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LEHIGH UNIVERSITY:

OFFICE OF CREATIVE INQUIRY

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QUICK FACTS

Year founded: **2017**

Project source: **Faculty**

Duration: **3-5 years**

Students per year: **375**

Interdisciplinary: **Yes**

Vertical integration: **Yes**

By: Bill Whitney, Assistant Vice Provost for Experiential Learning Programs; Khanjan Mehta, Vice Provost for Creative Inquiry

PROGRAM SUMMARY

The Office of Creative Inquiry supports a wide range of interdisciplinary initiatives that help students and faculty pursue new intellectual, creative and artistic pathways that lead to transformative new innovations, expressions and questions. Creative Inquiry is an integrated learning, research and engagement program that supports real, authentic and meaningful projects on their winding journeys toward tangible and sustainable impact. Creative Inquiry at Lehigh supports multiple university-wide programs, but our core initiatives — the [Impact Fellowship](#) programs and the [Mountaintop Summer Experience](#) — are vehicles for supporting and incubating faculty-guided, student-driven, authentic multi-year projects with large-scale ambitions focused on innovation and real-world impact.

The Impact Fellowships (IFs) are integrated learning, research and entrepreneurial engagement programs for interdisciplinary teams of faculty and students to work collaboratively with each other and external partners. The primary (but not exclusive) focus of these programs is on the UN's Sustainable Development Goals, with particular emphases on the environment, health, economic growth and the food-water-energy nexus. The five current programs are the Global Social Impact Fellowship ([GSIF](#), founded in 2018), the Lehigh Valley Social Impact Fellowship ([LVSIF](#), founded in 2019), the Campus Social Impact Fellowship ([CSIF](#), founded in 2020) the Silicon Valley Social Impact Fellowship ([SVSIF](#), founded in 2023) and the NextGen Pathways to Transformative Impact Fellowship ([NextGen](#), founded in 2025). The IF academic structure consists of two components:

1. a project-based course in which faculty-student teams work on multi-year projects with the goal of creating new knowledge and translating it to innovative, practical and sustainable solutions; and
2. a weekly one-credit workshop course in which students learn essential concepts, frameworks, methods and tools that are foundational to project success.

Faculty make a multi-year commitment to one of these ambitious projects that aligns with

their research/impact agendas, while students make a one-year commitment through credit-bearing courses with the option of staying engaged for multiple years and walking away with publications, professional networks, a deeper sense of purpose and tangible impact.

The Mountaintop Summer Experience, which began in 2013 prior to the founding of the Office of Creative Inquiry, was Lehigh University's initial effort at creating a space to support open-ended, team-based project work. The program was inspired by the university's 2012 acquisition of two former Bethlehem Steel research and development facilities (still named "Building C" and "Building B") that contained large high-bay space and could function as sandboxes for doing more physical and intellectual explorations than prior university spaces allowed. Mountaintop was initiated as a 10-week summer program with no infrastructure for projects to continue beyond the experimental phase of the summer. The Office of Creative Inquiry was founded in part to create that infrastructure, and also to serve as the hub for university-wide, interdisciplinary research leading to tangible impact in the world.

Here are some project examples from the Impact Fellowships:

Team name	Team description and outputs	Disciplines involved	Activities and outcomes
Save Tuba (GSIF, Kazakhstan)	Almaty, the commercial capital of Kazakhstan and a major hub in Central Asia, is facing enormous challenges with sustainable urban development. Uncontrolled migration burdens the housing infrastructure, outdoor air quality, access to clean water and waste-water management systems at the constantly growing periphery of the city, leading to negative environmental consequences that compromise economic growth. The tuba is a critically endangered saiga antelope native to the Kazakh Steppes. Save Tuba is a sustainability education platform for Almaty's youngest citizens that connects knowledge, inquiry and action to help students build a healthy future for their communities and the planet. Save Tuba enables K-12 students and their teachers to embark on a series of real, relevant and meaningful sustainability actions with the goal of long-term behavioral change. The Lehigh team is collaborating with diverse partners to develop and validate the app and pilot-test it with schools in Almaty.	<ul style="list-style-type: none"> • Computer science • Marketing • Environmental science • Sustainability education • Education policy • Global health 	<ul style="list-style-type: none"> • Focus groups of teachers and students in Kazakhstan • IRB approvals at Lehigh and at Almaty Management University • Graphic design • App design and development • Working with the Kazakh Ministry of Education to implement app into the national middle-school curriculum
Beyond Bars (LVSIF)	The issue of mass incarceration is one that touches lives locally, regionally and globally. The Beyond Bars project aims to examine all of the individual and community-wide consequences that stem from mass incarceration, focused on consequences here in the Lehigh Valley, and use innovative forms of theatre and storytelling to educate, inspire and move citizens to action on behalf of the cause of prison abolition. In the project's first three years, student teams wrote and performed live and virtual pieces of theatre based on stories and interviews conducted in the Northampton County Prison system and around the Lehigh Valley. Currently, Beyond Bars is focused on the school-to-prison pipeline and developing a set of innovative storytelling workshops that will be implemented with schools, youth programs and community organizations to give youth the ability to process and articulate their experiences.	<ul style="list-style-type: none"> • Political science • Theatre • Psychology • Sociology • Public policy • Adolescent psychology • Education 	<ul style="list-style-type: none"> • Toolkit of storytelling workshops for schools and youth organizations • Interviews with formerly incarcerated persons • Focus groups with adolescent psychologists, teachers and youth group organizers • Several workshops piloted in schools

