conservation Branch Direction, at (301) 757-0005 or kyle.rambo@navy.mil.

Sincerely,

A handwritten signature in black ink, appearing to read "G. H. Watanabe".

G. H. WATANABE
Commander, CEC, USN
Public Works Officer
By direction of the
Commanding Officer

16 January 2018
Patuxent River, MD

Mr. Daniel M. Filer
Chesapeake Watershed CESU Research Coordinator
National Park Service
University of Maryland Center for Environmental Science – Appalachian Laboratory
301 Braddock Road – Room 304
Frostburg, MD 21532

Dear Mr. Filer,

I work for the Naval Air Warfare Center – Aircraft Division (NAWCAD) where I serve as the Director of Engineering Education and Research Partnerships. In this position I am involved in promoting professional relationships between the scientists and engineers at NAWCAD and the faculty at Saint Mary's College of Maryland (SMCM). Based on an educational partnership agreement between the two organizations, and using Office of Naval Research funding, the two organizations have successfully developed projects of mutual interest and benefit in the areas of physics, chemistry, mathematics and psychology.

This correspondence serves as a letter in support of SMCM's application to join the Chesapeake Watershed Cooperative Ecosystem Studies Unit (CHWA CESU). NAWCAD wants to grow the relationship with SMCM to include biology and the environmental sciences. In particular the Navy wants to partner with SMCM in responding to the Engineering and Aquaculture Innovation Initiative. Being part of the CHWA CESU would facilitate this activity.

Please note that the comments offered here are not an official position of the U.S. Government; they are my personal thoughts and assessment.

If you wish to know more about the relationship between NAWCAD and SMCM you can contact me at 301-342-9360 or at David.Barrett@Navy.mil.

Sincerely,

David John Barrett, Ph.D.

A handwritten signature in black ink, appearing to be 'D. Barrett', written over a horizontal line.