

The ESF Center for Environmental Solutions: A Preproposal for an ESF Discovery Challenge Seed Grant

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1. Description of the Discovery Opportunity

The mission of the ESF Center for Environmental Solutions (CES) will be to efficiently communicate to a global audience some of the amazing research that is being done at ESF and the positive impacts we are having on environments around the world. CES will focus on tangible products of environmentally beneficial techniques and technologies developed at ESF and in the process will generate funds to support students and research to further expand the programs of CES. The strategy is to use a carefully designed combination of social media and high-quality print media to deliver informational videos and articles to the public. Videos will be released through a CES YouTube channel and will primarily target environmentally conscious Millennials and Generation Z. Print media will primarily target older, more affluent individuals through high-quality outlets such as Audubon, Smithsonian, Natural History, Scientific American, and others. Funds will be generated through YouTube ad revenue and Patreon.com. The media functions of CES will be coordinated by a new media specialist who will build it into a revenue-generating media machine.

What is CES?

CES will produce video content about the research of ESF faculty who are working toward a solution to one or more environmental problems. This would include topics such as mitigation of the impacts of invasive species, ecological restoration, development of best management practices, and any work that is aimed at producing real-world solutions. Although basic research would initially not fall under the auspices of CES, successful fundraising through CES could allow basic research to be considered in the future.

CES will be designed to be a self-perpetuating organization in which faculty will be incentivized to work with CES to produce videos and articles in order to generate funds to support their research. This funding mechanism is appealing because rather than (or in addition to) devoting valuable time to writing grant proposals that have low chances of success, that time is instead used to produce a series of videos which at a minimum inform and educate the public while bringing highly favorable exposure to ESF on a global scale, and at best have the potential to generate extensive research funds.

In addition to producing videos and articles, CES will utilize Patreon to solicit donations from followers generated through a variety of other social media sources. The first of these will be the establishment of an active Twitter account, but expansion into platforms such as Instagram and Facebook are also expected. In addition to the CES social media, high-quality print media will be used to inform generations who are less connected to social media and to attract this demographic into the CES mediasphere.

Social Media

Millennials and members of Generation Z consume substantially more media than previous generations. Moreover, this media is of a markedly different sort than that of previous generations - it is principally online, through YouTube or Facebook, rather than on television. The media that is successful among the young segment of the media market is different than its

television predecessor in four key ways: (1) it is personality driven, (2) it is not aloof, (3) it has no length requirements, and (4) it assumes intelligence in its viewers. For our purposes, we will focus on YouTube rather than Facebook, as those who create Facebook content seldom receive direct monetary compensation for doing so. YouTube revenue is generated from advertisements on videos. More importantly, monthly contributions through Patreon which will constitute most of the revenue stream are dependent on large numbers of small contributions. Patreon recently hit its ‘hockey stick’ curve; it recently doubled the number of monthly active paying patrons to 1 million. It paid out \$100 million to creators in 2014-2016 and \$150 million in 2017. Now is the time for ESF to capitalize on this trend

Our strategy differs sharply from the use of one-time fund raising web sites such as GoFundMe. However, once an audience has been established, individual and periodic crowdfunding events can be created for specific projects.

Twitter and Instagram will be used to maintain frequent contact with followers and to sustain continued interest in CES activities including new media releases. A CES web page will be created on the ESF web site as a clearinghouse for all CES videos, articles and other content.

Print Media

The media specialist will maintain contacts with high quality print media organizations and will work those contacts to get articles on ESF success stories published. The goal will be to increase the visibility of ESF among an international audience of affluent and influential professionals and elevate the reputation of ESF as an institution that solves environmental problems around the world. Contributions via Patreon from this group may be smaller in number but greater in size than those coming through social media.

2. Undergraduate and graduate programs

ESF is the ideal home for CES because we are primarily an institution of applied ecology. Thus, every department may potentially participate in CES. Funds generated through the CES mediasphere will be used, in part, to support both undergraduate and graduate students.

Undergraduate students will be supported through an NSF REU-type program intended to give valuable research internships to students. CES-REUs will be predominantly dedicated to support internships for ESF undergraduates, but a smaller portion will be used for summer internships to attract high-quality undergraduates from other institutions as a recruiting mechanism for our graduate programs.

Graduate student stipends and tuition will also be funded through CES. Initially, priority will be given to projects that have high potential to yield solutions in the short term. The rationale behind this is to satisfy donors and potential donors in order to build the donor base.

3. List of agencies, partners and funding entities

The principal partners of the Center will be revenue-generating social media companies. Other partners and agencies will depend on the specific projects and faculty. Ultimately, the success of CES will depend on extensive interaction with state and federal agencies, the private sector, NGOs and academic researchers. Producing interviews with individuals from companies and NGOs putting environmental solutions into practice would present fertile ground for the formation of lasting partnerships.

4. New partnerships with academic, government and private organizations

Because CES will be concerned primarily with developing techniques and technologies designed to solve environmental problems, technology transfer will be a critically important step in implementation. Patentable technologies will involve commercial licensing through the

SUNY-RF Technology Transfer Office. While the patents will be held by SUNY RF, licensing involves companies who reimburse the patenting costs and pay royalties. Additionally, interaction between the researchers and the company fosters further collaboration.

Implementation of techniques and technologies frequently involves state and federal agencies. For example, ecological restoration and invasive species mitigation may be implemented by state agencies such as NYS DEC, NYS Parks and Recreation, NYS Agriculture and Markets, US Forest Service and USDA APHIS. Collaboration with these agencies can identify problems that can be addressed by CES. Most of these agencies can also contribute funding in support of solutions to problems they deem significant. NGOs may also play a significant role in the identification of problems and the implementation of solutions.

5. Increased use of ESF Assets

The ESF Regional Campuses provide unique opportunities for assessment of the efficacy of restoration techniques and newly developed technologies. The creation and assessment of artificial vernal pools at Heiberg Forest and the testing of newly identified chemical attractants for invasive insect pests at the Ranger School and Heiberg Forest are examples of how the ESF properties can play a critically important role in the efficient development of ecological solutions.

On the ESF main campus, ITS Media with its video production capabilities will be a vital resource where virtually all digital content will be produced.

6. Influence on Policy Decisions, Enhancement of ESF's Reputation, and Global Impacts

Policy decisions of resource management agencies and organizations will potentially be affected by newly developed means of mitigating environmental problems. Policy may also be affected by specific recommendations stemming from research conducted by ESF faculty associated with CES.

The reputation of ESF stands to be substantially bolstered by the high quality, information-dense media products emanating from CES. The beauty of digital media is the ease with which it is globally disseminated. Even in countries where YouTube is blocked (e.g. China), new technologies may still be adopted. For instance, at ESF a potent pheromone was identified for the insect vector of the worst forest health problem in eastern China, introduced pine wilt disease. That pheromone is now used in multi-million dollar (USD) programs in over a dozen provinces in eastern China and ESF is now well recognized by the Chinese forest health community.

7. Description of New Investments.

Essential to the success of CES will be the hiring of a media specialist who will network with ESF faculty (and potentially others) and identify projects for inclusion in the system. This individual must be experienced in digital media production and know strategies for effective digital communication. The media specialist will also have extensive contacts with national and international print media organizations.

The initial three years of funding will be used to support the media specialist and to augment existing projects through the funding of undergraduate and graduate students and partial research expenses. The three-year goal is to build a following of media consumers and donors sufficient to make CES self-sustaining. The goal beyond three years is to increase the revenue stream to significantly expand the resources available to support more research projects and at higher levels.