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EcoRealm Environments (CSIF)	Extensive research has proven that being immersed in nature can reduce stress and increase focus, productivity and creativity. It would be wonderful if we could all reap the benefits of the natural world when studying for the next exam, or writing that research essay — but who has time to go into the forest? EcoRealm aims to bring the forest to students with its modular, low-maintenance, immersive plant partitions. Early studies suggest a profound reduction in student stress by simply studying in "the realm." Heading into year three as a CSIF project, this project team is poised to further develop the autonomous plant health monitoring system, the aesthetic design and the manufacturing plan and further refine the business plan.	<ul style="list-style-type: none"> • Mechanical engineering • Computer Science • Electrical Engineering • Psychology • Marketing • Supply Chain Management • Environmental Science • Botany 	<ul style="list-style-type: none"> • Industry interviews • Focus groups for students • Prototyping and refining hydroponic technology • Piloting first prototype in Lehigh University libraries • Data collection and analysis • Cultivating future business partners

RESOURCES AND ADMINISTRATIVE MODEL

The Office of Creative Inquiry is overseen by Lehigh's Vice Provost for Creative Inquiry. Primary program management is done by the Assistant Vice Provost for Experiential Learning Programs, and there are three other full-time staff members as of January 2023 for management of marketing and communications, "Lehigh 360" (a new initiative connecting Lehigh students to high-impact opportunities across campus, including Creative Inquiry programs) and administrative tasks. In January 2024, we jointly hired our first faculty member with the Department of Computer Science and Engineering in the P.C. Rossin College of Engineering and Applied Science. This faculty member has a 50% appointment in the college, teaching first-year curricula, and 50% appointment in Creative Inquiry, mentoring multiple project teams. We hope to scale this faculty model with Lehigh's other four colleges in the coming years. Faculty project mentors are drawn from across the university and are not directly compensated, although nominal project budgets (typically \$500 per semester and another \$500 for summer projects) are provided, with more project budgets granted if needed and if budget allows. The vast majority of funding for the office's entire suite of programs comes from the provost's office in the form of operating budgets, and currently our annual budget is approximately \$800,000, which does not include salaries and benefits for the two highest-ranking employees but does include salaries and benefits for the other two full-time staff members and the faculty member's 50% appointment.

Our ideal operating budget as our programs are currently constructed would be north of \$1.2 million annually, but that does not factor in the continued growth and popularity of our programs which, year over year, see large growth in applications and more students turned away. If we were to fully fund fieldwork for Global Social

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Impact Fellowship students (currently with ~100 travelers per year), it would cost roughly \$4,000 per student, for a total of \$280,000. Needed in-country expenses and faculty mentor travel, which we already fund, totals an additional \$70,000. As it is, we cover all in-country/on-the-ground expenses for GSIF and SVSIF student fieldwork, but do not cover flights, passports, visas or vaccinations, although we do solicit funds from other Lehigh offices, departments and programs to help support an increasing number of high-need students.

The Mountaintop summer program is the largest single expenditure item in our annual budget, since students receive stipends of \$5,000 for undergraduates and \$6,000 for graduate students — currently we are funding 60 undergraduates and 8 graduate students in 2024, totaling ~\$350K for stipends alone, plus operating costs of staffing and running the program that total approximately \$100K more. That is as far as our budget stretches, but we would ideally like to fund more students.

We have received a few gifts, including several endowments to support student stipends, and a five-year expendable gift which has provided support of \$15,000 per year for global student fieldwork. Other small gifts have materialized as well, totaling near \$5,000 to \$10,000. We have ongoing conversations with interested alumni about larger endowed gifts, however, we do not have a dedicated development professional who works on soliciting gifts for Creative Inquiry, so any fundraising is done on an ad hoc basis. Finally, individual projects are strongly encouraged and supported to write extramural funding proposals for their own purposes, and we have had several successful grants and awards given to our projects, including VentureWell E-Team grants, Davis Projects for Peace awards, Grand Challenges Canada grants and others.

