



Office of the Provost and
Vice President for Academic Affairs

January 3, 2008

Dr. Peter August
Coastal Institute
Narragansett Bay Campus
University of Rhode Island
Narragansett, RI 02882

Re: NAC-CESU Partnership Application

Dear Dr. August:

The enclosed Partnership Application for the North Atlantic Coast Cooperative Ecosystems Studies Unit is being submitted by the State University of New York College of Environmental Science and Forestry (SUNY-ESF).

Technical responsibility for this application rest with the SUNY College of Environmental Science and Forestry and has been assigned to the Technical Contact identified below. Questions about the substance of the application should be directed to the technical contact or to the Office of Research Programs.

If action on this application is favorable, funds awarded via a resultant MOU and/or subsequent amendments to an MOU will be administered by the Research Foundation of State University of New York (RF-SUNY) for and on behalf of SUNY-ESF. The RF-SUNY representative is also identified below.

Your consideration of this application is greatly appreciated.

Sincerely yours,

Dr. Bruce Bongarten
Provost and Vice President for Academic Affairs

Administrative Representative

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The Research Foundation of
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Technical Representative

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Cc: Richard Hawks
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John Auwaerter
Neil Ringler
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State University of New York College of Environmental Science and Forestry
Partnership Application
North Atlantic Coast Cooperative Ecosystems Studies Unit

The State University of New York College of Environmental Science and Forestry (SUNY-ESF) is pleased to make this application for partnership in the North Atlantic Coast Cooperative Ecosystems Studies Unit (NAC-CESU). Through this partnership, SUNY-ESF can make available its extensive breadth of expertise in natural and cultural resource stewardship, building on its long history of partnerships with federal land management, environmental, and research agencies. The College's four thematic academic areas in Applied Ecology and Conservation Biology; Renewable Materials, Energy and Biotechnology; Sustainable Systems and Communities; and Environmental and Natural Resources Information Systems provide rich opportunities for collaborative research to advance understanding of the North Atlantic's coastal ecosystems and their cultural resources.

Contact Person:

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Who We Are:

The State University of New York College of Environmental Science and Forestry is one of 13 doctoral-granting institutions in the 64-campus SUNY system. The College was founded in 1911 through the efforts of Syracuse University Chancellor James R. Day and community leaders who were attuned to a growing national sentiment in favor of forest conservation, and sensed the need for a professional school of forestry. Today the College employs 130 faculty in eight departments, with approximately 2,000 students enrolled at the main campus in Syracuse, New York. The College features a number of regional campuses on more than 25,000 acres throughout Central New York and the Adirondack Park, with instructional programs and research being conducted on most sites.

There is a long history of cooperation between the College and Syracuse University. This relationship remains among the nation's outstanding examples of collaboration between public and private institutions of higher education. The College purchases significant portions of its supportive curriculum from Syracuse University. This arrangement has enabled ESF to more fully develop its undergraduate and graduate level programs. Since its beginning the College has responded to the broad needs of environmental professionalism. As other forestry schools became more specialized, ESF broadened its scope to include such essentials of environmental science as design, engineering, life sciences, and resource management.

The College is one of the 64 geographically dispersed campuses of the State University of New York (SUNY), which brings educational opportunity within commuting distance of virtually every New York citizen and comprises one of the nation's largest systems of public higher education. When founded

in 1948, SUNY consolidated 29 State-operated, but otherwise unaffiliated, institutions. The University has grown to a point where its impact is felt educationally, culturally, and economically the length and breadth of the State and beyond. Of the total enrollment of about 375,000 students, more than 100,000 are at least 24 years old, which reflects the diversity of the University's services for specific constituencies. These services include refresher courses for the professional community, continuing education opportunities for returning service personnel, and personal enrichment for a diverse population, including older citizens. A Board of Trustees, appointed by the Governor, which develops policies followed by the 34 State-supported campuses, governs the University. In addition, ESF is governed by its own Board of Trustees comprising nine members appointed by the governor, one member elected by the students of the College, and five *ex officio* members.

Charter, Mission, and Vision of ESF

The College of Environmental Science and Forestry, originally established as the New York State College of Forestry at Syracuse University, was rechartered in 1972. New York State Education Law, Article 121 prescribes that the College shall direct its efforts towards the following:

- Teaching in the science and practice of environmental science and forestry in its several branches, including landscape architecture; environmental design; environmental and resource engineering; environmental and resource management; wildlife studies; biology, chemistry, ecology; the manufacture and marketing of forest products; and the technologies appropriate to these branches of environmental science and forestry.
- The conduct of research, investigation, and experimentation relating to such studies wherever appropriate, including suburban or urban areas, and in commercial or industrial facilities.
- The conduct of experiments in forest and related development and management for public, commercial, recreational, and aesthetic purposes, and, generally the giving of popular instruction and information concerning the elements of environmental science and forestry.
- The operation of demonstration and public service programs with a view to acquiring, transmitting, and applying knowledge concerning the scientific management and use of forest and related natural resources for human benefit.

