

**“SUNY CENTER FOR BIOSPHERE RESERVE STUDIES”
PRE-PROPOSAL: DISCOVERY CHALLENGE SEED GRANTS**

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(1) DISCOVERY OPPORTUNITY: The SUNY College of Environmental Science and Forestry (ESF) has an opportunity to become the first university center in the United States for biosphere reserve scholarship and outreach. This would give ESF a unique connection to UNESCO’s Man and the Biosphere Program (with 686 biosphere reserves in 122 countries) and make the ESF Main Campus and the Adirondack Ecological Center destinations for students and faculty from all over the world. The goal of this proposal is to establish a “SUNY Center for Biosphere Reserve Studies” with four goals:

- To sponsor a graduate Area of Study, an undergraduate major, an undergraduate minor, and a post-graduate certificate program;
- To offer opportunities for interdisciplinary research, education and outreach regarding ecological and cultural aspects of biosphere reserves;
- To provide technical assistance to biosphere reserve communities and organizations through short courses, workshops, field work, symposia and consultations; and,
- To serve as a forum for UNESCO-sponsored conferences, youth exchanges and related activities.

The SUNY Center for Biosphere Reserve Studies will be managed jointly by the Departments of Landscape Architecture, Environmental & Forest Biology, Forest & Natural Resources Management, and Environmental Studies. EFB and FNRM will address ecological quality and performance, and LSA and EST will address human settlement patterns and activities. The Center will be based at the ESF Syracuse Campus and the AEC, with participation from Cranberry Lake Biological Station (CLBS) and Thousand Islands Biological Station (TIBS). The University of Vermont, Paul Smith’s College, Queens University and other organizations will be collaborators.

The geographical area of concern is the northeastern United States and southeastern Canada. The Center will support research, revitalization, and stewardship of the Champlain-Adirondack Biosphere Reserve (CABR) as well as the Green Mountain National Forest; Hubbard Brook Biosphere Reserve (New Hampshire); Mont Saint-Hilaire Biosphere Reserve (Quebec), Lac Saint-Pierre Biosphere Reserve (Quebec); and, Frontenac Arch Biosphere (Ontario).

Initially, the Center will offer two new courses, scheduled for the spring and summer of 2019, along with existing AEC courses, programs and field work. The initial work will include an outreach team (Carter, Houseal, et al) to offer planning and design analyses, workshops, short courses, etc. Courses will be offered to ESF and non-ESF students, and advertised internationally to attract a diversity of participants and ensure long-term funding.

LSA 496/696 Special Topics in Landscape Architecture: Introductory Seminar on UNESCO Biosphere Reserves 3 credits (Spring - Professors Carter and Houseal, et al) Sessions will address the purpose of biosphere reserves, their roles in stimulating education, research and public policy regarding sustainable use of natural resources. Special attention is given to the Champlain-Adirondack Biosphere Reserve..
Open to juniors, seniors and graduate students.

LSA 496/696 Special Topics in Landscape Architecture: International Mobile Seminar on UNESCO Biosphere Reserves 2 credits (Summer - Professors Houseal and Carter, et al) This mobile, experiential course is a follow-up to the Introductory Seminar on Biosphere Reserves and will expose students to on-site management of biosphere reserves. The 10-day course will be based at the AEC with exploration of the Champlain-Adirondack Biosphere Reserve, followed by visits to the Mont Saint Hilaire Biosphere Reserve, and the Frontenac Arch Biosphere. Open to juniors, seniors and graduate students.

(2) IMPACT ON UNDERGRADUATE AND GRADUATE PROGRAMS AND DEGREES: Biosphere Reserve Studies could be offered as an Area of Study at the doctoral, master's and undergraduate levels of study, and as a 12-15 credit post graduate certificate program. It could also be an undergraduate minor. The center will also support at least three graduate students each year. It is important that ESF develop an interdisciplinary approach to large-scale landscape conservation and rural / wilderness planning that includes an integration of the natural and social sciences and the analytical and creative arts!

(3) AGENCIES, PARTNERS AND FUNDING ENTITIES: Funding for the Center for Biosphere Reserve Studies will come from several sources: student course fees, government research and technical assistance grants, and foundations. For example, the US National Park Service awarded ESF a pilot grant (\$31,000) toward CABR revival. The US Biosphere Program, supported AEC staff participation at the 2017 UNESCO Biosphere Youth Forum in Italy. As CABR Co-Chair, Houseal is partnering with the Frontenac Arch and Canadian First Nations to identify funding for the International Centre for Sustainable Rural Communities in Brockville, Ontario. In addition, funds will be solicited from the Pew Charitable Trusts, the Lincoln Institute of Land Policy, the Doris Duke Charitable Foundation, the Linden Trust for Conservation, the New York State Department of Environmental Conservation, and other organizations which support conservation projects and student education programs. The international mobile seminar will expand on ESF's successful experiential educational models used at the AEC, CLBS and TIBS, and will be marketed through organizations such as the School for Field Studies.

(4) PARTNERSHIPS: Current partners include: SUNY ESF; University of Vermont, Rubenstein School of Environment and Natural Resources; Queen's University, School of Environmental Studies; SUNY Plattsburgh; Paul Smith's College, the Lake Champlain Basin Program, and the Champlain Valley National Heritage Partnership. Additional partners might include: ESF Center for Native Peoples and the Environment, McGill University, The Nature Conservancy, Adirondack Park Agency, Scenic Hudson, NYS Department of Environmental Conservation, US National Park Service, and UNESCO EuroMAB Committee.

