

Environment 2020

Executive Summary: We propose Lehigh establish an Environmental Institute to coordinate new and existing programs in environmental research and education. To capitalize on the opportunities available to Lehigh, the Institute will build on three interwoven **thematic foundations: Earth System Science, Human Interactions with the Environment, and Environmental Engineering and Technologies.** These thematic foundations encircle our significant existing research expertise and provide for growth in new areas with considerable potential. Marshalling our research and education resources under an umbrella provided by the Institute provides critical mass, seamless movement between disciplinary boundaries, and will distinguish Lehigh from other institutions.

Over a five-year timeframe, the Environmental Institute will significantly enhance our existing environmental research foci, create and direct 2 new degree programs: a BA in Environmental Studies and an MA in Environmental Policy, coordinate short courses and certificate programs in the area of the environment, and work with the College of Education to offer a MEd in Environmental Education. Within five years, these new degree programs will attract ~60 new high-quality undergraduate students and 35 new graduate students to Lehigh, students who would otherwise go to other institutions. These new programs will complement and enhance our existing BA, BS, MS, and PhD programs in Earth and Environmental Science and Civil and Environmental Engineering and our new BS in Environmental Engineering.

To implement these new degree programs and to expand our existing environmental research strengths, the institute will coordinate the hiring of **12 new faculty, over a 4-year time frame**, to fill synergistic and interdepartmental positions in the interdisciplinary areas of Earth Systems Science, Human Interactions with the Environment, and Environmental Engineering and Technology. These 12 hires will have a formal commitment to the Institute, will teach new required courses in the new programs, enhance curricula in existing programs, and be research active in their respective areas of expertise. After their initial startup period, we anticipate these faculty will contribute approximately \$1 million per year in increased revenue and will support and supervise approximately 35 additional MS and PhD students. This represents a growth of approximately 25% in our environmental research portfolio (estimated at \$4.5 million per year and 120 graduate students). Descriptions of these faculty positions are included in the attached report.

A unique aspect of this proposal is the inclusion of 5 postdoctoral research fellows as integral elements of the research and instructional programs. Such positions are common in institutions with which we compete and have the effect of catalyzing new and existing research areas without commitment of tenure-track positions, enhancing agility and flexibility in hot, new areas of research. We will evaluate the effectiveness of these positions after 5 years to determine whether they have paid for themselves in research-related income (graduate tuition and ICR) generated by associated faculty and in

increased research reputation and productivity (proposals generated and papers published).

In developing this proposal we considered 5 budget models. All 5 models are attached. The funding request and revenue return presented in this document refers to budget model e. Budget model e assumes no growth in the undergraduate pool and that half of the salaries for new faculty hires comes from endowed funds. **To implement this proposal, we are requesting: (1) \$5.25 million of 2020 funds over the next 10 years to bridge faculty salaries and administrative costs; (2) the creation of the Environmental Institute and its administrative structure; and (3) the appointment of a Director to the Environmental Institute.** In our view, our proposed plan will position Lehigh to have a strong reputation in what will be an area of increasing intellectual, financial, and societal interest. Lehigh's technological heritage, married to more recent advancement of all its Colleges, provides us with an opportunity to develop an innovative and clearly distinct approach to environmental issues.

Notes: The attached report represents the deliberations of the Environmental Task Force constituted by Deans Carson and El-Aasser.

- The motivation and rationale for establishing the Environmental Institute in the context of Lehigh's 2020 Initiative is provided on page 1.
- Detailed descriptions of our proposal to develop Lehigh's environmental research and curriculum portfolios are described beginning on pages 2 and 4 respectively.
- Recommendations for short courses, certificate programs, and outreach activities included under the environmental umbrella are discussed beginning on page 8.
- Our proposal hinges on a unique administrative structure that is described in detail beginning on page 9. At Lehigh, the word Institute is commonly applied to focused research groups designed to capitalize on specific funding opportunities. These entities are not always clearly linked to the University's educational mission. In contrast, the Institute proposed in the attached document provides an agile organizational structure to facilitate multidisciplinary research and education intimately linked to Lehigh's core mission.
- Detailed implementation plans (hiring, facilities, and staffing requirements) are described beginning on page 12.
- All proposed new degrees described in the attached report are subject to modification and approval by the appropriate College committees. Since the task force document was prepared, the Department of Civil and Environmental Engineering has implemented the proposed BS degree in Environmental Engineering and is in the process of making a new faculty hire in Fate and Transport of Trace Contaminants as described in the attached report.