BEST PRACTICES AND LESSONS LEARNED

As the Creative Inquiry office has been focused solely on developing core programs and scaling to the highest possible level given budgetary limitations, we have not yet engaged in a structured external evaluation, although that is on our docket for some time in the next two to three years. Internal evaluations, however, are ongoing and consistent, and we are constantly refining our administrative policies and procedures, protocols for data tracking, communications efforts (including social media presence), internal marketing and external thought leadership, and perhaps most importantly, individual project evaluation. We have a Faculty Advisory Committee consisting of at least one senior tenured faculty member from each of Lehigh's five colleges, and engage in regular dialogue with the provost, who serves as a sounding board for new ideas and initiatives. Through this, and upon reflection of where we are now, we have a few lessons that can be noted as key to our success.

FOCUS ON IMPACT AND OUTCOMES: We frequently tell our students and faculty that everything we do is structured around three goals: impact, impact and impact. We take this extremely seriously and avoid any perception of indulging in short-term academic exercises that do not stay focused on project outcomes and pathways to implement new innovations. We allow faculty

and students to define impact in a myriad of ways, and encourage projects that are focused on new policies, procedures or creative works as much as ones yielding engineering technologies or scientific discoveries. In fact, all of our teams are built to be interdisciplinary, so although each project certainly has a disciplinary field of focus, beyond the initial stages of research all projects take a holistic systems approach to building partnerships and implementation pathways. Project teams build and continually refine business models, financial models, value propositions, matrices of partnerships, funding proposals, and opportunities to share and amplify research and praxis innovations on national and international stages.

BUILDING STUDENT PORTFOLIOS: Undergraduate students in Creative Inquiry programs have been responsible for presenting their work at national and global conferences, publishing their work in peer-reviewed professional journals, writing successful grant proposals — some for awards as large as \$100,000 — and obtaining governmental regulatory approvals for new technologies. Some of the students responsible for undertaking this work have been first-year students. This is proof that when student passion and ambition are applied with the intellectual capital and resources of a university, it is never too soon for them to begin participating in the world of professional research and praxis. A core part of the ethos of Creative Inquiry is that what gets done is what matters, not who does it or what particular hoops they have cleared prior to doing the work. This has represented a significant cultural shift at Lehigh University (cf. challenges below), but by focusing on success stories and highlighting student achievements, including successful career paths and outcomes after graduation, and utilizing student testimonials, we have been relatively successful at silencing some of the doubters.

EXTERNAL CALIBRATION: Alongside outcomes, we have placed a very strong emphasis on external validation and calibration of any project. To reinforce this, we do several things as a matter of practice. For one, we provide multiple opportunities within a semester or a summer for student teams to deliver presentations/pitches to referees who, much of the time, are drawn from outside Lehigh, and sometimes are faculty at the university who have no direct relationship to our programs. These presentations always include a large degree of open Q&A. Through these undertakings, students are compelled to answer tough, pointed questions and justify their goals, methods and progress in ways that do not allow them to indulge in the usual performativity and approval-seeking that come with many in-class assignments. Second, we invite many guest speakers (we typically call them Innovators in Residence) to visit and talk with students about projects that overlap with their areas of expertise, particularly in the summer program when it is somewhat easier to invite outside guests. Finally, by encouraging students to write proposals, publications and conference submissions, we introduce them to the process of high-level peer review and feedback.

STRONG PARTNERSHIPS AND COLLABORATIONS, OPEN INTELLECTUAL PROPERTY SHARING: Unlike many traditional capstone projects, our projects do not have industry sponsorship — at the end of the day, students, with the guidance of their faculty mentors and the advice of

external partners, determine the trajectory and deliverables of their project. That said, we have built and relied upon global and local networks of organizations and individuals who collaborate with our project teams — whether operationally, intellectually, methodologically, financially or, many times, a combination of these. Our students are taught how to cultivate and scale these relationships, how to identify “win-win” scenarios, what different kinds of organizational models might make the most effective partners, and how to communicate with and to partnering organizations and individuals. As a corollary to this, we have a single intellectual property (IP) policy: “Please infringe.” We work in an open-innovation environment where there is no protected IP, and when and if such potentially protectable IP is developed, the project moves to a different stage of its lifecycle where it is no longer directly part of our ecosystem. This allows for much freer exchange of ideas with partners and eliminates many of the barriers to collaboration that come up when protectable IP is at the center of the work.