The initiative will solidify ESF's relationships with current and potential partners in the explorations of US and Canadian biosphere reserves, and the CABR as a significant contributor to UNESCO's objectives. ESF will participate in collaborative projects with other universities, government agencies, municipalities, not-for-profits, and local organizations. These relationships will allow ESF to participate in UNESCO-sponsored conferences and workshops around the world and attract additional collaborators and high-quality graduate students, visiting professors and practitioners. This initiative will also place ESF in a position to assist local governments in New York State and beyond in adopting better models for the stewardship of ecology, community and place. Professors Carter and Houseal are active members of the CABR Working Group, helping to reestablish the reserve. Climate change resiliency and adaptation are major UNESCO themes and ESF (Professors Beier, Houseal, et al) has developed a proposal for a NYS Environmental Change Observatory Network (ECON) that was well received. A related proposal (Houseal, et al) for a Great Lakes / St. Lawrence River Basin Biosphere Reserve Network proposes the use of field stations within biosphere reserves as 'sentinels' to monitor global environmental change. Over the last several years, Professor Carter has worked with landscape architecture design studios on the development of village-scale eco-industrial parks to diversify the economic potentials of the CABR's rural communities.

(5) USE OF ESF ASSETS: The initiative will build on ESF's research, teaching, and outreach in the CABR, centered at the AEC. With our close relationship with the Frontenac Arch Biosphere, TIBS will also play role. ESF's Northern Properties offer a multitude of experiential opportunities for faculty, students and visitors and space to accommodate courses and workshops already exists.

(6) POLICY DECISIONS, ESF'S REPUTATION, AND GLOBAL IMPACT: The Center for Biosphere Reserve Studies will highlight ESF within the UNESCO network. A global audience will become aware of ESF's strengths in science, policy and planning. Our research, educational materials, and creative work will be visible at international conferences, workshops and in publications. ESF will be more globally visible and important within the SUNY system, and to the citizens and the government of New York State. We will develop more partnerships with institutions from other countries. Eventually, international students and candidates for faculty and staff positions will increase. ESF will be participating in the stewardship of CABR, the 4th largest biosphere reserve in the world, and partnering with neighboring institutions on scholarship and stewardship of several other biosphere reserves.

(7) NEW INVESTMENTS: The center will need a workspace in Marshall Hall for a co-director and two graduate students. It will need a workspace at the AEC for a research support specialist, a co-director and one graduate student. Each space will need a desk or a work table, chairs, phone, computer, printer, scanner, and filing cabinets. If the center can attract sustained funding, it would be good for ESF to eventually hire a younger professor whose career is primarily about biosphere reserves and large-scale landscape conservation.

STATEMENT: HOW THE DISCOVERY IDEA IS TRANSFORMATIVE IN GENERAL AND WITH RESPECT TO RESEARCH AND EDUCATION PROGRAMS AT ESF:

As UNESCO says: “Biosphere reserves are ‘Science for Sustainability support sites’ – special places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including conflict prevention and management of biodiversity.” The emphasis here is on “social and ecological systems” and how we humans might learn to live in congruence with nature and become better stewards to all that sustains us. ESF is poised to strengthen its teaching, research and public service efforts through interdisciplinary explorations in well-defined “demonstration zones” to discover evolving knowledge regarding best environmental and cultural practices for managing the ways we interact with our changing planet and then sharing those methods with students, practitioners, communities and decision-makers through local, regional, and international outreach. Connecting ESF’s work to UNESCO allows the College to become a global influence in how decision-makers manage and negotiate relationships involving environment, community and place. Collaborative interdisciplinary work (LA, EST, EFB, FNRM) regarding comprehensive, integrative, applied large-scale landscape conservation and rural development planning and design would improve the College’s domestic and international profile. ESF graduates in Biosphere Reserve Studies would be armed with an international network of colleagues, interdisciplinary analytical and applied skills, and a global environmental / cultural outlook that few programs can offer. The core team is already at ESF. The next step is a commitment to Biosphere Reserve Studies and to a connection with UNESCO.

A DESCRIPTION OF THE INITIAL START-UP OF THE PROJECT: Over the first three years the project would: **(1)** initiate two new annual courses, “Introduction to Biosphere Reserve Studies” and “Mobile Seminar in Biosphere Reserve Studies”; **(2)** add a biosphere component to a number of ESF courses including LSA 700; EST 624 Nature, Recreation & Society; EST 336 Attitudes, Values & The Environment; FOR 476/676 Ecotourism & Nature Tourism; EFB 484/684 Mammalian Winter Ecology, EFB 518 Systems Ecology, and FOR 498 / 798 Independent Studies and Research in Forest and Natural Resources; **(3)** collaborate with the Frontenac Arch Biosphere Reserve on village revitalization studies; **(4)** convene a forum of biosphere reserve leaders (eastern US and eastern Canada) at the AEC to discuss common interests regarding research, policy development, and applications in environmental stewardship and community development; **(5)** work with collaborating institutions to develop research, teaching and outreach agendas pursuant to the needs of regional biosphere reserves; **(6)** pursue grants to support the research, teaching and outreach agenda(s) from a range of governmental and non-governmental sources, and; **(7)** participate in the final reconstitution of the Champlain-Adirondack Biosphere Reserve.

HOW THE PROJECT WILL GROW INTO A SUBSTANTIAL AND SELF-SUSTAINING PROGRAM BEYOND THE SEED PERIOD:

We intend to be the lead team engaged in a long-term social-ecological research project in the Champlain-Adirondack Biosphere Reserve and a collaborator in studying a range of other North American biosphere reserves. It would be ideal if one or more nearby biosphere reserves were also an LTER project. Hence the opportunity for comparative analysis. Long-term funding might come through a variety of mechanisms, including but not limited to a surprisingly large range of Federal, State and non-governmental sources that support large-scale landscape conservation and related long-term research and monitoring. We expect that some of these funding agencies will be working with us during the first three years of the Center’s existence.