The mission of ESF is to be a world leader in instruction, research, and public service related to:

- Understanding the structure and function of the world's ecosystems;
- Developing, managing, and use of renewable natural resources;
- Improving outdoor environments ranging from wilderness, to managed forests, to urban landscapes; and
- Maintaining and enhancing biological diversity, environmental quality and resource options.

The basic goals of ESF, which were revised in 1985 and reported in *The Decade Ahead: A Mission; A Beginning Agenda*, were updated in the *ESF Interim Administrative Agenda* in 1991, and presented as a vision in 1993. This vision includes confidence that:

- ESF graduates possess a thorough grounding in their specialization, think broadly, have the ability to solve complex problems in cooperation with others, comprehend worldwide implications of parochial decisions, and communicate effectively to make contributions as well-educated citizens in a changing world.

- ESF provides leadership in understanding and resolving the struggle between economic growth and environmental quality by extending our knowledge to the community-at-large.
- ESF is a client-oriented institution where service to our students, our other constituents, and each visitor is a preeminent value shared by every employee.
- ESF is a caring community of diverse faculty, staff, and students who value each other as individuals and scholars.

Today's environmental issues are inherently complex and must consider a variety of perspectives and competing interests. Four themes – Applied Ecology and Conservation Biology; Renewable Materials, Energy and Biotechnology; Sustainable Systems and Communities; and Environmental and Natural Resources Information Systems – provide a context to integrate and synthesize the cultural, natural and industrial perspectives embracing all of ESF's programs.

Applied Ecology and Conservation Biology

This field explores how to maintain healthy, functional ecosystems and conserve the earth's rich biological diversity. Its purpose is to identify long-term measures to prevent degradation of ecosystem function and loss of biological diversity while accommodating the ever-increasing needs of human society.

Renewable Materials, Energy and Biotechnology

The wise use of renewable materials is key to both economic and environmental well-being. Developing strategies to reduce reliance on fossil fuels as an energy source is a vital challenge for the 21st Century. Biotechnology involves using organisms, including trees and their cells or molecules, to improve the human condition. It is essential to achieving environmental improvement because it creates new ways to use natural processes for human benefit and can be directed to cleanse contaminated habitats.

Sustainable Systems and Communities

The concept of sustainable development was defined by the World Commission on Environment and Development as a form of progress "that meets the needs of the present without compromising the ability of future generations to meet their own needs." At ESF, successful design and implementation of sustainable systems and communities integrate concerns for the natural environment with concerns for quality of human life and communities. Through research and education, college faculty and students explore the interactions of biological and human systems for the maintenance and long-term improvement of both.

Environmental and Natural Resources Information Systems

Scientific discovery begins with curiosity and a question that needs to be answered. One then collects objective data and uses or analyzes that information. Finally, the outcome of that methodological sequence is communicated. Through data acquisition, analysis, modeling and simulation, and interpretation, ESF brings environmental and natural resources information systems to the classroom as well as to research and public service efforts. Examples include wildlife monitoring, ecosystems and watershed modeling, GIS and remote sensing analysis, urban lead and acid rain studies and the Northern Forests Initiative.

These four themes focus ESF's academic programs to create an effective, dynamic and diverse workforce of scientists, engineers, planners, designers, policy makers and teachers. Using analytical, communication and technical skills honed at ESF, these professionals work in an interdisciplinary setting, understanding the links between human activities and environmental impacts. Our graduates are citizens who anticipate the consequences of these activities, articulate those consequences to society, and promote

behaviors and actions that result in sustainable environmental systems from the local to the planetary levels.

SUNY ESF Expertise Available to the NAC CESU

The areas of expertise at SUNY ESF support the six “Research and Technical Assistance Directions” of the North Atlantic Coast Cooperative Ecosystem Studies Unit. The following description of each department identifies potential contributions to these areas, and lists a sampling of faculty and their relevant expertise.