CHALLENGES AND PRIORITIES FOR THE FUTURE

Our office was founded and initiated without an overarching mandate, clarity of direction, funding allocation or sufficient staffing. From that inauspicious beginning, in seven years we have grown to a university-wide operation with visibility across all of Lehigh’s colleges and a strong presence within Lehigh’s Admissions programs. We have strong support from Lehigh’s current leadership as well. That said, we are not without our challenges and obstacles.

FACULTY ENGAGEMENT: Most significantly, faculty are not directly compensated for mentoring Creative Inquiry projects, either through salary or discretionary funding. Early in the Mountaintop Summer Experience program, the program had gift funds to provide faculty with additional discretionary research funding based on how many students they mentored. This practice was discontinued because of budget limitations driven by changes in the university’s development structure and the desire to prioritize funding more student participation. When this change was made, many participating faculty became upset and quit participating in the program. This was not an entirely negative development, as it allowed us to rebuild the program with a new core philosophy of project continuation rather than the prior model of summer-only projects, and to create new courses and curricula that integrated these projects into credit-bearing activities. Still, it has been a long road to cultivate a new set of faculty who are willing and able to mentor projects that align with their research or impact agendas, without course releases or other direct incentives, and often without full support of these activities in their promotion and tenure portfolios.

Many faculty see the value in these projects and the potential for publications and grant funding that come with them, but many times these outcomes only occur after two or more years of arduous mentorship and cultivation of students. As one method of overcoming this challenge, we are in the process of working with each of Lehigh’s five colleges on a joint faculty hire, who would teach courses for their home college as 50% of their effort, and mentor multiple

Creative Inquiry projects as the other 50%. As mentioned above, we have already in fact hired such a position with Lehigh's P.C. Rossin College of Engineering and Applied Science, and thus far it has proven to be a successful model on which to build future such hires.

HIGH-NEED STUDENT FUNDING: Lehigh University in general has an ever-increasing number of students who are first-generation college students, BIPOC and/or come from lower socioeconomic backgrounds. This is undoubtedly a positive development for the university. As we have found, these students are increasingly gravitating toward Creative Inquiry project work at even higher proportional numbers than they are adding to the Lehigh student population — again, a circumstance which comes with myriad benefits and positive outcomes, but also the particularly acute challenge of funding these students for summer programs, international/national fieldwork experiences and presenting at conferences. Many of these students are not able to bear more than a very minimum amount of out-of-pocket costs, and some of them cannot even consider these high-impact experiences because of cultural/family pressures to stay focused on their degree pathways, or because of lost time needed for work-based income.

INTER-COLLEGE/UNIVERSITY PROCEDURAL CONFLICTS: This is the most succinct way to describe an ongoing challenge that we face, as a university entity unaffiliated with any of Lehigh's five colleges but compelled to work with all of them equally. Lehigh University is extremely college-centric in its structures, to the degree that a student who matriculates at Lehigh's College of Arts and Sciences has a vastly different collegiate experience than one who matriculates at, for example, the College of Health or the College of Business. These differences manifest themselves in one way through students' different abilities to take credits and undertake experiences that do not translate directly to a degree program, and, in a less direct way, how much encouragement students are given to do so. For example, early on, one of Lehigh's largest undergraduate colleges would not acknowledge our courses nor their associated credits. While this did not mean that their students and faculty could not participate, it certainly limited the benefits to participation. That stance has since been modified to allow for Creative Inquiry credits to count toward student graduation total credit numbers (with a maximum of six), but there continues to be some resistance to our programs as a whole, making it more difficult for us to recruit new faculty and open up college-based sources of student funding.

All these challenges aside, our primary goal and target for the future continues to be two-fold: first, continue to scale the numbers of projects, student participants, and faculty mentors to be approximately double where they are now; and second, to create a system that leads to robust project outcomes and societal impacts that are tangible, sustainable and extremely noteworthy. The latter is probably more important to us than the former, since it is still an open question how far we should, could or will intend to scale, but what remains the core of our programs is the focus on impact, and teaching students how to create impact while cultivating

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**Moving forward,
 Creative Inquiry
 leadership aims to
 increase program
 reach and continue
 supporting projects with
 tangible, sustainable
 impacts on society.**

new mindsets, skillsets and portfolios of accomplishment. We wish to be a fully transformative educational entity and continue to push a culture shift and mindset shift at Lehigh University which, to the credit of its leadership, has truly embraced impact as a critical piece of its ethos and incorporated that principle into its new strategic planning process. Creative Inquiry will continue to expand its staff and number of programs offered while keeping project-based learning at the core of its operations.

Lehigh University is located in Bethlehem, Pennsylvania. It is a private research university with 5,600 undergraduate students and 1,800 graduate students across five colleges (one of which is graduate-only). Around 40% of Lehigh students have a global experience during their undergraduate years.