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Stevens' Environmental Entrepreneurship (E2) Program receives \$570,000 from NSF

E2 will create and implement Environmental Entrepreneurship Lab

HOBOKEN, N.J. — Stevens Institute of Technology has been awarded a two-year grant of \$569,853 from the National Science Foundation. This grant will be used to develop an Environmental Entrepreneurship (E2) Program at Stevens. Dr. Lex McCusker, Dean of Stevens' Wesley J. Howe School of Technology Management, will serve as the project's Principal Investigator. Co-Principal Investigators at Stevens are Dr. Thomas Lechler, Associate Professor of Technology Management, and Dr. Christos Christodoulatos, Professor and Director of the Center for Environmental Systems. Dr. Kurt Becker, of Polytechnic University, will serve as the Principal investigator for the subawardee institution.

"This project aims to create and implement the Environmental Entrepreneurship Lab (E2-Lab) at Stevens to foster the rapid marketplace realization of economically successful environmental innovations that are capable of being adopted by existing companies or serve as bases for creating new ventures," said Dr. Lechler. "The E2-Lab will be an unconventional, novel and rapid vehicle for the transformation of scientific breakthroughs and technological advances into innovations in the area of environmental technologies. By combining the technology push that characterizes conventional technology transfer routes with the market pull, the team expects to reduce the usual three- to four-year time frame for technology transfer to at most two years."

The time savings will come primarily, Lechler said, from eliminating the main bottlenecks in the conventional tech transfer process through direct integration of market intelligence into the invention process and by replacing the conventional, multi-step technology transfer process by a simple, three-step E2-Innovation-Transfer model. This E 2-Innovation-Transfer process will consist of three phases: (1) market-focused invention and research, (2) innovation conception and selection, and (3) innovation venturing and exploitation.

"The E 2-Lab is in the next phase in the evolution of the Stevens-wide Technogenesis® initiative designed to create a broad-based culture of academic entrepreneurship within the Institute," said Dr. Christodoulatos. "The Stevens E 2-Lab will elevate business awareness among faculty and students and introduce entrepreneurial behavior by implementing several innovative educational initiatives aimed at enabling the integration of technological and market knowledge into the curriculum."

Furthermore, Dr. McCusker said, a network of organizations contributing to the E2-Lab will be a crucial part of its successful implementation. The initial success of the proposed E2-Lab will be evaluated by the sustainable establishment of a network of innovation partners, the creation of a multidisciplinary curriculum for engineers and scientists and by the creation of at least one environmental venture and one successful innovation during the funding period of two years. "Beyond the initial funding stage," he said, "it will be critical to maintain the participation of these partners. This will be accomplished by the long-term attributes of the E2-Lab, the creation of value for all participating parties resulting in an economically self-maintaining endeavor that becomes viable independent of government funding."

According to the team, the E 2-Lab intends to re-define the traditional university-industry technology transfer process and to create an unconventional entrepreneurial solution, the E2-Innovation-Transfer Process. Traditionally, technology transfer represents a technology-push rather than a market-pull process: economic applications for technological inventions are sought after they are created. As the high failure rate of technology push innovation projects shows, it is apparently not sufficient to evaluate an invention from a technical perspective and to think about a business application after the invention was created. Other perspectives and knowledge areas have to be integrated into the innovation process. One important component in a successful innovation process is the market knowledge that complements the scientific and technological knowledge. The traditional function and role of universities makes them unlikely sources of the required specific market related knowledge.

The key to the success of the proposed E2-Lab, said Lechler, is the establishment of an open system, in which partners with different backgrounds combine their complementary expertise to create environmental innovations that lead to successful ventures. Stevens' E2-Lab adds to the unidirectional perspective inherent in most University-Industry-Technology Transfer processes a market pull component by attracting and integrating necessary "market" resources into the E-Innovation-Transfer Process.

"The E2-Lab will be an interdisciplinary university-wide endeavor," said Christodoulatos. "It contains an educational component, in which students learn to be comfortable and productive in interdisciplinary, entrepreneurial environments that address present needs in addition to becoming the next-generation thinkers. Thus, student exposure to the E2-Lab will result in a depth of knowledge in a particular field, a breadth of knowledge allowing them to contribute effectively to interdisciplinary projects, and entrepreneurial skills necessary to operating successfully in the new work environment.

"This award comes in recognition of Stevens' commitment to Technogenesis over the last ten years," he concluded, "and it will catalyze the implementation of Academic Entrepreneurship across all Departments and Schools."