The Department of Landscape Architecture is well positioned to address the NAC CESU area of “Natural and Cultural Resources Heritage,” as well as “Landscape Ecology and Maintenance of Biodiversity.” The Department offers undergraduate and graduate degree programs that educate practitioners and teachers, designers and planners, advocates and policy makers in careers fostering sustainable integration of natural and cultural communities. The SUNY-ESF program is the second largest in the United States, with 15 full-time faculty supported by several adjunct professors and visiting instructors. Faculty interests range from materials and construction to regional planning, from ecological planning to urban design, from theoretical landscapes to historic preservation. The large and diverse faculty offer not only a wide range of foundation courses necessary for professional preparation, but also three strong areas of study that encourage in-depth exploration in ecological design and planning, community design and planning, and cultural landscape preservation. Through its partnerships, the Department also supports professional research staff specializing in the areas of cultural landscape preservation, community design and planning, and brownfields remediation.

Richard S. Hawks, rshawks@esf.edu, chairs the Department and is an expert in community design, restoration and natural factors in design.

George Curry, gwcurry@esf.edu, cultural landscape preservation, site planning, and urban design.

Jeff Blankenship, jblanken@esf.edu, cultural landscape theory and practice.

Margaret Bryant, mbryant@esf.edu, environmental and land-use planning.

Emanuel Carter, ejcarter@esf.edu, planning design theory and sustainable communities and city and regional planning.

Matthew Potteiger, mpotteig@esf.edu, cultural landscape history, and design theory and methodology.

The Department of Environmental and Forest Biology has extensive expertise in the NAC CESU areas of “Landscape Ecology and Maintenance of Biodiversity” and “Restoration Ecology.” The Department maintains a rich variety of undergraduate and graduate programs which introduce concepts of biodiversity conservation, physiology, and ecology of plants, animals, and microorganisms, and emphasize the interactions and changes in biological systems in the context of the broad fields of aquatic and wetland sciences; biotechnology and chemical ecology; conservation biology; environmental interpretation; fisheries and wildlife biology; forest health; and global, landscape and urban ecology.

Donald J. Leopold, djleopold@esf.edu; chairs the Department and is an expert in wetland ecology, forest ecosystems and restoration ecology.

James Gibbs, jpgibbs@esf.edu, genetic considerations and conservation biology of amphibians and reptiles.

William F. Porter, wfporter@esf.edu, Director of Adirondack Ecological Center, wildlife ecologist and landscape level community ecosystem analysis.

D. Andrew Saunders, dasaunders@esf.edu, Co-Director of Adirondack Ecological Center, wildlife/mammal ecologist and natural interpretation leader.

The Department of Environmental Studies can contribute to NAC CESU area of "Technical Assistance Directions." The Department offers undergraduate and graduate programs that integrate and balance the social sciences, humanities and natural sciences in a creative, interdisciplinary context. The primary goal of Environmental Studies at SUNY-ESF is to promote ecological sustainability through productive interactions between the scientific community, government, business, non-governmental organizations and affected publics. This is pursued through interdisciplinary academic programming and research activity anchored in studies concerning environmental policy, communication and decision making. All programs aspire to a multi/interdisciplinary approach, holistic perspective, topical grounding, and realistic experience.

David Sonnenfeld, dsonn@esf.edu, chairs the Department and is an expert in environmental reform and technology movement.

Richard Smardon, rsmardon@esf.edu, wetland ecosystems and policy interfaces.

Myrna Hall, mhhall@esf.edu, landscape and ecosystem modeling.

The Department of Environmental Resources and Forest Engineering offers expertise in the NAC CESU areas of "Restoration Ecology" and "Coastal Geomorphic Processes." The Department offers an accredited engineering undergraduate program in Forest Engineering and graduate programs at both the masters and doctoral levels. The faculty also conducts research and public service programs. Through the program in environmental and resource engineering, the faculty participate in research concerned with environmental and resource-related programs in engineering and forestry, geography, natural sciences, physics and mathematics.

James M. Hassett, jhassett@esf.edu, chairs the Department and has expertise in geomorphic process and modeling.

Douglas Daley, djdaley@esf.edu, brownfields restoration and creative solutions to waste management.

Theodore A. Endreny, te@esf.edu, modeler of stream ecosystem processes.

The Department of Forest and Natural Resources Management offers its expertise to the NAC CESU areas of "Monitoring and Modeling of Long-Term Changes," "Coastal Geomorphic Processes," and "Natural and Cultural Resources Heritage." The Department offers programs leading to the bachelor's, master's and doctoral degrees at the main college campus in Syracuse and two programs leading to the associate in applied science degree in forest technology and land surveying technology at the Ranger School in Wanakena, NY. Professional forestry education has been featured at ESF since the College's founding in 1911. ESF's forest and natural resources management programs are science-based and values-driven. The integration of values and scientific facts characterize professions that are successful in democracies. ESF-trained foresters and natural resource managers are able to integrate

these two threads in America's complex society. The mission of ESF forest and natural resources management programs is to produce knowledge and to transmit it to our customers; to encourage continual learning about forest and related renewable resources and their role in making people's lives better; and to develop leaders who will manage renewable resources on a sustainable basis.

David Newman, dnewman@esf.edu, chairs the Department and is an expert in forest economics.

Chad Dawson, cpdawson@esf.edu, recreation management and wilderness management.

Christopher A. Nowak, canowak@esf.edu, silviculture, intensive forestry, forest vegetation management.

Rudolph M. Schuster, rschuster@esf.edu, recreation resources management.

Ruth Yanai, rdyanai@esf.edu, forest soils, ecosystem nutrient cycling and simulation modeling.

Laura Lautz, klautz@esf.edu, hydrology and watershed management.

Timothy Volk, tavolk@esf.edu; is Co-Director of the SUNY Center for Sustainable and Renewable Energy with special expertise in extraction of bioenergy from genetically modified willow.

Russell Briggs, rdbriggs@esf.edu; watershed responses to agricultural and forest practices.

The Department of Chemistry can contribute to the NAC CESU areas of "Nutrient Enrichment and Contaminants" and "Monitoring and Modeling of Long-Term Changes." The Department is organized around the interdisciplinary areas of Biochemistry and Natural Products Chemistry, Environmental Chemistry and Polymer Chemistry. It stresses a strong foundation in the traditional areas of Chemistry (Analytical, Inorganic, Organic and Physical Chemistry) plus integration of these areas into its specialties. Students at all levels enjoy the advantages of a traditional chemistry program and the added value of a specialty aligned with the needs of the 21st century. The Department is committed to maintaining its leading role in extending knowledge in its specialties. It occupied a new home, the 71,000 square foot Edwin C. Jahn Laboratory. This state-of-the-art facility for research and teaching in Chemistry is well equipped with instruments needed for modern chemical research.

Arthur J. Stipanovic, astitpano@esf.edu, chairs the Department and is an expert in physical chemistry and the materials science of polymers.

John Hassett, jphasset@syr.edu, has developed and patented sensory devices to detect contaminants in reservoirs.

David L. Johnson, djohnson@esf.edu, contamination of air and dust.

Mark A. Teece, mteece@esf.edu, organic geochemistry.

Gregory Boyer, glboyer@esf.edu, sensing systems for biological and chemical threats to water, marine biogeochemistry.

David Kieber, djkieber@esf.edu, marine biogeochemistry and atmospheric interactions.

The Department of Paper and Bioprocess Engineering and Department of Construction Management and Wood Products Engineering can address issues in the NAC CESU area of “Nutrient Enrichment and Contaminants.” Paper and Bioprocess Engineering offers programs at the undergraduate and graduate levels, preparing students for leadership roles in the paper and bioproducts industries. The department is made up of nine distinguished faculty who maintain research programs in a wide range of areas including: biopulping, wood pulping and bleaching chemistry, paper physics and papermaking, chemical and process engineering, materials science, and surface and colloid science, among others. This year PBE launched a new major leading to a bachelor’s degree in Bioprocess Engineering – the first and only program of its kind in the northeastern U.S. This program trains engineers who will work in the emerging bioprocessing and biofuels industry to produce energy and related chemical products, including pharmaceuticals, from renewable resources. It is a natural complement to their history and expertise in the paper and allied chemical fields.

Construction Management and Wood Products Engineering offers two bachelor of science degrees: Construction Management, and Wood Products Engineering. Students are prepared for professional careers in the construction industry or in wood products manufacturing, marketing or design. The Department participates in graduate education leading to the master of science, master of professional studies, and doctor of philosophy degrees through the program in environmental and resource engineering. Areas of graduate research include: construction management and engineering, wood science and technology, wood anatomy and ultrastructure, tropical timbers, wood treatments, engineered wood products and timber structures. Laboratory facilities include a computer facility with specialized software, a mechanical testing laboratory with a wide range of testing machines, electronic data acquisition facilities, shaker table and frequency analyzers, and complete wood processing facilities including a dry kiln and wood preservation equipment. One of the largest wood collections in the world (the H.P. Brown Memorial Wood Collection) is used to support the graduate research program of the Tropical Timber Information Center.

Gary M. Scott, gscott@esf.edu, chairs the Department Paper and Bioprocess Engineering and is an expert in the chemistry of pulping and bleaching, renewable energy and bioprocess engineering, process and environmental systems engineering and pulp and paper technology.

Susan E. Anagnost, seanagno@esf.edu, chairs the Department of Construction Management and Wood Products Engineering and is an expert in wood anatomy and ultrastructure, wood science and technology and wood treatments.